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Commonwealth Veterinary Association

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Invitation

It gives us great pleasure to invite you to attend the 13th Australasia/Oceania Commonwealth Veterinary Association [CVA] Regional Conference to be held in Nadi, FIJI from 2nd to 6th September, 2013.

The Conference theme, "Sustainable Animal Health and Production – the role of veterinary education, disease control, food safety and food security and animal welfare" focuses on the key challenges in raising livestock in this vast region, with special emphasis on the island nations.

Island countries and territories in the Pacific are highly vulnerable to a range of external shocks such as climate change and invasive alien species and their small sizes and populations as well as their dis-economies of scale can make the challenges of national development very complex and daunting. Animal health and production services are generally inadequate and yet there is huge pressure and expectation to attain a greater level of self-sufficiency and sustainability in live-stock production systems. Disease control and emerging diseases, especially zoonoses, are a major priority and enhanced veterinary capacity is a special goal across the Pacific region. This 13th CVA Conference follows on its 2 very successful predecessors held in Lae, PNG in 2004 and Apia, Samoa in 2008 and will be staged in the west of the main island of Viti Levu.

A comprehensive scientific program will include presentations by a range of knowledgeable speakers from both within and beyond the region. Maximum opportunity will be provided for discussion and networking and informal engagement. It is intended that a number of priority recommendations and strategies will emerge and that these will be endorsed by the Conference for intended action by individual island states as well as by regional intergovernmental organizations where this is applicable, such as the Secretariat of the Pacific Community [SPC] a key partner of the CVA. Other important participating entities will include OIE [World Organisation for Animal Health] FAO and WSPA [World Society for the Protection of Animals]. The Conference will also include a Companion Animal stream which will provide updates on regional needs and priorities in this expanding sector, plus coverage of dog management issues and strategies as well as a very current Professional Continuing Education component. [See further details herewith]

Following a traditional ceremony of welcome and keynote addresses in the morning of the first day, the Conference will split into the 2 streams. In addition to presentations, several panels will be mounted on key subjects and working groups are also intended on selected specific issues. The important session on 'veterinary education' will be a common one to both streams to enable the needs, challenges and possible strategies to be considered in totality across the sector. The Concluding Session in the afternoon of the 4th day will focus on agreeing on conclusions and priority recommendations with particular overall outcomes in mind.

A highly interesting and relevant Field Trip will be staged on the 5th and final day, to the Northern region of Viti Levu, an area of great natural beauty as well as livestock production and aquaculture. This will also include a visit to the famous Fiji Water bottling plant!

The Annual Fiji Agricultural Show will be held in parallel with the Conference in the nation's second city of Lautoka [20 minutes from the Conference venue] and this will provide an excellent opportunity to learn more about Fiji's natural resources and wider sectors.

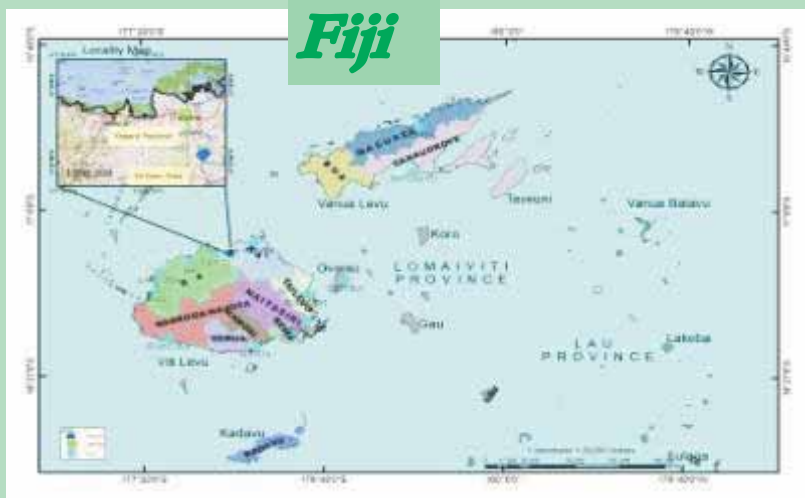
In addition, an interesting Spouses Program will be mounted together with a program of social events most evenings.

The Conference venue, the Tanoa International Hotel is a very popular one with an excellent reputation for service and facilities – it is only 5 minutes from Nadi International Airport and is also close to other hotels and restaurants. The Ministry of Primary Industries of the Fiji Government is providing full support to the Conference which it views as extremely important to national as well as regional development plans and aspirations.

Fiji is considered by many to be the most interesting and appealing of the Pacific island states. It sits across the 180th meridian of longitude and is really at the cross-roads of the South Pacific. Its people represent a rich blend of indigenous, Pacific island, Indian as well as other cultures and there can be few if any elsewhere in the world more friendly and hospitable. A great Conference and island experience is assured for all participants.

Dr Robin Yarrow
Chair, Organising Committee

Dr Kenneth Cokanasiga
Deputy Chair, Organising Committee



This archipelago of more than 300 islands is spread over 1.3 million square km of ocean, in an area where each day technically begins. While many Pacific island states boast stunning natural features, there is little doubt that Fiji is a stand-out in many ways. In addition to some of the most pristine islands and marine ecosystems found anywhere, Fiji also possesses extensive forested inland areas of great beauty and diversity. It is home to Fiji Water, an ecosystem service which is now one the most recognized of pure products globally.

Fiji hosts a number of regional intergovernmental organizations, such as the University of the South Pacific and the Pacific Islands Forum Secretariat, as well as many international entities and is effectively the main regional hub island country. The tourism sector is

understandably well developed and Fiji provides a wide range of choices of accommodation plus good value for money. The Conference will be located within the main tourism region of the dryer western part of Viti Levu, with excellent access to many offshore islands and a range of activities. Coupled with the special natural features, Fiji's human resource is a fascinating mix of people who genuinely appreciate and welcome visitors. Biodiversity in Fiji, particularly of plants and also birds, is quite diverse for a small is-land country and is another item of special ap-peat and interest.

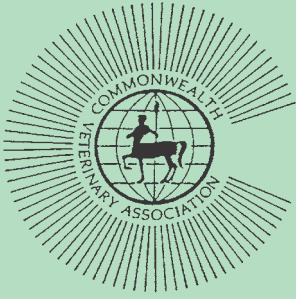
Fiji secured Independence from the United Kingdom in 1970 and is gearing up for Gen-eral Elections in 2014. It is an active player in both UN and regional affairs, often in a man-ner which is disproportionate to its relatively small size and is looked on with affection by a good number of both larger and smaller neighbours.

September offers the best weather conditions, being dry [only 5 wet days on average] cool and much less humid than in the summer months. Average maxima are around 27 – 30 degrees and most nights in the Nadi area go below 20 degrees to as low as 15.



Fiji Orange Fruit Dove





13th Australasia/Oceania CVA Conference 2nd to 6th September, 2013 Nadi, Fiji

Theme:

*Sustainable Animal Health and Production in Australasia/Oceania
– the role of veterinary education, disease control, food safety and security
and animal welfare.*



*Organised by Fiji Veterinary Association
& Commonwealth Veterinary Association*



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President's Column



Dr. S. Abdul Rahman

The CVA is a unique voluntary network which reaches out to the real grass roots level, in terms of projects involving farmers in often depressed areas, while working closely through the national veterinary associations in question and member veterinarians. In the process, these projects give the involved local communities meaningful assistance while also highlighting the importance of helping needy rural farmers, many of whom are women, to better help themselves. A potential benefit is for the experience gained and lessons learned through projects which the CVA supports, to be applied elsewhere, both in-country and beyond.

Sustainability of our projects is a key design feature and unfortunately during the last two years this has been wanting due to the non availability of project grants from our principal sponsor, the Commonwealth Foundation. Attempts are being made on a war footing to see that CVA continues its activities at the grass root level to help the underprivileged farming communities in the developing parts of the Commonwealth in Africa and Asia.

The bulk of our activities which we mount, are in direct support of the veterinary profession, particularly through the dissemination of professional knowledge and by capacity-building. We live in a very unequal world and the needs are great, especially in the poorer developing countries in Africa. There is much more we could do if we had a higher level of funding. Nevertheless, we believe we are making a difference to the wider profession and the example of this is the CVA Rabies Diagnostic Laboratory which has been set up in Bangalore, India with the help of Crucell, Holland, and the laboratory will help diagnose and confirm Rabies cases in dogs in order to save human lives. The laboratory which is the only one dedicated entirely for Rabies diagnosis will serve the whole of the Indian subcontinent.

The most significant event which will be held shortly, is the Australasia Oceania Regional Conference and Meeting of the CVA at Fiji. That this conference is being held in a predominantly small island region is of special significance for other island Commonwealth states in particular, given the special constraints which these countries face. These difficulties include low capacity to restrict the entry of and respond to, new diseases threats especially those of zoonotic importance. The island nations of the Commonwealth are also more prone to natural disasters leading to loss of human and livestock lives. The Scientific programme of the conference has in addition to many other topics of importance a session entirely devoted to Disaster Management which is supported by World Society for Protection of Animals (WSPA).

In closing, may I extend my sincere thanks to all my Officer Colleagues and Members of the Executive for their hard work in difficult times.

I further wish the Organisers of the Australasia Oceania Regional Conference led by Dr. Robin Yarrow, our Past President every success in their efforts to host such a mega event.

July 2013

S. Abdul Rahman
President

The Importance of Recordkeeping

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Abstract

Background: There is a drive by Caribbean governments to take agriculture from the farm to the table. Integral to that drive is recordkeeping. Where are we now? Where are we going? These questions can be correctly answered from data that has been carefully and consistently documented. The information drawn from this data helps to make informed decisions that can be used to strengthen the agricultural sector.

Method: In order to have information someone has to begin the process of recordkeeping and that someone is you. You the small or big farmer; the manufacturer; the animal agencies; the government institutions; the practitioner; and all those involved directly and indirectly with veterinary medicine. A survey of small farmers in Barbados was conducted to evaluate farmers and their perception of recordkeeping. Thirty animal farmers who owned and managed various animal farms from across the island were interviewed.

Results: Even though there are many benefits to the simple task of recordkeeping the survey showed that many small farmers did not think that recordkeeping was important. The literature also concur that small farmers find recordkeeping, whether manually or electronically, to be time consuming and hence either do not record data or very loosely make documentation of their daily farming business.

Conclusion: This being the case, they are more than likely to make uninformed decisions which are guided by these vague documentations. In most cases the farmer either went out of business or reduced the amount of animals kept.

Introduction

Agriculture is essential to the livelihood of first, a village, a community, a country and then the world. Veterinary medicine, a branch of agriculture, is equally important to the social and economic aspects of any country. In the Caribbean, veterinary medicine is forging ahead in making a positive impact on the economics of the country while bringing this field of science closer to society by trying to build bridges to advance research. "Agriculture is too important to the economic well-being of Caribbean countries to be allowed to slip into continuous retardation." (Francis 2010). Prevention of retardation starts with the consideration for the health and welfare of animals. Caring for animals, be it for food or pleasure, will lead to healthy societies. Caring requires the presence of information in order to make informed decisions to maintain productive husbandries. Proper recordkeeping plays a vital role in helping stakeholders in their plight to maintain productive husbandries so that bridges can be built and advances can be made in this field of science.

In 2004, the Government of Trinidad and Tobago stated that "one of the important prerequisites required for ensuring long term sustainability and competitiveness of the agribusiness industry was the need to have a sound domestic health and food safety environment." (Francis 2010). This environment would focus on the adoption of a farm to table or farm to fork approach to food safety. The success of such a venture will rely heavily on proper recordkeeping. The documented records should be accurate and current so that relevant information can be retrieved to assist in effectively dealing with a health and food safety situation. All stakeholders who have a vested interest in their animals should carry out some sort of documentation on the activities they perform. How and when it is done proves to be a challenge. A research on small animal

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farmers in Barbados concluded that for most farmers, recordkeeping was not important. This paper will seek to point out the importance of recordkeeping by identifying the benefits and highlight the challenges that can be faced when there is none or poorly done recordkeeping.

Importance of recording keeping

Information is power, and the key to building bridges that are strong and sustainable for generations. Knowledge in veterinary medicine opens many doors and helps in the advancement of the sector. Knowledge starts with the simple task of recordkeeping be it simple as a written note or simple as a mental note. Whatever the method used, to begin the process of recordkeeping one must know what constitutes a record. A record is "a permanent account for something known but not always written down about the past of somebody or something, and it can also represent projections of future plans that an individual or enterprise is willing to achieve" (FIT Uganda 2008). In other words it is something that presents confirmation of a specific activity. A good record should have the features listed below.

A record:

1. Must be simple
2. Must have data that is useful
3. Should provide accurate data
4. Can be easily converted into information
5. Must be suitable for the purposes of the organization
6. Must be easily retrievable to make informed decisions

It matters not the quantity of animals on the farm, what matters is that the process of recordkeeping is being undertaken. There are numerous types of records that can assist in the successfully management of the farm. The types of records maintained would depend on the operations of the farm. However there are a few basic ones that an entrepreneur should maintain. They are:

1. Production records: feed, birth and death, parentage, growth, identification tags
2. Financial records: income, wages, expenses, receipts, assets
3. Medical records: should provide access to the health history of each animal, documenting

diseases, vaccination, owners, medications, treatment, reaction to medication

4. Supplementary records: legal documents, animal license
5. Inventory records: assets, liabilities

In general these records are important and essential to the business. They are most valuable when the information retrieved from the recorded data allows the user to make informed decisions. Data "refers to a set of given facts" such as dates, names, quantities, cost, and so on" (Chowdhury, 2010). It is important that the recorder of the data meticulously enter the data into the record. Good records must have content that are vital, accurate, neat, complete with significant facts and legible. The finished record must represent the actual situation in which the information will be applied so that the user can understand or follow the trend of thought to constructively use the information.

In an independent study conducted in 2012 on small farmers in Barbados the results showed that 54% of the respondents operated their farm for over 21 years while 43 % operated between 11 and 20 years. Three percent (3 %) were in operation for less than six years. In all that time 63% indicated that they did not keep records while 37% indicated that they actually kept some basic records. Ninety-one (91%) of the respondents indicated that they kept financial and production records. The other records kept were 36% medical records, 18% inventory records and 27% supplementary records. The respondents who indicated that they did not keep records pointed out that they did not think that records were important to their business. In fact they kept the farm data in their heads.

A respondent recalled that his animals were sick some years ago. At that time he did not document any medical records for the animals. He admitted that he kept the information in his head and had to remember the medical conditions and the treatment for the animals. While the animals did survive the ordeal, the farmer admitted that his method of handling the situation was not in the best interest of the animals. The situation could have been better handled if he had records of the animals before and during the illness of the animals.

Another farmer who produced a particular brand of dairy feed encouraged one of his customers who used a competitor's brand to carryout recordkeeping on milk production for a two month period. The customer was required to first record the amount of milk each cow

produced for a month using the competitor's brand of feed. Then the farmer's brand of feed was used the next month and the production data was recorded. The two months of milk production was computed and compared. The results showed that the cows produced more milk using the farmer's brand of feed rather than the competitor's. The recordkeeping helped to encourage the customer to change feed brands and the competitor to revisit the manufacturing of his feed for cows.

The Tobago agricultural report for 2010 featured data on pig farms over a five year period. The report revealed that the average number of farms for the period increased from 47 in 2005 to 79 in 2010. These 79 farms were further categorized as small with 1-30 pigs; medium with 31-100 pigs, and large with 101 to over 500 pigs. The average number of pig farms by size data showed that small farms increased from 32 in 2005 to 57 in 2010 with a peak of 60 in 2009. Medium size farms in 2005 numbered 14 but by 2010 there were 19 with a peak of 23 in 2008. There was 1 large farm in 2005 which increased to 6 in 2007 and decreased to 3 by 2010. Data was also collected for the amount and type of pigs on the farms for period. The government used the information gathered from this data to estimate the number of pigs and the quantity of pork sold for the period under review. Government can then use the recorded data to decide whether pork should be imported or not to satisfy the needs of the consumers.

Researchers in Pakistan were able to use recorded data on 575 records of 270 Holstein Friesian and 818 records of 326 Jersey cows to conclude that:

"A significant difference in production performance was observed among breed groups. Lactation milk yield was higher in imported than in farm born cows. Season of calving was an important source of variation for milk yield. Cows calved during autumn and winter showed good performance" (Lateef, Gondal, Younas, Sarwar, Mustafa & Bashir, 2008).

The example showed that good recordkeeping allowed the researchers to make informed decision about the progress of the animals. However, they would not have been able to do so without a proper method of keeping records.

Recordkeeping systems

Recording systems can be identified as note books/exercise books, loose leaf files, cards, identification tags, in photographs, on videos, oral recordings and on

computers. Handwritten and computerization are the two basic systems of recording data. Each system has its advantages and disadvantages therefore the stakeholder must identify which system best applies to the situation and the resources available in the business. Handwritten records are most common among small farmers. They are the cheapest and simplest system to implement and maintain. Notebooks or exercise books are lightweight which makes them easier to lug around the farm. Carrying the recording system everywhere however poses the problem to safe keeping of the data as the books may become soiled or lost. Handwritten records are sometimes the most difficult to evaluate if clarity of data is not evident.

Some farmers can also use computers as a recording system. The system can be setup with simple forms to document data. The efficient use of the computer system depends on the skill of the user and the simplicity of the form. It must be noted that computerization can be costly because it requires a computer, software package, printer and quite possible extra storage devices like external optical drives, CD-ROMs and flash drives to preserve the numerous amounts of data generated by the business. There are numerous computer recordkeeping systems software packages to choose from such as FarmLogic, AgSquared, My Animal Manager, Microsoft Excel Spreadsheet, and Microsoft Access database. Computers have the advantage of making analysis of data easier, quicker and accurate.

No matter the method of keeping records, the construction of the form depends on the type of information required and the results to be retrieved from the data. Whatever the method used to store the data good practices must be adhered to. There must be consistency and regularity in documenting data for the system to work. Those small farmers who kept records indicated that the recorded information was current but not necessarily accurate or complete. A goat farmer from Texas reported that he started with "a spiral bound notebook and a pencil" to record information on his 3 goats (Smith, 2002). As the business expanded he moved to loose- leaf files then to computers as the business got bigger. He also made use of "dry marker board and large-block calendar" to record his data. This is exemplary of good records and good recordkeeping which can yield many benefits to the users of the data.

Before the invention of computers, animal farmers, big and small kept handwritten records. The information generated was stored in stacks of printed papers. Analysis of these stacks would have been difficult and retrieval of

information would have been time consuming. Farms that have been in existence for many years may have experienced this situation. Today retrieval of information can be made easier with databases. An infinite amount of data can be keyed into the database which can organize, store, and maintain data for easy retrieval. Again that simple task of recordkeeping aids in adding to the knowledge bank of veterinary medicine.

It is recommended that records should be kept for a minimum of ten years before some are selected for disposal and some are marked for preservation in an archive.

Preservation

The simple task of recordkeeping can be preserved for future reference. The information contained in the documents is valuable for present and future research. Pedigree records that document the birth, mating, health and problems of an animal can be used for genealogy purposes as in the breeding of horses. It has been reported that the breeding shed on a horse farm is perhaps the most important place for accurate recordkeeping. The records are needed for "breeding management, estimating foaling dates, and evaluating breeding performance" (Freeman, 2009). Pedigree records for animals such as horses and dogs are permanently kept and should be properly labeled with descriptive notes for proper referencing. Preserved records can also be useful for recounting the past.

A medical problem that may have occurred 30 years ago can be referred to as a source of reference if a similar problem is presently occurring. If good records were produced 30 year ago while investigating the problem and archived, then it can be retrieved to assist in solving the present problem. The information documented in the record should identify what the situation was, the processes taken to solve the situation and the outcome of the situation. It should also identify where the situation occurred and who carried out the research to solve the situation.

Access

Documentation of data is essential, but if there is difficulty in accessing the information, then the system used for keeping records has failed. For instance a farmer using an exercise book for recordkeeping and for some strange reason the book got wet and the data becomes distorted. Retrieving information from that system would prove difficult and may be of no use to the user. Likewise the use of computerized systems to record and store data

can prove to be useless if the data stored is unattainable. There can be many reasons for this. Some can be computer glitches (crashes, technology change, power outages, and system failures) or simply human error. The recorder of the data may be technology illiterate and may not know how to use the computer or the software properly and hence as the saying goes "garbage in is garbage out". Therefore special care of recording systems plays an important part of good recordkeeping.

Benefits of record keeping

The purpose of keeping records is to assist farmers to effectively and efficiently manage their enterprise. There is no point in spending valuable time on records if they are not going to be used. The survey in Barbados showed that normally the small farmers did not see any benefits in keeping records. Many commented that the business was too small to warrant records. To them it was just a matter of growing and selling the animals. Some respondents enter animal farming because they loved animals. However, in conversation with respondents, explaining the benefits of recordkeeping some acknowledged the benefits that can be achieved. Bonifacio explains that "there is nothing more necessary for clearing up and illustrating obscure matters, than a well constituted store of documents and records" (Duranti, 1989). To illustrate the benefits that can be achieved, the paper highlights some success stories.

1. It allows management to make decisive decisions about the business. The data when interpreted will allow the entrepreneur to plan strategically for the business. Pig farmers in Zaria are instructed to keep accurate records of their enterprise as "it gives a clear picture" of how the business is being conducted as well as measure its success (NAERLS, 1995). Data such as the number of pigs in the herd, feed consumption, mortality, medication, sales, reproduction, boar performance, sow productivity etc. are vital facts to help with the strategic planning of the business.
2. Profitability of the business can be accessed through financial records. Pastor Sam Kasuel, a farmer from Semuto in Central Uganda was able to assess the income gained from his daily activity through good recordkeeping. He declared in an interview that "keeping proper records helped him to track everything that goes on at the farm" (Kato, 2012). His farm has been so successful that he no longer has to buy food and milk for domestic consumption.

3. The records can assist in obtaining funding. Tham-Agyekum noted that Ghana poultry farmers who had "well-kept farm records were in a more favorable position to borrow needed funds"(2010). This scenario is also true for other animal entrepreneurs who have vested interested in their chosen venture. Keeping current and accurate records of revenue and expenditure can guarantee further funding for the entrepreneur.
4. Recordkeeping can assist in gaining government support. The government of Barbados established a Livestock Development Fund to "provide small loans to start new businesses and expand existing business" in an effort to reduce unemployment in the country (Francis, 2010).
5. In St. Vincent and the Grenadines, to resolve the problem of praedial larceny it was recommended that "all buying and selling of produce must be receipted and recorded with specific information to support thorough investigations. Farmers' registration and identification should be continuous and legally binding, with mechanisms to identify farm produce and livestock (Francis, 2010).
6. Recordkeeping assist in strategic planning. In Plainview, Texas cotton, grain sorghum, wheat, seed millet and cattle farmer, Glenn Schur, supports good recordkeeping especially with market fluctuations. He explains that new technology has made the difficult task of recordkeeping easier. "Good records show me where I've been, point out current trends and guide me into the future" (Smith, 2007).

These are just a few stories on benefits that can be derived from good recordkeeping. Records can also be used for insurance purposes, to solve problems of health and safety, and clarify land ownership.

Challenges of record keeping

Majority of the small farmers in Barbados are basically back yard farmers. Even though some recognize that recordkeeping is essential to effective management, they have indicated that they have not kept documented records. They have acknowledged that the lack of records contribute to the challenges faced in managing the business. Twenty (20%) of the respondents explained that they do not remember to keep records when they were on their daily rounds on the farm. The results showed that 30% of the respondents indicated that they did not have the time to keep records. Not finding time is quite

understandable since recordkeeping "is not particularly exciting work and is quite boring and time consuming." (Crane 2012) While this may be one of the greatest barriers to recordkeeping, without accurate records decisions can be erroneously made. The situations that affect the well being of the animals and the business cannot be correctly addressed. Certain situations may also be avoided if proper records are kept. Some of the challenges indicated in agriculture literature were age of farmer, gender, farm size, education, and time. Technology can also be a barrier especially for small farmers. These challenges can have devastating effects to the business and the welfare of the animals. Poorly kept records or none at all can have the following effects:

1. The information will often be inadequate for the purposes for which they are needed
2. The information will often be lost
3. There is a great possibility that the wrong records would be retained unnecessarily
4. Retrieval of information would be difficult and resources would have been wasted
5. Obtaining financial assistance from government and lending agencies will be difficult
6. Solving situations that affect the animals will be difficult
7. Being unable to prove that it did what was required for that particular business or that policies and procedures were correctly followed
8. Unable to defend liability claims against law suits
9. Unable to prove its rights or protect assets
10. Compromise business operations when critical information is unavailable when required
11. The rights of customers, citizens and the wider community may also be impaired

Therefore it is vital that there is an understanding for the need of proper recordkeeping. The challenges can be overcome by stakeholders insisting or making it a mandatory aspect of their operations. To inculcate such a behavior the government can implement programmes to inform and train stakeholders in the process of good recordkeeping.

Assistance in recordkeeping

At all levels of the agricultural sector recordkeeping is vital to the success to building strong bridges. The survey on small animal farmers in Barbados showed that recordkeeping was not a popular practice. This attitude impacts on the strength of the sector and needs modification. Education on the importance of recordkeeping and training in performing this skill can be a step in the right direction. An educational project such as this can be collaborated with the Ministry of Agriculture, Food, Fisheries, Industry and Small Business Development and the National Library Service of Barbados. The government and the library can provide the service of:

1. Training in simple recordkeeping
2. Training in analyzing the data to make informed decisions
3. Keeping track of the activities in the communities to identify future training or support needs
4. Training in information literacy
5. Training in technology literacy
6. Repackaging of agricultural information

It is important that this project be ongoing because the practice of recordkeeping or good recordkeeping does not become popular culture instantaneously. Over a period of time with consistent education for newer and older farmers, success should be realized.

Conclusion

Good recordkeeping has far reaching consequences on the field of veterinary medicine and the wider audience. The international markets are affected by the information generated from these records. It impacts on the policies made by government agencies and other governing agencies that assist in propelling animal husbandry forward in the 21st century. The actions of the local farming community which includes every stakeholder, is influenced by good recordkeeping. It is utterly important that those who have animals and those who have the animals' best interest, painstakingly advocate for good recordkeeping as a prominent aspect in the business of animal husbandry. Recordkeeping has not been the norm in Barbados among small farmers and thus were more likely to make uninformed decisions. In most cases the farmer either farmed for pleasure or

reduced the amount of animals kept. Therefore without data or information bridges cannot be built and without good records bridges cannot be sustained.

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An Outbreak of Peracute Enterotoxaemia in a Goat Herd of Saanen in Sri Lanka

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Abstract

There had been ten deaths out of eighty Saanen goats in a private farm, 10-12 hrs after onset of clinical signs over a period of 3 weeks. In postmortem, enterocolitis, pulpy kidney and lung oedema were overt lesions. *Clostridium perfringens* was isolated purely from intestinal contents and kidney tissues. High counts (5×10^5 CFU/g - 5.5×10^7 CFU/g) of *Clostridium perfringens* were detected in intestinal contents. Lung tissues were emphysematous and generalized congestion, haemorrhages and white blood cells infiltration were detected in both liver and lung tissues. Laboratory mouse inoculation test was positive for the intestinal contents of the dead animals. 4 urine samples out of 6 were positive for glycosuria. Level above the minimum digestible energy indicated that feed ration

included with high energy supplement which might have provided high soluble Carbohydrates. Antimicrobial sensitivity test revealed Cephalixin and tetracycline were better choices for treatments.

Keywords: *Clostridium perfringens*, Enterotoxaemia, Caprine

Introduction

Enterotoxaemia also known as pulpy kidney disease is caused by *Clostridium perfringens*, and the disease in goats is mostly caused by *Clostridium perfringens* Type D (Uzal and Kelly, 1996). The organism appears as Gram positive bacilli with rounded edges and few of which may have spores (Uzal and Songer, 2008). Caprine enterotoxaemia has a

worldwide occurrence and has been reported in goats of any age over 2 weeks. Most of the outbreaks have been reported to occur under intensive or semi intensive management systems. The disease occurs in three forms, peracute, acute and chronic, the cardinal clinical sign of the acute and chronic forms being diarrhea. Peracute form is characterized by sudden death that occurs 10-12 hours after the first signs of the disease appear and it is prevalent at 3-10 weeks old goats (Uzal and Kelly, 1996).

This enteric organism proliferates and produces potent toxins and is absorbed into the circulation leading to fatal illness. The major toxigenic types of Clostridia are Type A, B, C, D and E, that have been classified on the basis of the expression of 4 major toxins namely alpha, beta, epsilon and iota (Halil et al., 2007). The predisposing factors such as sudden changes in diet and feeding enable bacteria to multiply rapidly.

The causative organism of enterotoxaemia is a normal inhabitant of the intestine of most animal species and therefore no value of culturing of this micro-organism from intestinal contents. However, presumptive diagnosis can be established from history, clinical signs and gross post-mortem findings, but confirmation needs laboratory testing (Uzal., 2004). Detection of toxin in intestinal content, quantitative culture followed by genotyping, are particularly useful to confirm enterotoxaemia (Uzal and Songer, 2008).

The main criteria used in the confirmatory diagnosis of a caprine enterotoxaemia outbreak and its epidemiological findings are presented in this investigation report.

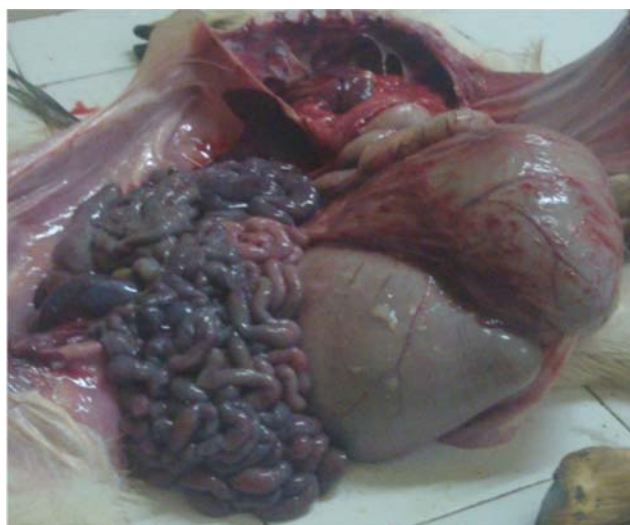


Figure 1. Small and large intestines of a goat with haemorrhagic enteritis. Intestines are distended with gas and haemorrhagic fluid

Materials and Methods

Two postmortems were carried out and gross pathological changes were examined in the organs of thoracic cavity, abdominal cavity and brain. Samples from the affected tissues were taken for culture. In addition to the quantitative culture, intestinal contents were used to detect toxin. The culture was used for the characterization of the organism, antimicrobial susceptibility test. Histopathology was done for lung, liver, spleen, brain and intestine tissues. 6 urine samples from affected animals were tested for the presence of glucose in urine and proximate analysis was done for the feed ration (concentrates).

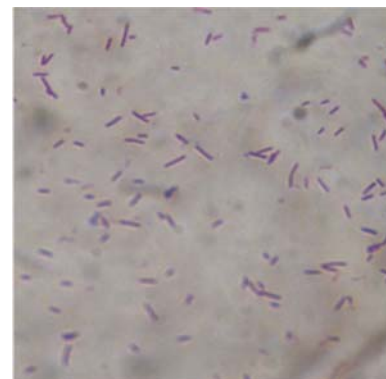


Figure 2. Gram stained smear of Clostridium perfringens

Detection of Toxin in Intestinal Content: Laboratory mouse inoculation test was done to detect presence of toxin in the intestinal contents.

Quantitative Culture: 1 g of intestinal content was serially diluted in cooked meat medium of 9 ml and plated on blood agar and incubated anaerobically at 37°C for 24 hrs.

Conventional Bacteriology: Kidney tissues and intestinal contents were cultured on blood agar and incubated anaerobically at 37°C for 24 hrs. Haemolytic colonies were Gram stained and biochemical tests were performed for characterization (Nitrate, TSI, Gelatin liquefaction).

Biochemical Analysis: Glucose in urine was identified by Benedict's qualitative test.

Proximate Analysis: Goat feed was analyzed for the moisture, ash, crude protein, fat, crude fiber, sand and calculated digestible energy of the given feed

Results

Gross Pathology: Observed lung oedema, enterocolitis, softening of brain and kidney tissues, severe haemorrhages in intestines and haemorrhages on serosal surface of abomasum during postmortem (Fig. 1).

Histopathology: Emphysema was observed in lung tissues and generalized congestion, haemorrhage and white blood cells infiltration were detected in both liver and lung tissues while spleens were congested. The brain and intestine tissues were autolysed.

Isolation of the Organism: *Clostridium perfringens* was isolated from the intestinal content and kidney tissues. Colony counts were 5×10^7 CFU/g - 5.5×10^7 CFU/g (Fig. 2).

ABST: Antimicrobial Susceptibility Test was performed and Cephalixin and Tetracycline were sensitive and Ampicillin, Streptomycin and Erythromycin were found resistant.

Biochemical Analysis: The presence of glucose in urine in 4 out of 6 of randomly selected animals from the affected herd was observed.

Proximate Analysis is shown in Table 1.

Table 1: Nutrient and Energy Levels in the Goat Feed	
Component	Amount
Moisture	9.8%
Ash	5.4%
Crude Protein	14.2%
Ether Extract (Fat)	7.4%
Crude Fiber	7.0%
Sand	0.0%
Digestible Energy	3.15 Mcal/Kg

Discussion

Rural goat farming in Sri Lanka is mostly extensive and heavily depends largely on grazing. Semi intensive management system is practiced in private farms where they feed concentrates in addition to roughages. Weaned kids of 2-2½ month age are more prone to enterotoxaemia and this is mainly attributed to the changes in diet (Uzal and Glenn, 200). In Sri Lanka, there is no vaccination practice of goats against enterotoxaemia. Rations rich in carbohydrates predispose kids to the disease as the digestible energy exceed the tolerable limits (2.55Mcal/Kg-3Mcal/Kg) and this enhances the multiplication of *Clostridium perfringens* bacteria and production of toxin (Uzal and Kelly, 1996; Naylor et al., 1987; Fernandes et al., 2007). Mortality of 12.5% in the herd is a possible death rate (5-30%) in an unvaccinated group (Songer, J.G., 1996).

Conclusion

The results of the present study revealed the death of the animals were due to *Clostridium perfringens* and the mortality rate of 12.5% has caused considerable economic loss. Concentrate feed rations with comparatively higher digestible energy content could have been a predisposing factor

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Quantification of Production Losses Due to Livestock Deaths from Disasters in New Zealand*

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Abstract

Faced with a choice between utilising scarce rescue resources for saving people or livestock in times of disaster, officials and farmers may rationally focus on preserving human life and consider livestock second. However, if the cost of losing livestock to disasters is greater than the cost of evacuation and rescue efforts, the longer term benefits to the economy and society of saving livestock indicate that the cost is worthwhile. This work hypothesises that the economic argument for evacuation and rescue of livestock is sufficient that central and local governments are incentivised to provide assistance, regardless of any ethical or political compulsion to do so.

The analysis considers the impact of several natural disasters and weather events in New Zealand between 1980 and 2010 that resulted in widespread livestock losses, estimating the impact to the economy should these events have occurred in 2009. As Statistics New Zealand use quantity revaluation to measure the contribution of agricultural commodities to gross domestic product, it is possible to model the gross output per head of livestock as a contributor to the nation's economy. These figures are then applied against losses of livestock in disasters to evaluate the total loss of gross output. Leontif multipliers are used to estimate subsequent impacts to the wider economy. As the modeling is based on official statistics, it can be replicated in other economies that use quantity revaluation for measuring agricultural contribution to gross domestic product.

Introduction

When faced with imminent danger from disasters, farmers have ethical and financial drivers to minimize the potential impacts to their livestock. Ethically, farmers have welfare considerations to ensure their livestock do not suffer avoidable distress from injuries, hunger or a slow and painful death as a result of disasters. From a financial standpoint, farmers have invested time and

money into the health and growth of their livestock. Premature death due to disasters will result in this time and money being wasted, as the full economic potential of their livestock cannot be realized.

Despite the ethical and financial incentives for farmers to minimise any impacts of disasters on their livestock, the frequency and magnitude of livestock losses to disasters in New Zealand means that farmers can never fully eliminate the risks of exposure of their livestock to hazards in the natural environment. All land has the potential to be subject to threats or events that can turn into disasters.?

Objective

This report aims to quantify how animal oriented preparation and response activities can affect the impact of natural disasters on the New Zealand economy. It is based on the numbers of livestock lost in previous disasters. These livestock losses are translated in economic costs to farms due to lost production. In addition, the flow-on impacts through other parts of the economy will also be evaluated.

Owner responsibility for the welfare of livestock in the time of disasters is not for debate in this report. This work hypothesises that the economic benefits of animal oriented preparation and response activities compared to the costs of these actions will be of sufficient magnitude that further evidence of the less-quantifiable benefits will not be necessary.

The losses modelled only represent the output lost to the agriculture industry based on the loss of livestock to disasters. They do not include other significant economic impacts including the flow-on effect to other parts of the economy. Nor do they account for production losses due to the loss of transport infrastructure, electricity, equipment damage, soil erosion and silting, or the many other impacts that disasters can have on agricultural production. This is not an accidental

* This work is part of work towards a Master's in Emergency Management

omission. Instead, this report focuses on the impact of livestock losses in order to inform discussions and investigation of the potential savings to the economy that specifically result from evacuation or protection of livestock in times of disaster.

New Zealand Hazardscape

Natural disasters are inevitable in New Zealand. Former New Zealand Prime Minister Sir Geoffery Palmer succinctly described New Zealand's precarious location;

Sometimes it does us a power of good to remind ourselves that we live on two volcanic rocks where two tectonic plates meet, in a somewhat lonely stretch of windswept ocean just above the Roaring Forties. If you want drama - you've come to the right place.

While natural disasters in New Zealand may largely be due to 'acts of God', considering the result of hazards as solely natural disasters ignores the role of human awareness and culpability. It may be impossible to stop a hazard event from occurring; however the consequences of the event are the product of a much wider picture. Prominent among the variables that dictate the long-term impact of hazard risk are the preparation and responses phases to a disaster.

Many of New Zealand's disasters are foreseeable events, with hazard monitoring and early warning systems enabling the evacuation of livestock from anticipated hazards.

Snow: Most inland farms in New Zealand can expect to be impacted by snow each year. Post-event interviews with farmers indicate that they are generally well prepared for snow storms; with established shelter belts and ensuring they go into winter with 1½ to 2½ average winter's worth of feed on hand. Nevertheless, several examples exist of heavy stock losses from snow storms - especially of lambs.

The timing of snowfalls is important - heavy snowfalls in August can be disastrous as lambing and calving takes place at this time. Also two or more large snow events in the same winter can result in devastating stock losses, as feed stocks run down and animals lose condition.

Despite early warning systems and farmer preparation, a recent illustration of the devastating magnitude that snow storms can have in New Zealand during lambing occurred in September 2010 in Southland. In the seven days that the storm lashed the country, it is

estimated that 500,000 lambs and 10 percent of many farmer breeding stock was lost in Southland. These estimates align with the Agricultural Production figures, which show Southland and Otago had 484,000 and 121,000, respectively, fewer sheep in 2011 than the year previous.

Volcanoes: Volcanic activity is potentially one of New Zealand's most under-rated natural hazards. While predicting the timing, magnitude and distribution of eruptions is not an exact science, continuous monitoring does enable preparation for potential evacuations, as volcanoes can show unrest for weeks prior to eruption.

The New Zealand region is characterised by both a high density of active volcanoes and a high frequency of eruptions. Although the probability of an eruption affecting a significant portion of the North Island is relatively low in any one year, the probability of one occurring in the future is high.

Livestock losses from volcanic activity are usually due to acute fluoride poisoning from ingesting contaminated pasture, or ash coverage of feed.

A study modelling the evacuation of livestock from the Taranaki region in the event of a large volcanic eruption found that over 208,000 cows would require evacuation from farms receiving at least 100 mm of ashfall - this equates to just less than a third of the cattle in the region.

Another finding from the study was that this scale of evacuation would take at least 43,600 hours and cost in excess of NZ\$2 million. Evacuation of this scale would require 264 livestock truck and trailer units working around the clock for seven days, or 88 units working continuously for 21 days. An evacuation of this size has never been attempted in New Zealand. It is doubtful that there would be sufficient transport resources to evacuate stock before supplementary feed and water supplies were exhausted, and that surrounding regions could support this number of evacuated stock (MAF, 2011).

Flooding: While it would be unlikely for a single flood event to have a similar scale of losses as other hazards, flooding has been the most prevalent and costly disaster in New Zealand's recent history. Thus, the cumulative effects of recurrent events are more relevant than the scale of a singular, massive disaster.

Livestock losses from flooding are generally due to animals being swept away or trapped on islands by rising

flood waters. Reliable forecasting and early warning systems are in place, however rapidly rising water levels do catch farmers out.

Coping with past flooding events may also give farmers a false sense of security, as several factors can mean that similar rainfall levels result in quite different floods. Variables that come into play include the height of the tide at the flood peak, changes in river channels due to landslides and silt build up, and culvert and rivermouth blockages.

Examples of stock losses to flooding in New Zealand can be found almost every year dating back to the 1960s. More recently, the 2004 Manawatu floods had a substantial impact on agriculture in the region. While Horizons Regional Council report that the event resulted in the loss of \$2.5 million worth of sheep, the basis of this valuation is not clear. Thus, calculations in this report are based on the 5,000 sheep lost as reported by National Institute of Water and Atmospheric Research (NIWA), which may understate actual losses.

Disaster management activities for livestock in developed nations

The focus of disaster management efforts in developed economies, such as New Zealand, differs from activities in less developed nations. The large scale and technological capacity of New Zealand farms compared with subsistence farming in developing nations means that focus of evacuations and capacity of farmers is different. This has both positive and negative impacts on disaster management efforts.

On the positive side, farmers have good infrastructure and effective identification systems in place, facilitating orderly evacuation if needed. They generally have 4-wheel drive tractors, adequate fencing and safe locations to shift stock to in the event of snow or rising floodwaters.

However, the size of farms in New Zealand can mean that large volumes of stock need to be moved in short timeframes. In the 2004 Manawatu floods for example, 10,000 cows had to be relocated in a matter of hours, largely in preparation for the opening of the Moutoa and Flygers Line sluice gates.

Design

A fundamental concept in measuring the impact of animal losses to disasters is that the economic losses do not stop at the farm gate. Hence, losses are examined in

two stages. Firstly the direct cost to farmers of the loss in output due to livestock deaths is estimated. Then, secondly, the direct and indirect costs to the rest of the economy are measured.

Estimating farm losses

Annual constant price output of agriculture as a component of Gross Domestic Product (GDP) is calculated by Statistics New Zealand using quantity revaluation. That is, livestock production is measured based on the sum of sales and the change in inventories, while dairy farming is measured by volumes of milkfat produced.

Thus gross output of livestock production and dairy farming can be modelled using 2009 figures released by Statistics New Zealand of:

- Agriculture output for wool, sheep, cattle, pigs and dairy products
- Value of change in inventories for sheep and cattle
- Total New Zealand kill by animal type

The modelling relies on a range of sources for estimates of livestock lost, including academic journals and government reports. Where possible, any estimates used have been verified from secondary sources, and when a range is reported, the lower end of the range has been used for modelling purposes. However, the accuracy of any modelling will suffer from the lack of a complete, official database of livestock losses.

Modelling the subsequent impact to the wider economy

Statistics New Zealand's Leontief-type input-output tables are used to model the flow-on effects of a supply side shock in the farming industries to the rest of New Zealand's economy.

Input-output tables model the interdependencies between industries in an economy. To produce outputs, industries require each other's inputs. Thus a supply-side shock in farming industries will result in a decrease in farmers' demand from other industries. Input-output tables are produced by Statistics New Zealand's national accounts team approximately every five to ten years, to provide an economic statement of the structure of the economy for a given year.

Discussion

It must be understood that the input-output tables are based on gross output, not value added. Thus, the gross output values for each industry cannot be added together to give a total impact on GDP. GDP is measured using the value added of an industry, that is, the gross output less the intermediate consumption of that industry. Summing gross output of all industries to estimate the impact on GDP would overstate the output of an economy as this double-counts output in various stages of the supply chain.

A key assumption of this report is that losses in production cannot immediately be remedied from elsewhere within the New Zealand economy. That is, it is assumed that agricultural producers are working at their capacity, and any decrease in output from a geographic region affected by disaster cannot immediately be compensated by an increase in production in a region not affected by the disaster. This is not an unreasonable assumption, as livestock cannot be immediately replaced from within the New Zealand economy, neither through live imports or reproduction. Nor can the amount of output from an individual animal be altered overnight - for example the amount of meat from a single beast.

In this work the social impacts of livestock losses are not modelled. It is assumed in this work that the economic incentives to evacuate livestock when necessary (and feasible) will be sufficient that non-economic impacts do not need accounting for. Several studies have found the emotional impact of mass humane slaughter or losses to disasters is traumatic for farmers, who have worked hard to raise healthy animals only to have them killed prematurely. This suggests that the economic focus of this modelling will substantially underestimate the wider social impacts of livestock losses during disaster.

Other cost estimates of disasters overlook the indirect

costs of business disruption, such as transfer costs. The use of Leontif multipliers in this model explicitly addresses this issue.

Results

Based on figures and volumes to the year ended March 2009, the annual gross output per animal is estimated in Table 1.

The Table 2 below estimates the value of gross output lost due to disasters, based on the gross output value of livestock in the year to March 2009.

Wider Industry Impacts

Livestock	Gross Output per head
Cattle (non-dairy)	\$586
Dairy cattle	\$1,128
Sheep, lambs and wool	\$74
Pigs	\$252

Event	Estimated Losses	Gross Output Lost \$000s
Southland floods 1984	100 cattle 12,000 sheep/lambs 330 pigs	1,053
Ex-tropical cyclone Hilda 1990	66 cattle 1,277 sheep/lambs	149
Manawatu floods 2004	1,000 cattle 5,000 sheep/lambs	1,247
August 1973 Canterbury snow	4,137 cattle 133,193 sheep/lambs	13,082
August 1992 snow Canterbury	1 million sheep/lambs	74,057
December 1994 snow Southland	30,000 sheep/lambs	2,222
September 1995 snow	150,000 sheep/lambs	11,108
September 2010 snow Southland	500,000 sheep/lambs	37,028
September 2010 storm North Island	700,000 sheep/lambs	51,840
1995/96 Ruapehu eruption	2,000 sheep/lambs	143
Taranaki eruption estimates	208,000 cattle	188,185

Using the Leontief multipliers, we can estimate the proportional decrease in output required from other industries due to a decrease in output from another industry. Each cell in an input-output table describes the change in requirements from the source industry to meet a one unit change in production for the final demand by the producing industry.

The value where an industry intersects with itself is higher than one, since in order for an industry to change its output by one unit directly for final use, it must actually change its output by more than one - the remainder being required by other industries in order for them to produce their contribution.

An example of the application of the multipliers is provided below. There is little to be gained from repeating the exercise for every scenario outlined above, as the multipliers themselves do not change.

2010 North Island snow storm: The estimated loss of 700,000 sheep and lambs in the 2010 storm are estimated to have decreased industry output by \$52 million. Inputting this into the input-output tables, the resulting decreases in output across the wider economy are detailed in Table 3.

The total impact to the output of the wider economy from the \$52 million loss in livestock output is estimated to be \$126 - an amount 2.4 times higher than the initial loss in output.

Conclusion

Regardless of the well-founded welfare and ethical issues, it can be seen that there is a strong economic argument for the evacuation and protection of livestock during disasters. While farmers obviously have incentive to mitigate risks to their livelihoods, the flow-on effects throughout the rest of the New Zealand economy indicate that a wider set of stakeholders should be considered.

Despite the lack of a comprehensive database of livestock losses to disaster in New Zealand, there is strong evidence that the losses to farmers and the national economy are substantial. The livestock losses used in this report are conservative and only relate to the larger disasters that have occurred in recent history. The true extent of losses has been underestimated, as not all disasters have been considered and of the disasters considered, it is likely that the losses of many farmers were never officially recorded. A more extensive study to identify the full extent of livestock losses to events

**Table 3
Flow-On Impacts Of Disaster Losses**

Producing industry	Decrease in Output \$000s
Sheep, beef and cattle farming	52,840
Meat and meat product manufacturing	25,712
Textile and leather product manufacturing	12,597
Dairy product manufacturing	2,125
Dairy cattle farming	2,022
Clothing, knitted products and footwear	2,022
Horticulture and fruit growing	1,919
Poultry, deer and other livestock farming	1,814
Fruit, oil, cereal and other food manufacturing	1,296
Food and beverage services	1,192
Special food retailing	1,089
Grocery, liquor retailing	985
Supermarket and grocery	829
Agriculture, forest and fishery support services	622

such as snow and flooding would serve to strengthen the argument that the cost of livestock-oriented preparation activities are modest compared to the potential losses faced by farmers and the economy as a whole.

A useful extension of this study could incorporate a comprehensive analysis of the costs to farmers for preparation and evacuation activities in order to support a complete cost-benefit analysis of disaster planning. Such an analysis could serve as a useful tool for education programs and to support farmers' decision making when assessing the opportunity costs of their time and money against the potential losses they face from inaction.

The subsequent flow-on losses from the decrease in production resulting from livestock deaths have serious implications for the New Zealand economy, as decreases in agricultural output have downstream impacts in terms of production and employment in agriculture dependent industries. The wider implications of livestock losses suggest a place for livestock-oriented considerations in national emergency management plans in order to address some of the impacts of disaster onto the wider economy.

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Aquatic Ecosystem Diversity of Shrimp Larvae Rearing Water with Emphasis on Aquaculture Practices

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Abstract

This paper describes the status of shrimp hatcheries in Sri Lanka with special reference to ecology, diversity of *Vibrio* strains, antibiotic resistance and water purification systems for controlling vibriosis in the sector. 64 larvae and post-larvae rearing tanks water, 15 reservoir tanks water, 24 water samples from filtration systems (UV, sand, charcoal, cartridge filtered and chlorinated), 6 algae culturing water, 7 *Artemia* water and one brood stock rearing tank water from 19 different shrimp hatcheries were analyzed. *Vibrio* counts were varied among the hatcheries, ranged from 2×10^1 CFU ml⁻¹ to 7.47×10^5 CFU ml⁻¹ in larvae and post-larvae rearing tanks water samples with the provided optimal ecological conditions and lower coliform counts. Resulted sand, chlorine, charcoal, cartridge filtration were more effective than UV filtration. Possible entry of *Vibrio* into shrimp hatcheries through *Artemia* water, algae, sea water after pumping from the sea (reservoir tank water), brood stock rearing tank water were observed. *V. fluvialis* (27.78%) was predominant in the larvae and post-larvae rearing tanks water and followed by *V. alginolyticus* (20.37%), *V. damsela* which is now called as *Photobacterium damsela* (14.81%), *V. harveyi* (9.26%), *V. anguillarum* (7.41%), *V. cincinnatiensis* (7.41%), *V. mimicus*, (5.56%), *V. furnissii* (1.85%), and *V. cholerae* (1.85%). Highest incidence of antibiotic resistance was evident against erythromycin and lower incidences were observed for gentamycin followed by tetracycline and enrofloxacin. None of the

isolates were resistant to chloramphenicol. Multiple antibiotic resistances in vibrios were shown by most of the erythromycin resistant isolates which may pose threat of the antibiotics being used in other animal husbandry and diseases in humans in addition to the use in aquaculture.

Keywords: Shrimp hatchery, Larvae and post-larvae, *Vibrio* spp., Multiple antibiotic resistance, Sri Lanka

Introduction

The shrimp farming industry in Sri Lanka is dependent entirely on hatchery-bred-post-larvae. There are about 64 registered and 50 functional shrimp hatcheries which are located in North Western and Western Provinces in Sri Lanka to date and they are located mainly in Puttalam district and Kochchikade to Pamunugama area in Western Province and grow out ponds are located mostly in Puttalam district (NAQDA Puttalam District Office, 2009). Post-larvae are sold at the stage of PL 15-17 stage because of low transport damage and high tolerance to pH and salinity fluctuations. Though the shrimp hatchery technology has advanced over the decades the hatchery production is more often hampered by severe mortalities caused by bacteria. Different bacterial genera have been associated with infections of penaeid shrimp larvae, but gram negative Vibrionaceae represent the most harmful pathogenic bacteria (Regunathan and Wesley, 2004). In Vietnam vibriosis was encountered in larvae and

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broodstock (Thao and Khang, 1990). In prawn hatcheries especially luminous diseases has caused incalculable loss since larval prawns are particularly susceptible to *Vibrio harveyi* (Lavilla-Pitogo *et al.*, 1990). *Vibrio* spp. such as *V. harveyi*, *V. splendidus*, *V. parahaemolyticus*, *V. alginolyticus*, *V. vulnificus*, *V. penaeicida* and *V. campbellii* are some important species that have been reported to be pathogenic to shrimp (Lavilla-Pitogo *et al.*, 1990; Chen *et al.*, 1992; Lightner *et al.*, 1992; Limsuwan, 1993; Ruangpan *et al.*, 1995; Hameed *et al.*, 1996). Microbial counts of the rearing water is important since survival rate of larvae and post-larvae is inversely related to *Vibrio* population in larvae and rearing tank water (Singh 1986; Hameed 1993). Accession of *Vibrio* into shrimp hatchery is manifold and it includes seawater, faecal matter and exoskeleton of spawners and *Artemia* water (Lavilla-Pitogo *et al.*, 1992). Feed stuff such as marine bivalves of the brood stock may bring *Vibrio* into the maturation tanks since it harbour opportunistic or potentially pathogenic vibrios (Olafsen, 2001). Usage of antibiotics like streptomycin, erythromycin, and chloramphenicol as treatments and oxytetracycline and penicillin as common prophylactics was reported by Tjahjadi *et al.*, 1994. Consequently potential for development of antibiotic resistant strains of *Vibrio* has been observed (Baticados *et al.*, 1990; Karunasagar *et al.*, 1994; Pillai and Jayabalan, 1996). Therefore, various other measures adopted to control the bacterial flora of the culture water such as introducing microalgae (Igarashi *et al.*, 1990; Regunathan and Wesley, 2004), vaccination (Alabi *et al.*, 2000), use of probiotics (Sung *et al.*, 2001), immunostimulants (Sung *et al.*, 1996).

National Aquaculture Development Authority (NAQDA) in Sri Lanka has taken steps to reformulate the Best Aquaculture Practices (BAP) documented for shrimp aquaculture with the intention of controlling the bacterial flora of the culture water. There is a substantial need to carry out studies on the environment, pathogens and the effectiveness of the preventive measures introduced in order to strengthen the shrimp farming industry in Sri Lanka.

In this study, bacterial disease of shrimp especially vibriosis was taken for the study with the objective of identification of the composition of *Vibrio* communities in larvae and post-larvae rearing water of shrimp hatcheries and antibiotic resistance of *Vibrio* bacteria and to assess environmental conditions that could lead to diseases in the shrimp hatchery industry in North Western Province and Western Province in Sri Lanka.

Materials and Methods

Samples such as larvae and post-larvae rearing tank water, reservoir tank water, water samples from filtration systems, algae culturing water, *Artemia* water, brood stock rearing water were collected into sterile bottles from the commercial shrimp hatcheries which are located in Puttalam and Colombo districts and transported to laboratory within 4 hours in ice. Sea water utilized for hatchery functions were collected following their own filtration systems that were recommended by NAQDA. 64 larvae and post-larvae rearing tank water, 15 reservoir tank water, 24 water samples from filtration systems (UV, sand, charcoal, cartridge filtered and chlorinated), 6 algae culturing water, 7 *Artemia* water and one brood stock rearing water from 19 different shrimp hatcheries were subjected to culturing. Water samples which were collected into sterile bottles were serially diluted and were processed immediately by plating 1 ml on Thiosulfate Citrate Bile-salt Sucrose (TCBS) medium (Oxoid Ltd., Basingstoke, Hampshire, England) to get viable *Vibrio* spp. counts by incubating at 30°C for 24 hrs. Colony morphology was observed on TCBS agar. Yellow and green colonies were counted to obtain colony forming unit per ml (CFU ml⁻¹). All isolates were purified by subculture on blood agar with 1% NaCl (Taylor *et al.*, 1982). Cell morphology was determined by light microscope observations of Gram stained smear preparations. Motility of the organism was tested under light microscope by 100X magnification by using slide with a drop of young bacteria. Examination of biochemical characteristics was performed according to the principles of Cowan and Steel's Manual (Barrow and Feltham, 1993). Hygienic status of the water was evaluated by coliform count and *E.coli* existence according to the Most Probable Number Technique (SLS, 1982).

The parameters namely temperature, pH, salinity, dissolved oxygen, unionized ammonia, hardness of shrimp larvae and post larvae rearing tanks water were assessed (HACH, 1999). Isolated *Vibrio* spp. from shrimp hatcheries were tested for antibiotic resistance to antimicrobials like enrofloxacin (5µg), tetracycline (50µg), erythromycin (30µg), gentamycin (30µg), Trimethoprim sulphonamide (25µg) and chloramphenicol (5µg). Disk diffusion test was carried out according to the National Committee of Clinical Laboratory Standards (NCCLS, 2000).

Results

During the monitoring period of the larvae and post-larvae rearing tanks water for total *Vibrio* counts and the water quality parameters, *Vibrio* counts were varied

among the hatcheries. The level of *Vibrio* counts ranged from 2 x10¹ CFU ml⁻¹ to 7.47 x10⁵ CFU ml⁻¹ in larvae and post-larvae rearing tanks water samples. Temperature of the hatcheries ranged from 26-32°C, pH from 7.5-8.5, salinity started at 30-32 ppt level and was adjusted according to the stage of the larvae and post-larvae, dissolved oxygen ranged from 0.49-9.25 mg l⁻¹, unionized ammonia ranged from 0-0.29 mg l⁻¹ (Table 1).

General hygienic status of the hatcheries differed. Except for only one hatchery, the coliform counts of all were less than 10/100ml. Levels of indicator organism were varied in the individual hatchery, though the coliform counts were within the standards. *E.coli* was isolated from 9 out of 11 monitored hatcheries (Table 2).

Purification of sea water in order to control the *Vibrio* levels, conducted using different techniques such as filtration via UV or sand filtered water thereafter treated with chlorine at a concentration of 30ppm. Practice of water disinfection in hatcheries monitored at sand filtration, chlorination, charcoal, cartridge and UV filtration and mean *Vibrio* counts at each purification level were depicted at the Table 3.

Different sources of *Vibrio* contamination in hatcheries were *Artemia*, algae, sea water and brood stock, were accounted at Table 4.

Sea Water Purification Levels (n=24)	Mean <i>Vibrio</i> counts (CFU/ml)
Sand (n=2)	3.5x10 ¹
Chlorine (n=5)	1.8x10 ¹
Charcoal (n=2)	5.5x10 ¹
Cartridge (n=2)	2.5x10 ¹
UV (n=13)	3.1507x10 ²

Of 54 isolated bacteria from the larvae and post-larvae rearing tank water are comprised of 15 isolates that have characteristics associated with *V. fluvialis*, 11 isolates with characteristics of *V. alginolyticus*, 8 isolates with characteristics of *V. damsela*, 5 isolates with characteristics of *V. harveyi*, 4 isolates with characteristics of *V. anguillarum*, 4 isolates with characteristics of *V. cincinnatiensis*, 3 isolates with characteristics of *V. mimicus*, 2 isolates with characteristics of *V. vulnificus*, 1 isolate with characteristics *V. furnisii* and 1 isolate with characteristics of *V. cholerae* are shown in Fig 1.

Resistance to various antibiotics of bacterial isolates from larvae and post-larvae rearing tanks water was examined and is illustrated against 6 antibiotics (Fig 2).

Hatchery Number (n=60)	Mean Coliform Count (MPN/100ml)	<i>E.coli</i> Existence (%)
1 (n=3)	3.33	66.66
2 (n=5)	0.4	20
3 (n=8)	0	0
4 (n=4)	7	100
5 (n=5)	5	20
6 (n=7)	5.142	42.85
7 (n=5)	1	0
8 (n=6)	5.66	33.33
9 (n=5)	13.33	40
10 (n=4)	0.5	25
11 (n=8)	0.625	12.5

Sample	Isolated bacteria	Number of Isolates	Percentage (%)
Artemia water (n=7)	<i>V. fluvialis</i>	4	19.05
	<i>V. anguillarum</i>	1	4.76
	<i>V. furnisii</i>	1	4.76
	<i>V. alginolyticus</i>	1	4.76
	<i>V. harveyi</i>	3	14.29
	<i>V. damsela</i>	1	4.76
Algae (n=2)	<i>V. alginolyticus</i>	2	9.52
Sea water after pumping from the sea (reservoir tank water) (n=4)	<i>V. damsela</i>	1	4.76
	<i>V. cincinnatiensis</i>	1	4.76
	<i>V. vulnificus</i>	2	9.53
	<i>V. fluvialis</i>	3	14.29
Brood stock rearing tank water (n=1)	<i>V. anguillarum</i>	1	4.76

Table 1
Mean *Vibrio* Counts in the Larvae and Post-Larvae Rearing Tanks Water and Water Quality Parameters (Temperature, pH, Salinity, Dissolved Oxygen, Hardness) of Hatcheries

Hatchery (n=64)	Larvae and Post-larvae rearing tank water (mean CFU ml ⁻¹)	Temperature °C	pH	Salinity (ppt)	Dissolved Oxygen (mg l ⁻¹)	Hardness (mg l ⁻¹)
A (n=7)	3.37x10 ³	28-29	7.6-7.9	16-29	0.85-7.81	2950-4850
B (n=2)	2.96 x10 ³	29	8.1	28-29	7.42-8.42	3850-5040
C (n=4)	7.47 x10 ⁵	29-32	7.8-7.9	20-29	7.13-8.83	3910-5760
D (n=5)	4 x10 ²	30	8-8.3	10-32	6.68-8.43	1030-5780
E (n=3)	1.36 x10 ²	26-27.5	8.1-8.2	23-32	8.43-9.25	3770-4700
F (n=3)	2.84 x10 ³	29.5-30	7.9-8.1	30-32	5.98-7.83	4590-5120
G (n=3)	6.67 x10 ¹	29-30	8-8.5	24-30	7.58-8.7	5620-5640
H (n=2)	6.75 x10 ²	30	8-8.5	29-31	8.55-8.75	5950-6200
I (n=2)	3.85 x10 ³	30	8-7.5	20-30	6.64-6.93	3810-6530
J (n=2)	5.5 x10 ¹	30	8	20-27	7.54-7.87	5370-6250
K (n=2)	5.76 x10 ⁴	30	7-7.5	16	6.51-7.75	2810-3170
L (n=6)	1.17 x10 ³	29-30	8	19-30	6.91-8.6	4700-5600
M (n=3)	7 x10 ²	28-29	7.5	30	2.26-5.32	4400-5430
N (n=3)	2 x10 ¹	30-31	8-8.1	30	6.63-6.7	4680-6900
O (n=3)	1.58 x10 ³	30	8.1-8.2	25-32	5.21-5.86	4110-4510
P (n=2)	1.8 x10 ²	30-31	8.1-8.2	23-24	5.38-5.94	3370-3770
Q (n=6)	2.58 x10 ²	30-32	8.1-8.5	12-21	2.76-6.85	2140-5670
R (n=2)	1.5 x10 ¹	31	8.2-8.3	21-22	0.49-2.52	3490-3680
S (n=4)	8 x10 ¹	29-30	8.2	15-20	1.47-4.94	2140-3340

Among the antibiotics tested the incidence of bacterial resistance to erythromycin was the highest followed by trimethoprom sulphonomide, gentamycin, tetracycline. Incidence of resistance to enrofloxacin was the least observed and none of the isolate was resistant to chloramphenicol.

The occurrence of multiple antibiotic resistances in *Vibrio* spp. from different shrimp hatcheries was assessed. Different resistance patterns were observed among the isolates (Table 5).

Discussion

Vibrio spp. occur widely in aquatic environments and are a part of normal flora of coastal seawaters. High

virulent strains of *V. harveyi* result in up to 100% mortality from the dose strength as little as 10² CFU ml⁻¹ and it is a ubiquitous bacterium in warm marine waters and a part of the intestinal floras of marine animals (Harris *et al.*, 1996). Hence, *Vibrio* spp. exist in the water used in shrimp culture facilities and biofilm, which is formed on water contact structures of hatcheries. Vibriosis is controlled by rigorous water management and sanitation to prevent the entry of *Vibrio* bacteria in the hatchery water (Baticados *et al.*, 1990). Therefore, adaptation of different seawater disinfection was established at the hatcheries and the monitored hatcheries showed sand, chlorine, charcoal, cartridge filtration to be more effective than UV filtration.

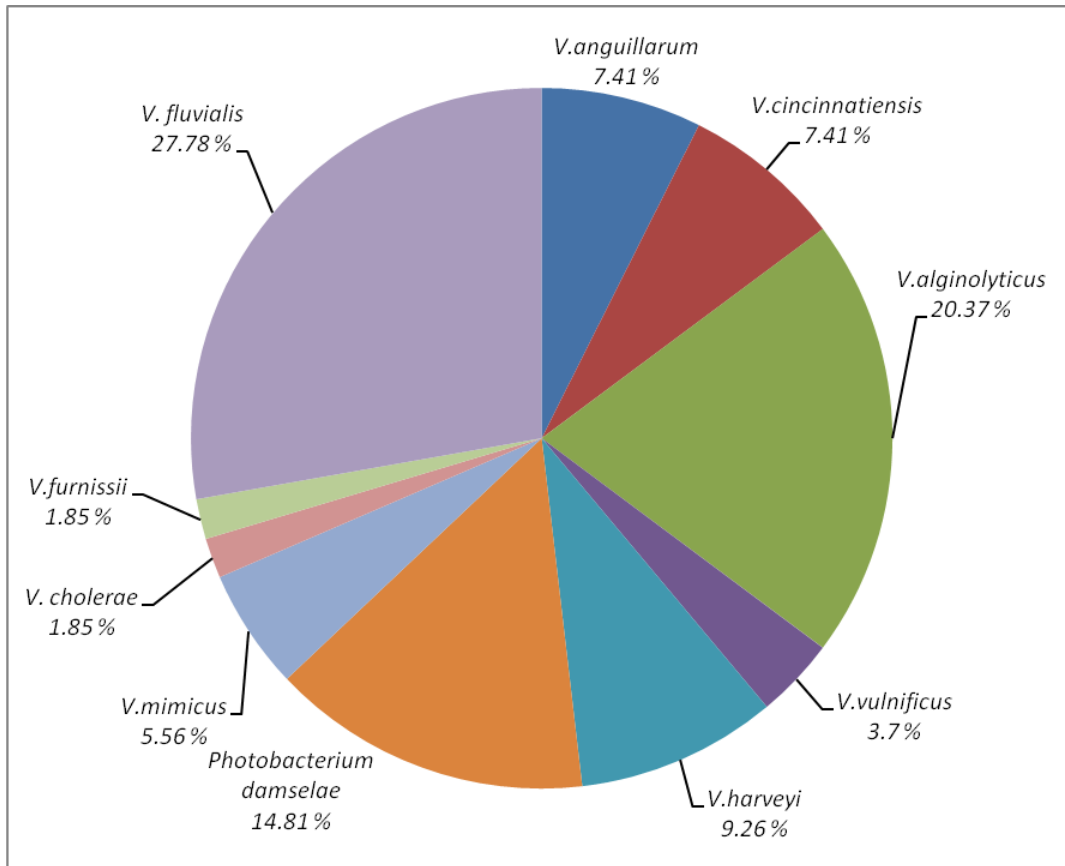


Fig 1: Percentage of different groups of *Vibrio* spp. isolated from the larvae and post-larvae rearing tanks water

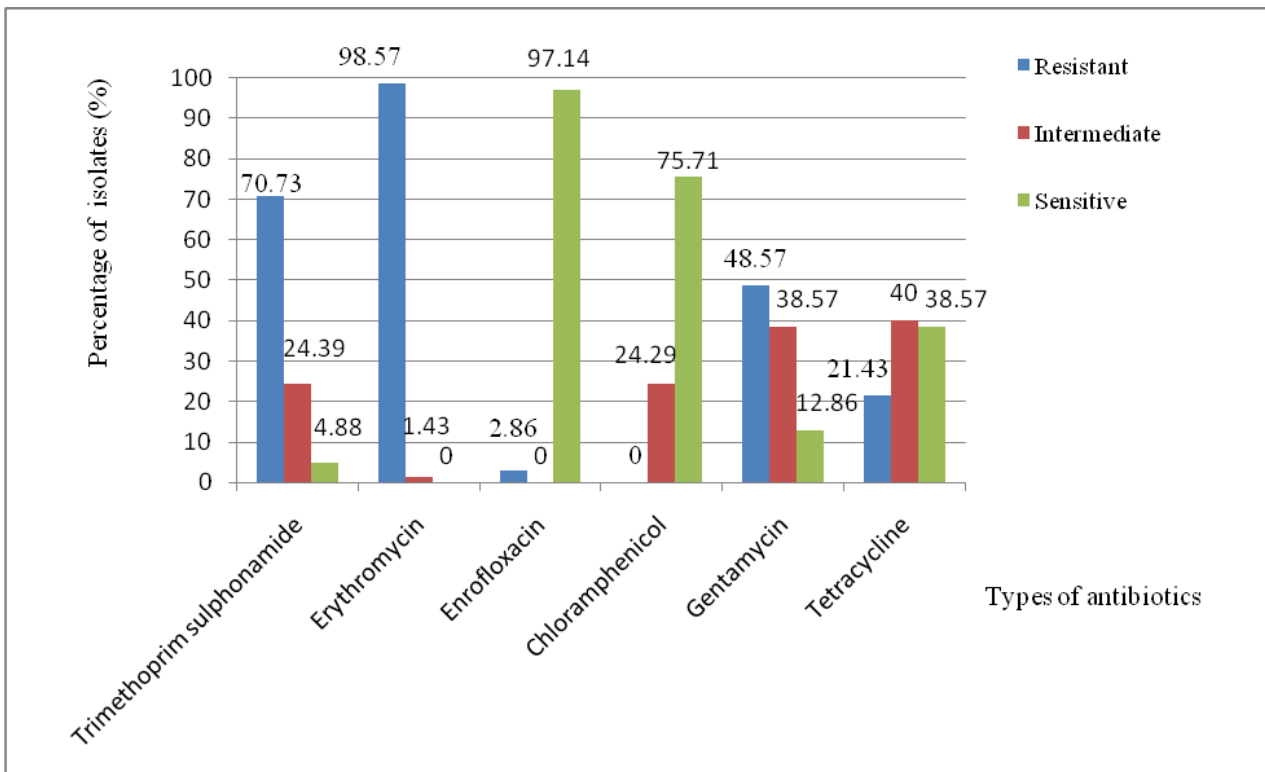


Fig 2: Percentage of *Vibrio* strains resistant, intermediate and sensitive to antibiotics

Observance of positive correlation between the *Vibrio* occurrence and temperature was reported (Elena *et al.*, 1999). However, there were no drastic changes of the ecological parameters such as temperature, pH, salinity, dissolved oxygen and unionized ammonia which lead to fry mortality and impairment of larval stage changes. Level of coliform counts and existence of *E. coli* showed possible contamination of tank water at the hatcheries or it can occur in coastal waters which are contaminated by human and animal wastes and during flash floods and deluge.

Ways of *Vibrio* entry into hatcheries included *Artemia* water, algae, sea water after pumping from the sea (reservoir tank water), brood stock rearing tank water and these results are in agreement with the reported data by Lavilla-Pitogo *et al.*, 1992. Members of the Vibrionaceae occur naturally in the digestive tract and on the skin surface of marine animals (Farmer and Janda, 2001) and faecal matter from the brood stock contaminated water possibly at the time of spawning; this would affect larval health through the *Vibrio* entry via the brood stock tank water.

Of the different vibrios, *V. fluvialis* was predominant in the larvae and post-larvae rearing tanks water and followed by *V. alginolyticus*, *V. damsela*, *V. harveyi*, *V. anguillarum*, *V. cincinnatiensis*, *V. mimicus*, *V. furnisii* and *V. cholerae*. Vibriosis is caused by a number of *Vibrio* species of bacteria, including *V. harveyi*, *V. vulnificus*, *V. parahaemolyticus*, *V. alginolyticus*, *V. penaeicida* (Brock and Lightner, 1990; Ishimaru *et al.*, 1995). It is reported that *V. anguillarum* is often pathogenic in marine environments (Larsen and Olsen, 1991). There have been occasional reports of vibriosis caused by *V. damsela*, *V. fluvialis* and other undefined *Vibrio* spp. (Lightner, 1996)

Since microflora associated with larval stages of shrimp could affect the health and development of the larvae and post-larvae, it is suggested to use bacteriophage treatment (Karunasagar *et al.*, 2007) and using green algae *Tetraselmis suecica* to control *Vibro* spp. in shrimp hatcheries (Regunathan and Wesley, 2004) as alternate technology for control of bacterial pathogens. Despite use of disinfectants and diligent management bacterial diseases commonly occurs in shrimp larval rearing tanks where large numbers of larvae and post-larvae are closely confined in a nutrient rich medium. Therefore, in order to improve the survival rates and control of pathogens antibiotics are used for brood stock

maintenance and larval and post-larval rearing (Uddin and Kader, 2006). A wide range of chemicals and drugs are being used, both for prophylactic treatment and or to control parasitic, fungal and bacterial diseases in shrimp hatcheries in Sri Lanka (Wijegoonawardena and Siriwardena, 1996). Results of this study indicated that resistance to erythromycin (98.57%) was the highest followed by trimethoprom sulphonamide (70.73%), gentamycin (48.57%), tetracycline (21.43%). Incidence of resistant to enrofloxacin (2.86%) was the least observed and none of the isolates were resistant to chloramphenicol. There are similar reports available on the susceptibility of chloramphenicol and tetracycline in India (Manjusha *et al.*, 2005). The regulations implicated by aquaculture authority might have restricted the use of these antibiotics in aquaculture. Results of incidences of multiple antibiotics resistance in vibrios showed most of the erythromycin resistant isolates exhibit multiple antibiotic resistances.

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HM Queen Elizabeth II signs historic Commonwealth Charter

HM Queen Elizabeth II Head of the Commonwealth, marked Commonwealth Day on 11 March, by signing the Commonwealth Charter - an Historic Document which brings together, for the first time in the association's 64-year history, key declarations on Commonwealth Principles.



The Queen signs the Commonwealth Charter at Marlborough House

The signing took place at a reception hosted by Commonwealth Secretary-General Kamlesh Sharma at Marlborough in London. After signing, the Queen addressed High Commissioners and other dignitaries at the reception.

Animal Welfare

WSPA Chief Veterinary Adviser recognised with Honorary Degree

Dr David Bayvel, Chief Veterinary Adviser, has received an Honorary Bachelor of Veterinary Science in recognition of his outstanding contribution to the veterinary profession in New Zealand and beyond.



Dr. David Bayvel

Dr Bayvel is one of the world's pre-eminent experts in the fields of animal welfare and veterinary science. He helps to ensure that WSPA works at the heart of the veterinary profession to support and advance animal welfare around the world. This includes working with the World Organisation for Animal Health (OIE) on the drafting of standards, with national Chief Veterinary Officers, and with national and international bodies, to ensure the implementation of standards and laws to protect the welfare of animals.

Dr Bayvel said: "It is a great honour to receive such an award and I would like to take this opportunity to acknowledge the support received, during my career, from my wife, family and colleagues at the Ministry of Agriculture and Forestry (MAF)... Recognising the benefits of public and private sector partnerships, WSPA looks forward to consolidating, and further developing, its strategically important relationship with Massey's Institute of Veterinary and Biomedical Sciences."

Over recent years, Dr Bayvel has received awards, and has been honoured, by a number of international and national organisations including the OIE, the Australian and New Zealand Council for the Care of Animals in Research and Teaching, the New Zealand Veterinary Association, and the New Zealand Companion Animal Council, to name a few. He was also awarded a Queen's Service Order (in the December 2011 Honours List) and was appointed, in 2012, as the New Zealand Government veterinary appointee to the Veterinary Council of New Zealand.

Chief Executive of WSPA, Mr. Mike Baker, also recognised Dr Bayvel's worldwide impact: "Combining Dr Bayvel's unrivalled wealth of experience with the global reach and influence of an international organisation such as WSPA, means real advancements in animal welfare are being placed at the heart of the veterinary profession worldwide, enabling us to effectively work towards a world where animal welfare matters and animal cruelty ends.

"WSPA is, therefore, delighted that Massey University has recognised Dr Bayvel's outstanding contribution to the veterinary profession; furthering endorsing the fact that the profession's contribution to animal welfare both in New Zealand and worldwide, is invaluable."

~ WSPA International News, Jul 11, 2013

Obituary

Prof Douglas Blood was appointed Professor of Veterinary Medicine at the University of Melbourne in 1962 and served as Dean of the University of Melbourne School of Veterinary Science from 1962 to 1969. He was awarded the OBE (Officer of the British Empire) in 1981 and in 1983 received the Gilruth Prize for Meritorious Service to Veterinary Science by the Australian Veterinary Association.



Professor Douglas Blood

Prof Blood touched the lives of thousands of colleagues around the world, not only as a great educator at a great University but also as co-author of the famous book "Veterinary Medicine" by Blood and Henderson (later Blood, Henderson, Radostits and Hinchcliff).

Call for Submissions to put Research into Practice as AWF invites Proposals for Sheep, Cattle and Horse Research

As the Animal Welfare Foundation (AWF) opens the research grant process for its Norman Hayward Fund AWF Chairman Tiffany Hemming asks potential applicants to think about putting research into practice when submitting proposals to the Fund.

The Norman Hayward Fund is restricted to research into the disease and welfare of sheep cattle and horses. In the last six years more than £1 million has been awarded to veterinary research projects in the UK. Recent awards ranged in value from £42 - £159k for projects lasting from one to four years.

Dr Hemming said “AWF is keen to support research that we can see will make a practical difference to animal welfare in a relatively short time period. We also pay particular attention to applicants’ communication plans. We want to be clear how the key messages from our research will be disseminated to the target audience – this is critical to achieving practical improvements in animal welfare.”

Applications are welcome from academic and practice-based researchers.

There is a two-stage application process. In the first stage applicants must submit of a Project Overview Form, which gives a brief outline of the nature and scope of their project. Trustees will review the Overview Forms before deciding which applicants to invite to submit a full grant application. The closing date for the receipt of Project Overview Forms is Friday 27th September 2013.

For further information about AWF grants and to apply visit <http://www.bva-awf.org.uk/grants/>

~ Nadin Sajakow, BVA Media

Teat Tampering: BVA Highlights Importance of Welfare Plan

In light of investigations into the suspected cases of teat tampering at the Great Yorkshire Show the British Veterinary Association (BVA) is highlighting the importance of veterinary involvement when planning ahead for events that involve the showing of animals. The BVA recommends that all shows use the Association of Show and Agricultural Organisations (ASAO) Animal Welfare Plan.

Commenting, BVA President Peter Jones, said “Tampering to enhance cows’ udders is totally unacceptable on animal welfare grounds. Thankfully the Great Yorkshire Show has an effective scanning system in place and the show vets were able to identify these suspected cases through routine examination.

“The BVA, through its Ethics and Welfare Group, has worked closely with the Association of Show and Agricultural Organisations (ASAO) to put together a welfare plan for show organisers and their vets to help ensure a consistent approach to animal welfare. The plan has now been sent to all show secretaries and we hope it will encourage show organisers to take welfare risks into consideration as part of their planning process.

“We are very proud to have facilitated and supported the welfare plan and feel that this practical approach will have a positive effect on show animal welfare. Livestock shows provide a vital focus for rural communities and a shop window to the consumer. We must all pull together to stamp out the appalling behaviour of a few exhibitors who are tempted to compromise the welfare of their animals in the show ring.”

~ Helena Cotton, BVA Media

Solomon Islands dolphin slaughter angers conservation groups

Up to 900 dolphins have been killed in Solomon Islands following a dispute between islanders and the US-based conservation group, the International Marine Mammal Project (IMMP).

A deal between the two parties that entailed cash incentives to abstain from the traditional dolphin hunt was broken after locals claimed that they had not received the promised money.

People living on Malaita, the largest island in the Solomon Islands entered into an agreement with IMMP not to kill or capture dolphins in 2010, and for two years,

halted the practice. IMMP claims that the money was paid but has not been properly distributed by the islanders to coastal communities.

The hunting of dolphins for both live capture and for meat and other resources can be very lucrative. Dolphins are a popular attraction at aquariums and zoos, so they fetch high prices on the international market.

The Minister for Tourism has expressed his concerns about the effect this will have on tourism, one of the island’s most important sources of revenue and employment.

~ Global, Second Quarter, 2013

International News

Project to Eradicate Rabies Wins Top National Award

Alliance for Rabies Control are the Healthcare and Medical Research category winner of the 2013 Charity Awards. Their award, for demonstrating, in the Philippines, that human deaths from rabies can be completely prevented by eliminating the disease at source, was presented by GP and presenter of Channel 4's Embarrassing Bodies, Dr Dawn Harper on 13th June 2013 at the Grosvenor House Hotel. The 700 strong audience consisted of representatives of the shortlisted charities, alongside a 'who's who' of charity leaders.

Celebrities presenting the awards in ten categories such as children and youth; international aid and development; disability; and environment and conservation included Baroness Tanni Grey-Thompson, Huw Edwards, Alex Brooker, Alex Jones, Ed Stoppard, Gaby Roslin and Sharon Horgan.



Dr Deborah Briggs (2nd from left) at the award ceremony

World Veterinary Day - 27th April 2013

In many countries around the world, the 13th year of World Veterinary Day (WVD) was celebrated. On this occasion the veterinary profession highlights its various contributions to the health of both animals and humans, underlining the vital role of veterinarians in also ensuring animal welfare, food safety, food security, safe world trade in animals and animal products as well as protecting public health.

WVD was initiated by the World Veterinary Association (WVA) in 2000 in order to celebrate the veterinary profession annually on the last Saturday of April. The objective is to bring the importance of the Veterinary Profession to the society as well as individuals in focus.

World Veterinary Day activities around the world vary from seminars, workshops, "open doors " activities at clinics, hospitals and veterinary schools, social and media events to inform the general public about the key role played by veterinarians in our daily life.

In 2008 the WVA and the World Organisation for Animal Health (OIE) agreed on the creation of the World Veterinary Day Award. The aim of this award is to reward the most successful celebration of the veterinary profession. The first WVA-OIE World Veterinary Day Award was given in July 2008 to the Kenya Veterinary Association.

Every year the WVA and OIE are choosing a different theme for the World Veterinary Day Award. The selected theme for World Veterinary Day Award 2013 is Vaccination. In previous years themes were Antimicrobial Resistance, Rabies, the One Health Concept and the Diversity of the veterinary profession.

The veterinary profession, through effective and efficient Veterinary Services, is crucial to the success of vaccination campaigns in animal health and consequently, in protecting human health from diseases of animal origin.

A vaccine is a biological preparation that improves immunity to a particular disease. The term vaccine derives from Edward Jenner's 1796 use of cow pox, to inoculate humans, providing them protection against smallpox.

Today, vaccines are valuable tools to stop the spread of a large number of transmissible diseases that threatens the health and welfare of animals and people. Through well organised campaigns, vaccination contributes to the eradication of diseases from certain areas and even from the world. The use of mass vaccination campaigns also limits, in many situations, recourse to depopulation in case of disease outbreaks.

~ WVA/OIE Press Release



Australian Veterinary Association (AVA) President's Award

Held after the Annual General Meeting of the Association at the National Conference, the awards were presented by AVA President Ben Gardiner.

This year's Presidents Award recognising outstanding practical veterinary science or practice in Australia was awarded to Dr Peter Thornber.

Peter has extensive animal health and welfare policy experience and is the Director of Animal Welfare Policy for the national government. He was responsible for the creation of the Australian Animal and Welfare Strategy.



AVA President Ben Gardiner (left) handing over 2013 AVA President's Award to Peter Thornber

Dr Peter Thornber is a University of Queensland veterinary graduate who also has qualifications in agriculture and teaching. After graduation he worked overseas for five years in the Solomon Islands and the United Kingdom. Peter has extensive animal health and welfare policy experience and has worked closely with international governments and organisations for many years. He is the Director of Animal Welfare Policy for the Australian Government. He is a specialist animal welfare member of the Australia and New Zealand College of Veterinary Scientists and a member of the AVA's special interest group on welfare and ethics.

Peter is the animal welfare expert representative for Asia/Oceania on the World Organisation for Animal Health (OIE) Permanent Animal Welfare Working Group that develops international welfare standards. He is also the current Chair of the Australia/New Zealand OIE Collaborating Centre on Animal Welfare Science and Bioethical Analysis. Peter was responsible for the drafting and finalisation of the Australian Animal Welfare Strategy – a strategy for the entire Australian community.

Under the Australian Animal Welfare Strategy, he is providing leadership and funding current work to develop new Australian standards and guidelines for land transport of livestock, zoo animals, cattle and sheep. His program is also supporting work on national animal welfare guidelines for dogs and cats, rodeos and aquatic animals. He is cofunding work with the World Society for the Protection of Animals, the AVA, RSPCA, Red Cross and governments, to improve plans for animals in natural disasters.

Peter's program has also funded the development of the OIE Regional Animal Welfare Strategy for Asia, the Far East and Oceania. He is supporting welfare research, education and training programs, including those for indigenous communities.

Peter is the Honorary Treasurer of the Commonwealth Veterinary Association (CVA) and a CVA Executive Officer.

International Sheep Veterinary Association recognizes Lifetimes of Service

At the recent International Sheep Veterinary Association (ISVA) conference, held in Rotorua, New Zealand, in February, lifetime service awards were presented for the first time.

There recipients from the UK were among those honoured. The first was Karl Linklater who, following two successful shepherds' meetings in the late 1970s and early 1980s, conceived the idea of an international conference. The first international conference was held at Heriot Watt University, Edinburgh, in 1985, and attracted delegates from about 25 countries.

This initial success was the precursor for further conference, which are held every four years and alternate between northern and southern hemispheres. From Professor Linklater's initiative the conferences have grown in stature and now attract delegates from around the world as well as encouraging the formation of specialist small ruminant groups in emerging sheep-keeping countries.



Chris Lewis (left) collects Karl Linklater's Lifetime Achievement Award from Gareth Bath, President ISVA

Prof. Linklater was unable to attend the recent New Zealand conference and his award was accepted on his behalf by Chris Lewis, secretary of the UK's Sheep Veterinary Society (SVS) in 1985 and retiring ISVA Secretary.

~ Veterinary Record, Apr 27, 2013

CVA-WSPA MOU

A Memorandum of Understanding (MOU) was signed between CVA and WSPA in New Delhi, India on 19th April 2013. The MOU was signed by Mr. Mike Baker, CEO, WSPA and Dr. S. Abdul Rahman, President, CVA in the presence of Ms. Margaret West, WSPA Regional Director, Asia Pacific and Ms. Emily Reeves, WSPA Director of Programmes - Asia Pacific and Dr Peter Thornber, Treasurer CVA.

The highlights of the MOU are that - Officers of WSPA and CVA will mutually attend programmes and conferences organized by each other and play an active role in implementing policy decisions on animal welfare in the CVA Member countries.

WSPA will be accorded special collaboration with the CVA in assisting efforts to improve animal welfare through our councillors and each of the member national veterinary association in the 54 countries of the Commonwealth and non-Commonwealth countries.

The CVA will include WSPA experts and speakers in sessions on animal welfare at all CVA regional conferences in the six regions of the Commonwealth as well as at the Pan Commonwealth Veterinary Conferences held every four years.

CVA will structure its conferences to provide WSPA with an exclusive Session on a particular animal welfare topic of interest in that particular region (E.g. natural disasters, rabies, veterinary education and training in



Dr Rahman and Dr Mike Baker during the MoU signing

animal welfare concepts, etc.). Recent examples of this collaboration include support for the Canada Caribbean Regional conference in Trinidad in November 2012 on Disaster Management and the forthcoming Rabies and Dog Population at the Asian Regional conference in Bangalore India in January 2013.

CVA has an active MOU with the World Organisation for Animal Health (OIE). WSPA also has an MOU with OIE and all programmes on animal welfare can jointly be taken up by CVA, OIE and WSPA throughout the member countries of OIE.

In addition, the Journal of CVA would carry an exclusive session on animal welfare in every edition. WSPA could use this to propagate their policies and programmes on animal welfare and also use it to write articles of interest on animal welfare and its operational activities and programs.

CVA Officers Meeting London

An Officer's meeting of Commonwealth Veterinary Association was held at British Veterinary Association HQ, London, on 21st June 2013 and the following officers were participated.

- Dr S. Abdul Rahman, President - Chairman
- Dr Peter Thornber, Treasurer
- Dr Bob McCracken, Programme Director
- Dr. Karen Reed, Secretary

The officers discussed various issues of CVA and did a SWOT analysis of the current situation and have prepared an Action Plan to address areas of importance to the CVA. Among the matters discussed was the forthcoming Australasia Oceania Conference and Meeting in Fiji, CPD Programmes and other projects of CVA. Planning of 6th



L-R: Drs Bob McCracken, S. Abdul Rahman, Karen Reed and Peter Thornber

Pan Commonwealth Veterinary Conference at Kuala Lumpur in 2015 was also discussed.

Book & Journal Programme



Dr. Jeff Cave

The CVA Book Programme is coordinated by Dr. Jeff Cave

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The CVA Book Programme is coordinated by Dr. Jeff Cave in Australia. Books are donated by veterinarians in Australia and New Zealand, all of whom are thanked for their generosity, without which the programme would not exist. They are available for distribution free of charge to graduate veterinarians, but not undergraduate veterinary students, in CVA member countries in good standing. Priority is given to requests from institutional libraries, such as veterinary schools and veterinary associations, and requests from individuals are met as funds permit. Postgraduate students are encouraged to submit their requests through the librarian at their institution, to ensure that the books

will be widely available. Because of budgetary constraints and steeply rising mailing costs, the number of books which can be shipped is normally restricted to up to 30 titles for institutions, and up to 5 titles for individual veterinarians in any one year. Individual veterinarians are encouraged to share their books with colleagues in their area if possible.

Requests for books should indicate the required subject areas and/or preferred titles where possible, and they should include the mailing address to which the books should be sent. The latter should be abbreviated as much as possible in order that it may be accommodated in the limited space provided on the customs declaration. It is suggested that those wishing to submit a request should first obtain a copy of the current inventories of books available by contacting, preferably by e-mail, Dr. Cave (see above for contact information). Shipments are made by surface mail, and may take several months to reach their destination. The recipients are requested to acknowledge the safe arrival of the books.

During the period July 2012 - June 2013, from Australia and New Zealand, 444 books were sent to 17 different countries as follows: Uganda 115, East Timor 69, Papua New Guinea 41, Belize 37, Nigeria 36, India 30, Trinidad and Tobago 20, Ghana 19, Mozambique 17, St Vincent 11, Zambia 9, Tanzania 9, Kenya 9, South Africa 7, Pakistan 7, Niue 5 and Zimbabwe 3.

The current inventory in Australia and New Zealand comprises over 700 titles. Multiple copies of many titles are held. Most of the books were published during the last 20 years; older texts, for which more recent editions are available, are discarded each year. Most areas of veterinary medicine are covered.

January 2013

JEFF CAVE
 Coordinator – CVA Book Programme

New CEO for GALVmed

The Global Alliance for Livestock Veterinary Medicines (GALVmed) has appointed Peter Jeffries as its new Chief Executive.

Mr. Jeffries who graduated from Liverpool in 1980, took up his new role on 2 April; he has been a member of the charity's board since it was formally created in 2006. GALVmed aims to make livestock vaccines, diagnostics and medicines accessible and affordable to keepers in developing countries who are reliant on their animals.



Mr. Peter Jeffries

Mr. Jeffries completed a MSc degree in fish disease at the University of Stirling and spent a number of years in dairy practice in England before moving to Zambia to establish and run an animal health manufacturing and distribution company. He has subsequently held management roles in regional marketing, global marketing, strategic marketing, global technical support and business development and has been based in Kenya, France and the USA.

~ Veterinary Record, Apr 13, 2013



The Fund

This fund has been established by the Commonwealth Veterinary Association (CVA) in conjunction with the Commonwealth Foundation to honour the contributions made by Mr. John Anderson and Dr. L.P.E. Choquette in establishing and promoting the activities of the Commonwealth Veterinary Association.

Financial support to match the funds contributed by the Commonwealth Veterinary Association and the several national and local veterinary associations throughout the Commonwealth may be provided by the Commonwealth Foundation.

1. Purpose

Its purpose is to provide financial assistance to:

1. Veterinarians who are members in good standing of their respective national associations to undertake short term study visits to schools, institutions or to undertake short term study courses in veterinary medicine, animal production or related areas in other Commonwealth countries.
2. Animal Health Assistants recommended by the appropriate CVA Council Member and Regional Representative, to undergo further short-term training at a school or institution in another Commonwealth country.

It is expected that such visits will promote professional and para-professional contacts and provide grantees with new knowledge and expertise in their respective fields of interest. Study proposals which will directly benefit the rural poor and disadvantaged will receive sympathetic consideration. All proposals will be expected to describe how they will benefit the home institution, veterinary organization and community. The visit is also expected to result in a broadening of cultural experience and horizons and to promote Commonwealth understanding.

2. Guidelines

1. Grants will be limited to persons with field experience and not holding senior positions.
2. The awards are not normally available for University academic or research staff.
3. Preference will be given to related regions with 'south-south' movements being encouraged. In exceptional cases, visits to institutions outside the regions qualifying under south-south arrangement will be considered as long as the cost of the visit does not exceed the allocated fund award (Aus \$ 3000). In exceptional circumstances and where approved by the President grantees may receive training in a non-Commonwealth country within that Region.
4. The study period should be preferably between 2-3 weeks.
5. Awards will normally be distributed equally amongst Regions, however, on occasion, the President may authorize additional awards to a particular Region in any one year.
6. The study visits will be financed at a maximum of Aus \$ 3000 including a prepaid air ticket for the least expensive and most direct route.

7. Grants are provided only for periods of concentrated study or training on a particular topic or activity and cannot be made for attendance at conferences, meetings etc., nor to underwrite a tour of visits to a number of institutions.
8. A report must be submitted to the Secretary CVA within three months of the completion of the study visit. At the completion of the study visit, the participant must receive a letter of release, which should clearly indicate duration of stay, and satisfactory completion of course. The letter should also confirm that at the time of departure, the participants have not left any debts unsettled. This requirement must be conveyed by the Regional Representative or Programme Director to the host institution before arrival of participant.
9. It will be necessary for the host institution to agree to assist in arranging suitable accommodation etc. affordable by the applicant.
10. Grantees will be expected to give one or two lectures at the host institution or veterinary association on aspects of animal health and production activities in their home country. These lectures should emphasize how their studies in the host country will benefit the rural poor and disadvantaged as well as their impact upon the environment.
11. These lectures and the discussions of topics, both professional and social, with the staff of the host institution or veterinary association will serve to further the aims and objectives of the Commonwealth Veterinary Association.

3. Applications

- i) There is a set Study Application Form/Application. Forms are available from the CVA Secretary, or through the CVA Website.
- ii) Applications should be submitted to the appropriate Regional Representative for processing, at least 6 months prior to the proposal visit.
- iii) The applicants should provide the following:
 - a) A complete curriculum vitae to the Regional Representative
 - b) Two passport size photographs
 - c) A letter of acceptance from the person who will supervise the study program in the host country
 - d) Evidence that the study has the support of his/her home institution or national association

4. Administration

- i) The Study Application Form with supporting documents must be sent to the appropriate Regional Representative
- ii) The Regional Representative will review the application and make a recommendation to the Secretary, CVA.
- iii) The Secretary, CVA will make a recommendation to the CVA President, who will make the final decision.
- iv) The Secretary, CVA will then inform the Regional Representative who will inform the candidate.

Last date of submission of request to Council Members/Reg. Rep. is 30th Oct. 2013. RRs to submit their recommendations before 30th Nov. 2013 to the Secretary, CVA.

 **Asia**

Honorary Life Membership of CVA

At the meeting of the Officers of the Commonwealth Veterinary Association held in London in August 2012 it was decided to confer the honorary Life Membership of CVA to Dr. Amrita Patel, the Chairman of the National Dairy Development Board (NDDB), India and Founder and Chairman of the Foundation for Ecological Security (FES), for her outstanding contribution to the welfare of the livestock farmers in the dairy sector and her contribution to the Indian Milk production which is the largest in the world. Dr. Patel has been a very ardent supporter of all activities of CVA where in Indian dairy farmers from different villages in India were trained at the National Dairy Development Board, Anand as part of the CVA projects supported by the Commonwealth Foundation. Her inaugural address at the 2nd Pan Commonwealth Veterinary Conference in Bangalore, India in February 1998 is always remembered as the most stimulating one for the Veterinary profession.



Dr Amrita Patel

Dr. Amrita Patel serves on the boards of several organizations in the fields of nature conservation, poverty alleviation, improvement of living conditions and shaping of autonomous peoples' institutions.

As the Managing Director and later as Chairman of National Dairy Development Board, Dr. Patel was responsible for the implementation of Operation Flood, a national dairy development program of an unparalleled scale. The program has helped to promote, finance and deliver a variety of supporting services to a national cooperative dairy structure that presently includes more than 13 million members, mostly small farmers, from nearly 100,000 village dairy cooperative societies, contributing to an increase in per capita availability of milk in India from some 106 grams per day in 1967 to more than 258 grams per day in 2009.

It was Dr. Patel's vision that led to the setting up of the Foundation for Ecological Security - an organisation

that would reinforce the critical task of restoration of ecological processes that improve and sustain the biological productivity of land and help ameliorate the living conditions of the poor. Under her Chairmanship, the Foundation for Ecological Security has in the past few years grown to secure the cooperation of 1830 villages across six states of India, reaching out to about a million people and bringing about 107,000 hectares of 'public lands' and forestlands under community governance.



Felicitation of Dr Amrita Patel

Besides her presence on the Boards and Committees of several national and international bodies, Dr. Patel works closely with both policy makers and civil society organizations on issues relating to conservation of forests, strengthening community institutions, improving rural livelihoods and accessing property rights to community land, to improve the living conditions of the rural poor.

Dr. Patel received several awards at national and international levels. In 2001, Dr Patel was conferred "Padmabhushan" by the Government of India for her contribution to animal husbandry. She received the 'Dr. Norman Borlaug Award' for contributions in the field of dairy development and animal husbandry and for the leadership and dynamism shown in creating sustainable peoples' institutions to meet their needs for fuel and fodder. She was awarded the 'International Person of the Year' for the year 1997 by the World Dairy Expo, Inc., Madison, Wisconsin, USA for commitment to improve India's rural health and environment and for efforts to foster better animal husbandry and increase producer productivity and incomes.

The Certificate of Honorary Life Membership of CVA was handed over to Dr Amrita Patel at Anand on 19th April 2013 by Dr. S. Abdul Rahman in the presence of Mr. Mike Baker, CEO-WSPA, Ms. Emily Reeves, WSPA Director of Programmes - Asia Pacific and Gajender Sharma, WSPA's India Country Director.

India Leads Asia with Strategy to Protect Animals during Disasters

India is taking pioneering action to protect hundreds of thousands of animals and millions of people who are affected each year by disasters, with a strategy that will help to include animals in existing disaster management plans.

This roadmap was confirmed at Asia's first National Animal Disaster Management Conference, held at New Delhi on 17 and 18 April 2013 which was co-hosted by the World Society for the Protection of Animals (WSPA) and the National Disaster Management Authority (NDMA).

Key officials from India and around the world came together, acknowledging that when disasters strike the survival of people and the recovery of whole communities are inextricably linked to healthy animals.

The roadmap will prevent the suffering and unnecessary deaths of vast numbers of animals in disasters - like the current drought in Maharashtra State - and can ultimately help to reduce the annual US \$1 billion impact disasters have on the nation.

At the inauguration of the conference, the Union Minister of Agriculture Hon'ble Sharad Pawar acknowledged the special place that animals hold for the people of India, as an integral part of their day to day life for more than 70% of the population. He called for meaningful and practical solutions and complimented the joint role of WSPA and NDMA in taking this animal disaster management roadmap forward in India.

Eminent speakers from all over the world and India including Dr. Peter Thornber, DAF Australia and Treasurer of CVA and Dr. S. Abdul Rahman, President CVA presented papers at the conference. The conference was also attended by Dr. Amarjeet Nanda, Animal Husbandry Commissioner Govt. of India and Dr. S. Ayyappan, Director General of Indian Council of Agricultural Reserach (ICAR). OIE was represented by Dr. Tomoko Ishibashi, OIE Asian Regional Office, Japan.

WSPA and NDMA will jointly deliver the next key steps of the roadmap:

- Specialist training for India's National Disaster Response Force (NDRF) to help it deliver disaster awareness and preparedness training to communities dependent on animals across the country
- Customised training at the state level for the National Institute of Disaster Management (NIDM) to help them increase awareness of the importance of animal protection in disasters amongst key stakeholders
- The roll-out of WSPA's Veterinary Emergency Response Unit (VERU) model with NDMA, based on the successful joint approach being used in Bihar, to help increase the capacity of the other regions to respond to the animal needs in disasters.

This approach will help prepare communities - over 800 million Indians are dependent on agriculture and animal husbandry for survival - so they can take action to protect their animals during crises in India such as droughts and floods.

Speaking from New Delhi, WSPA's Chief Executive Mike Baker said: "Our collaboration with governments and global humanitarian organisations embodies an ever-more widely recognised principle: that when a crisis hits, the survival of people and animals, and their eventual recovery, cannot be effectively answered in isolation.

Gajender Sharma, WSPA's India Country Director added: "India's people need their animals to be safe and healthy, so they can survive, move on and rebuild their lives post disasters. Our animals equally need people to be prepared so they can protect them from injury and suffering when disasters strike.



Hon'ble Union Minister Shri Sharad Pawar addressing the Conference



Dr Peter Thornber, Treasure CVA addressing the Conference



L-R: Shri. Anil Sinha, Shri. Amarjeet Nanda, Ms. Tomoko Ishibashi and Dr. Peter Thornber

"To quote one of our most inspiring citizens and the father of our nation, Mahatma Gandhi: 'the greatness of a nation and its moral progress can be judged by the way its animals are treated'. That is why this pioneering roadmap is so essential for our country, our people and our animals."

CVA -Tamil Nadu Veterinary University MOU

The CVA has entered into a collaborative agreement with the Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) wherein the University will help CVA implement projects pertaining to women livestock farmers, especially dairy farmers, in the most economically poor areas of South India. Technical expertise from the University will be provided to train farmers at the University's livestock training centres located in the state of Tamil Nadu. In addition TANUVAS will also participate in collaborative research with the CVA in Rabies Monoclonal Antibody Project which is being undertaken at the CVA-Crucell-KVAFSU Rabies Laboratory in Bangalore, India.



Dignitaries during the MoU

The MOU was signed at the Veterinary College, Chennai on 28th Feb 2013 by Director of Research Dr. K. Kumanan and Dr. S. Abdul Rahman, President CVA in the presence of Dr. R. Prabakaran, Vice Chancellor TANUVAS, Dr. S.A. Asokan, Dean, Dr. C. Balachandran, Registrar and Dr. K.S. Palaniswami, former Director of Research TANUVAS.

10th Annual Conference - Infectious Diseases Society of Pakistan

The 10th Annual Conference - Infectious Diseases Society of Pakistan was held at Shaukat Khanum Memorial Cancer Hospital & Research Centre Lahore Pakistan from 22-23 Feb, 2013. Dr. S. Abdul Rahman President CVA was invited to give a key note address on Rabies at the conference.



Women social workers being briefed on Rabies Awareness

Dr. Rahman also visited the Lahore Veterinary College and had a meeting with Dr. Talat Naseer Pasha, Vice Chancellor University of Animal and Veterinary Sciences, Lahore, Dr. Sarwar Khan Dean Faculty of Veterinary Sciences and Prof. Nasim Ahmad, Head Dept. of Theriogenology of the Veterinary College regarding CVA collaborative projects on Rabies and stray dog population management. He also visited the University Ravi Campus at Pattoki and participated in a programme organised by the Extension Directorate to brief women social workers on Rabies awareness.



Dr. Talat Pasha VC presenting a memento to Dr. Rahman

L-R: Prof. Nasim Ahmad, Dr. Sarwar Khan, Prof. Talat Pasha and Dr. Abdul Rahman

He also addressed staff and students on Challenges to the Veterinary Profession. Dr. Aneela Durani, CVA Councillor and Dr. A.A. Ramzee, former CVA Councillor Pakistan and Regional Representative of the Asian Region were also present.

15th Australasia/Oceania Commonwealth Veterinary Association Regional Conference

The vast Pacific Ocean is the largest single geographic feature on our planet and hosts over 20 Pacific island states and territories. [PICTs] While several of the PICTs in the Melanesia region of the Pacific are relatively large, with PNG being almost the size of France, the majority are very small in size and often in turn composed of many scattered islands, spread over wide areas of ocean - the Republic of Kiribati is a prime example of this 'internal spread' of islands. In this case, the 30 islands comprise a collective land area of only 800 km² within an area of sea exceeding 3.5 million km². The tyranny of distance, relative isolation and diseconomies of small size all make development especially challenging. Added to these are the impacts of climate change which are being increasingly felt, in particular by the lower-lying islands, some of which are barely 2 meters above sea level. These consequences serve to compound and further complicate the existing challenges.

Livestock are an important part of most Pacific island social and cultural systems and also contribute significantly to food security and economic activities. Increasing consumption of livestock products is providing both opportunities and dilemmas for PICTs. In fact the densities of both pigs and poultry on some of the very small PICTs is surprisingly high by world standards and will be difficult to increase. Animal health and production services are weak generally across the region with the exception of the Territories of France and the regional Secretariat of the Pacific Community [SPC] [www.spc.int] addresses a very real requirement in this regard, by meeting a range of needs from diagnostic input and disease investigation to capacity-building, through its specialist thematic team.

Animal health and production workers are often isolated and do not have many opportunities to meet in person and engage as well update on new technology and relevant advances. This 4-day Conference, which follows on very successful predecessors in Lae, PNG [2004] and Apia, Samoa [2008] will enable this interaction and networking to take place around a well-structured Scientific Program

with presentations by carefully selected speakers and institutions, from both within and beyond the region. Special effort has been made to include a number of farmers as presenters. The SPC is both a key partner in and supporter of the Conference and other participating institutions include OIE, FAO and WSPA. There will be opportunities provided for informal discussions through working groups as well as social events and a visit to the Annual Fiji Agricultural Show, which has been deliberately timed for the same week, will provide a chance for participants to gain a deeper insight into Fiji's diverse and expanding primary resources sector. In addition, a Field Visit on the final day of the Conference to an important and visually-impressive primary production region will serve to add a further overlay to the Fiji experience of participants, in particular of the overseas visitors.

As well as including presentations from several international institutions, the Conference will also focus on a number of priority topics under the different Sessions. These will include Fiji's ongoing development of a meat sheep for the tropics based on the Barbados Black belly, veterinary education for the region, the role of veterinarians in the expanding aquaculture field and the fast-evolving animal welfare sector. A special presentation will cover the expanding potential for farm-based ecotourism! It is also intended to have the veterinary/para veterinary professions in the future explored by an Eminent Persons Panel. An Exposition by key livestock entities in Fiji will also be staged at the Conference to provide an update on the services, activities and products which these institutions are providing - at least one of these organizations is NZ-based and has been involved in the region's poultry sector for many years.

While Food Animals are the main business of the Conference, a smaller parallel Companion Animal 'stream' will also be held. This has 2 main components - a Session from a mainly Pacific island practitioner perspective as well as a special Continuing Professional

Development [CPD] program over 1.5 days, on medicine and surgery of the gastro-intestinal tract. A special smaller Session will also be held with stakeholders on the subject of Dog Management in the PICTs.

The final joint Session [with both ‘streams’ together] on day 4 will deliberate and reach consensus on a concise Conference Conclusions Document, comprising key

points and Recommendations from the Sessions, as guidance for possible future policy and action by PICT Governments and relevant organizations. The Conference Organizing Committee has been working hard for some months and believes this event will be the largest ever held on livestock in the Pacific island region.

~ Robin Yarrow, former President CVA and Chairman, Organising Committee

Veterinarians Awarded in Queen's Birthday Honours

Dr Kevin Doyle, National Veterinary Director of the Australian Veterinary Association was awarded a Member (AM) in the General Division of the Order of Australia. Kevin who has worked tirelessly for the profession, was given the award ‘for significant service to veterinary science, and to animal health programs.’



Dr Kevin Doyle

Prior to appointment to the Senior Executive Service he had nearly four years as Veterinary Attache at the Australian Embassy, Washington and the Australian High Commission, Ottawa.

Dr Doyle had several terms as a member of the International Animal Health Code Commission of the World Organisation for Animal Health (Office

International des Epizooties), Paris. He has also been Australia’s representative to the OIE General Session.

Dr Doyle is currently responsible for AVA veterinary technical and policy services and for promotion of AVA’s role in animal health and welfare to the community, governments and the profession.

He is a member of the Australian Animal Welfare Advisory Committee.

He is President of the ACT Veterinary Surgeons Board and teaches Masters degree students in Veterinary Public Health at the University of Sydney.



The Gambia Horse and Donkey Trust

Once in a Lifetime Volunteer Opportunity with Overseas Equine Charity

Have you always wanted to help working equines abroad? Would you enjoy the challenge and adventure of living and working in a foreign country in a hot climate?

A rare and exciting opportunity has arisen to volunteer for a small equine charity, the Gambia Horse and Donkey Trust in The Gambia, West Africa. The Gambia Horse and Donkey Trust (GHDT) are seeking a long term volunteer administrator to help with the charities operations in The Gambia for a period of one year – truly a once in a lifetime opportunity for the right person.

If this sounds like the type of challenge you have always hoped to be involved with, please contact anna_ghdt@hotmail.co.uk for a full description of the voluntary role with this fantastic small charity that is making a big difference to the lives of people and animals in The Gambia. People with a passion for both animals and people are sought for this role and particular experience of managing groups of people would be of great benefit.

For further information about the work of the charity, please visit our Facebook page at www.facebook.com/gambiahorseanddonkey or our website at www.gambiahorseanddonkey.org.uk

~ BVA Overseas Group

Sustainable Animal Health and Production in Australasia / Oceania - The Role of Veterinary Education, Disease Control, Food Safety and Security and Animal Welfare

2 - 6 September 2013. Fiji

Scientific Programme - DAY 1 (Mon, 2 Sep 2013) - Combined Stream 1 & 2

THEME	SPEAKER	TIME
Registration	Secretariat of the Pacific Community (SPC), Fiji Veterinary Association members (FVA)	7:30am
Fijian ceremony of welcome-Ministry of Defence		9:00am
Opening Address	Prime Minister	9:30am
Morning tea (preceded by group photo)	All	10:00-10:30am
Keynote Addresses		
Challenges to the veterinary profession-What is the special role of the CVA into the future.	Dr Abdul Rahman-President Commonwealth Veterinary Association (CVA)	
Global Challenges in Animal Welfare	Mr Mike Baker, Chief Executive Officer, World Society for the Protection of Animals (WSPA).	
Lunch	All	12:00-1:00pm
Sustainable Animal Health and Production		
Pacific island region context	Mr Inoke Ratukalou, Director Land Resources Division (LRD) –Secretariat of the Pacific Community (SPC)	
Livestock Health and Production	Dr Ken Cokanasiga, Advisor Animal Health and Production Thematic Team-SPC	
The Fiji perspective	Mr. Peter Drysdale, Chairman, Yaqara Pastoral Company.	
Country report on Sustainable Animal Health and Production (Monogastrics/Cattle/Small ruminants/Aquaculture/Apiculture – sectoral updates, scenarios and projections)	Country reports PNG Vanuatu Fiji Samoa (small ruminants), Timor Leste (TBC)	
Afternoon Tea	All	3:00-3:30pm
Producer Perspective-“Sex, Size and Efficiency in Livestock Value Chains-The need for ‘Counselling’ “	Mr. Simon Cole, President, Fiji Crop and Livestock Council	
Organic Animal Production in the region	Ms. Karen Mapusua, POETcom Coordination Officer (International Agricultural Commodity & Trade), LRD, SPC	
Animal Production and Nutrition and Genetics		
Regional genetic resources in the Pacific. -Regional ANGR.	Mr. Nichol Nonga, Animal Production Officer, LRD, SPC	
The current status of livestock production in PNG	Dr Workneh Ayalew – Senior Research Officer, National Agricultural Research Institute (NARI), Lae, Papua New Guinea (PNG)	
Tropical sheep development in Fiji and the region - the issues and needs	Mr. Peter Manuelli – Animal Health and Production Specialist -Australia	
Producer perspective(sheep, cattle, horses and apiculture)	Ms Elisapeci Talica- General Manager Yaqara Pastoral Company, Fiji	
Breeds and breeding schemes for Small Ruminants in the Tropics	Dr. Leyden Baker, Private Consultant, Animal Breeding and Genetics, New Zealand.	

THEME	SPEAKER	TIME
Livestock and Climate change in the Pacific Island Region		
Updates on climate change mainstreaming of livestock activities in the Pacific Island region.	Mr. Nichol Nonga, Animal Production Officer, LRD, SPC	
A case Study in Vanuatu	Dr. Christopher Bartlett, Climate Change Consultant, German Society for International Cooperation (GIZ)	
Cocktail/Dinner (Tanoa Hotel)	All	7:00-9:00pm
END OF DAY-1		

Scientific Programme - DAY 2 (Tue 3 Sep 2013) - Stream 1

THEME	SPEAKER	TIME
Biosecurity and Trade in livestock and Livestock Products		8:00am
Regional overview in Biosecurity and Trade	Dr. Mark Schipp, Chief Veterinary Officer (CVO), Department of Agriculture Fisheries & Forests (DAFF), Australia	
Biosecurity New Zealand	Dr Mathew Stone, Director, Animal and Animal Products, Ministry of Primary Industries, Wellington, New Zealand	
The Fiji Biosecurity Authority of Fiji	Mr. Waisiki Gonemaituba, former Chief Executive Officer (CEO), Biosecurity Authority of the Fiji Islands (BAFI)	
The Invasive Green Iguana-Fiji case study	Ms. Nunia Thomas, Director, Nature Fiji-MareqetiViti, Suva, Fiji	
Live dolphin trade	Dr Baddley Anita, Honiara Veterinary Clinic, Solomon Islands	
New Caledonia cattle tick experience	Dr Stephanie Sourget, Veterinarian, Department of Animal Health, New Caledonia.	
Morning Tea	All	9:30-10:00am
Zoonosis & Disease Control		
OIE Overview	Dr Tomoko Ishibashi – Deputy Regional Representative for Asia and the Pacific, Office International Epizootic (OIE), Tokyo, Japan (World Organisation for Animal Health)	
Regional overview and the need for collaboration	Dr Ilagi Puana, Sub regional Animal Health Specialist, LRD, SPC	
Challenges and the way ahead at national level-The Fiji experience	Dr Steve Angus, Principal Veterinary Officer, Ministry of Primary Industries (MPI), Fiji.	
“New and re-emerging diseases; what are the challenges?”	Prof. Bruce Gummow, Professor, Faculty of Medicine, Health and Molecular Sciences, School of Veterinary and Biomedical Sciences, James Cook University, Australia	
Prioritisation of animal disease in the Pacific Island Region	Dr Aurelie Brioudes, PhD researcher, LRD, SPC/James Cook University (JCU), Australia	
Brucellosis in the Pacific Island region	Mr. Andrew Tukana, PhD researcher, LRD, SPC/James Cook University (JCU), Australia	
Leptospirosis in the Pacific region - at the human-animal interface	Dr. Simon Reid, Associate Professor of Global Disease Control, The Australian Centre for International and Tropical health, University of Queensland, Brisbane, Australia.	
Laboratory services in the Pacific Island region	Dr Elva Borja, Animal Health and Production Consultant, LRD, SPC	
Lunch	All	12:00-1:00pm

THEME	SPEAKER	TIME
Veterinary laboratory services and disease research	Dr Narayan Raju, Director, Pathology Research Laboratory, Inc., San Francisco, California, USA	
The role of syndromic surveillance in sustainable animal production systems in Papua New Guinea.	Prof. Robert Hedlefs, Associate Professor, State Veterinary Medicine, School of Veterinary and Biomedical Sciences, James Cook University, Australia	
Australian Animal Health Laboratory (Geelong)–Its role and its links to the PICTs	Dr Sam McCullough, Manager Diagnostic Services, CSIRO Livestock Industries, AAHL, Geelong, Australia	
An Inter-sectoral Approach to Rabies Control	Dr Abdul Rahman-President, CVA, India	
“Update on the H7N9 Influenza Outbreak”	Dr Tomoko Ishibashi – Deputy Regional Representative for Asia and the Pacific, Office International Epizootic (OIE), Tokyo, Japan (World Organisation for Animal Health)	
EMPRES, GFTaDs-FAO	Dr Carolyn Benigno, Animal Health Officer, FAO, Bangkok.	
Regulation of Veterinary Medicines, Why it matters and how do we do it-An Australian Perspective.	Dr Robyn Schipp, Evaluator, Chemical Review, Australian Pesticides and Veterinary Medicines Authority, Canberra, Australia	
Afternoon Tea	All	3:00-3:30pm
Food Security and Food Safety		
Regional Overview	Dr Siosua Halavatau, Crop Production & Extension Coordinator, LRD, SPC	
Selected Pacific island examples (Beef export)	Dr Sina Moala, Principal Veterinary Officer (PVO), Biosecurity Department, Vanuatu	
Fiji producer perspective	Mr Chris Zaayman, General Manager, Goodman Fielder, Suva, Fiji	
A traditional method of cooking in PNG may lead to infection with <i>Trichinella papuae</i>	Dr Ifor Owen, Retired Senior Parasitologist, National Veterinary Laboratory, PNG	
Cocktail (Tanoa Hotel)	All	7:00-9:00pm
END OF DAY-2		

Scientific Programme - DAY 3 (Wed 4 Sep 2013) - Stream 1

THEME	SPEAKER	TIME
Animal Welfare		8:00am
Moving the world to protect animals in Asia Pacific	Dr. Hugh Wirth, Renowned Australian Veterinarian and WSPA International Board Member.	
Animal welfare and the veterinary profession-Past, Present and Future	Dr David Bayvel, WSPA Chief Veterinary Advisor, New Zealand	
Australian Animal Welfare Strategy	Dr Peter Thornber, Director, Australian Animal Welfare Strategy, Department of Agriculture, Fisheries and Forestry, Canberra, Australia	
From the classroom to the laboratory-Veterinary animal welfare leadership in education and research	Dr Virginia Williams, Animal Welfare Consultant, Wellington, New Zealand	
Natural disasters and livestock	Dr Ian Dacre, Disaster Management Operations Director, Asia Pacific, WSPA, Bangkok, Thailand	
LEGS Training	Dr. Elva Borja, Animal Health and Production Consultant, LRD, SPC	

THEME	SPEAKER	TIME
Cultural and Religious Sensitivities	Dr Abdul Rahman, CVA President, India Dr Nime Kapo, Chief Veterinary Officer (CVO), National Agriculture Quarantine Inspection Authority (NAQIA), PNG	
Morning Tea	All	10:00-10:30am
Aquaculture		
Asia Pacific overview	Dr Masanami Izumi, Fisheries Officer, Food Agricultural Office (FAO), Apia, Samoa	
Present regional situation and future opportunities	Dr Ruth Garcia, Aquaculture Officer, Marine Resources Division, SPC, Noumea, New Caledonia	
New Caledonia aquaculture experience	Dr Stephanie Sourget, Veterinarian, Department of Animal Health, New Caledonia.	
Fiji experience- Crab Company of Fiji	Mr Colin Shelly , Consultant-Principal, Crab Company of Fiji	
Lunch	All	12:00-1:00pm
Livestock in the future – panel of Eminent Persons	Dr Hugh Wirth-WSPA Dr Abdul Rahman-CVA Dr Peter Thornber-CVA (2 more to be confirmed)	
Afternoon tea	All	3:00-3:30pm
Field Trip-Crest Fiji Agricultural Show at Churchill Park in Lautoka	All	4:45-6:00pm
Reception hosted by Goodman Fielder Ltd at Waterfront Hotel, Lautoka		6:30pm
END OF DAY-3		

Scientific Programme - DAY 4 (Thur 5 Sep 2013) - Stream 1

THEME	SPEAKER	TIME
Environmental Issues		8:00am
Waste Disposal/composting/biogas in Fiji	Mr. Andrew Tukana, PhD researcher, LRD, SPC/James Cook University (JCU), Australia	
Poultry aspects		
The role diagnostic aids play in disease management	Dr Eduardo Bernardi, Technical Services Manager, Pacificvet Ltd, Christchurch, New Zealand.	
Inclusion body hepatitis in broilers in Fiji	Dr Robin Achari, PhD Candidate, School of Environment and Rural Sciences, University of New England, Australia	
Potential for routine surveillance of poultry pathogens in shed dust samples	Dr Stephen Walkden-Brown, Professor in Animal Health and Production, School of Environment and Rural Sciences, University of New England, Australia	
Mycotoxins in animal feed	Dr Tugrul Durali, Technical Manager-Asia Pacific Mycotoxin Management, ALLTECH, Australia	
ICT in the Livestock Sector		
Animal Health Information Systems in the region	Ms Anju Mangal, Information Knowledge and Management Coordinator, LRD SPC	
Livestock and ICT – mobile phones/GPS, SMS animal disease surveillance	Dr Nime Kapo, Chief Veterinary Officer NAQIA, PNG	

THEME	SPEAKER	TIME
Ecotourism and the Livestock Sector		
Ecotourism and livestock – a case study from Taveuni island, Fiji	Mr. Naresh Shankaran, Bobby's Farm -Vuna, Taveuni Island	
Yaqara Pastoral Company-Opportunities	Ms Elisepeci Talica, General Manager, Yaqara Pastoral Company, Fiji	
Morning Tea	All	10:00-10:30am
Veterinary Education in the region		
Paravets in the developing world	Dr Ken Cokanasiga, Advisor Animal Health and Production Thematic Team, LRD, SPC	
Pacific regional experience with Paravets (training and history)	Mr Peter Manueli, Animal Health and Production Specialist- Australia Dr Ilagi Puana, LRD, SPC	
Fiji Animal Health Diploma Experience and a possible future veterinary degree	Dr Bukola Babatunde, Head of Department (HOD), Animal Science, Fiji National University Dr. Elva Borja, Animal Health and Production Consultant, LRD SPC	
Veterinary Education in Malaysia	Associate Professor, Dr Siti Arshad, Deputy Dean, Faculty of Veterinary Science, University Putra, Malaysia.	
“What is Undergraduate Epidemiology?”	Prof. Bruce Gummow, Professor, Faculty of Medicine, Health and Molecular Sciences, School of Veterinary and Biomedical Sciences, James Cook University, Australia	
Continue Professional Development – the CVA Plan	Dr Chris Daborn, OIE Accredited PVS and Gap Analysis Expert, Tropical Veterinary Sciences, Tanzania	
Lunch	All	12:00-1:00pm
Australian New Zealand College of Veterinary Scientists /University of Queensland	Dr Phil Moses, President – Australia New Zealand College of Veterinary Scientists , Australia	
Veterinary Registration – the NZ experience	Ms. Sue Ineson, New Zealand Veterinary Council member, New Zealand	
Open discussion veterinary education	Working groups	
Afternoon tea	All	3:00-3:30pm
Concluding session		
Working group discussion on conclusions and the way forward	Working groups	
Recommendations for the future follow-up under specific sub-headings		
Discussions on and adoption of recommendations and conference communiqué	Working groups Plenary to adopt	
Closing dinner (Tanoa International Hotel)	All	7:00-9:00pm
	End of day 4	

Canada Caribbean

Recipient of the Queen's Diamond Jubilee Medal

Dr Tim Ogilvie of the Atlantic Veterinary College was recently presented with a Queen Elizabeth II Diamond Jubilee Medal by Senator Mike Duffy. The citation read at the ceremony is as follows: "Dr Tim Ogilvie is an outstanding Prince Edward Islander. The past dean at the Atlantic Veterinary College, he exemplifies the highest standards of academic excellence. In recognition of his leadership, the college's summer veterinary camp was named in his honor".



Dr. Tim Ogilvie extreme right

Dr Ogilvie is immediate past Dean and a founding faculty member at the Atlantic Veterinary College, and a past-president of the CVMA. Joining Senator Duffy and Dr Ogilvie at the medal presentation were family members Sarah Ogilvie, Thomas Ogilvie, Lola Meek Ogilvie, and Townsend Ogilvie.

The medal was created to mark the 2012 celebrations of the 60th anniversary of the accession of Her Majesty Queen Elizabeth II's accession to the Throne as Queen of Canada. During the year of celebrations, 60,000 deserving Canadians were recognised.

Schmallenberg virus continues to spread across Europe

The spread of Schmallenberg virus (SBV) across Europe is documented in the latest analysis of the epidemiological data by the European Food Safety Authority (EFSA).

The EFSA has been publishing periodic analysis of the SBV situation since early in 2012, following a request from the European Commission to collect and analyse epidemiological data on the emerging virus.

In its latest assessment, which covers the period August 1, 2011 to April 30, 2013 and which was published on May 16, the EFSA reports that, over the winter of 2012 and the spring of 2013, the virus has spread to new areas, including Scotland and regions of Norway, Finland and Sweden. It has also spread to new regions in the east of Europe, including Latvia, Hungary, Slovenia and Croatia. In total, 19 EU member states, plus Switzerland, Norway and Croatia, have reported cases of SBV. More than 8000 holdings in Europe have had laboratory confirmed cases of SBV since September 2011, the EFSA reports. It adds that RT-PCR has detected evidence of SBV in bison, deer, moose, alpacas and buffalo, as well as cattle, sheep and goats, and that fallow, roe and red deer have all been found to be seropositive.

Acute cases of infection in adult animals have been reported in Germany in every month from November 2012 to April 2013, the EFSA says, suggesting that the virus

continued to circulate during the winter period. New cases of arthrogryposis hydranencephaly syndrome have also been reported in fetuses and neonates in 2013. The EFSA suggests that areas on the periphery of previously affected countries may have a lower prevalence and susceptible animals may be present. It says there is no apparent evidence to refute the assumption that infection with SBV results in long term immunity but, it says, 'vigilance for evidence to the contrary is important'.

The report notes that newly affected cattle herds have been reported throughout Europe into 2013, although a smaller number of herds have been reported in the spring of 2013 than were reported in spring 2012. 'It is important to note that these reports occurred without interruption through the autumn and winter of 2012', it says. Similarly, a smaller number of sheep and goat herds were reported to be affected in spring 2013 compared with spring 2012. However, the EFSA warns that, because SBV is not a notifiable disease and because in most countries the costs of laboratory testing are borne by the farmer, 'it is likely that there is appreciable under ascertainment of SBV-affected herds'.

* 'Schmallenberg virus: analysis of the epidemiological data (May 2013)'. Available at www.efsa.europa.eu/en/supprting/pub/429e.htm

~ Veterinary Record, May 25, 2013



Announcement

The Commonwealth Veterinary Association Launches a Pilot Continuing Professional Development Programme in 3 Commonwealth and 2 Associated Countries

The Commonwealth Veterinary Association [CVA] is pleased to announce that it has agreements with the Veterinary Associations of Tanzania, Kenya, Uganda and Ethiopia and the Veterinary Faculty of Khartoum, Sudan to pilot a Continuing Professional Development Programme [CPD], commencing 1st January 2013. The CVA will use the results of the pilot programmes to inform a proposal to deliver a major CPD support programme, prospectively in partnership with OIE, EU, WSPA and other organisations, in 2014

E-Learning in key subject areas inclusive of Recent Advances in Veterinary Medicine and Surgery, Veterinary Governance, One Health, Animal Welfare and SPS Standards will be promoted by the CVA CPD programme to complement attendance at more formalised CPD events such as lectures or conferences. A peer reviewed or self administered assessment mechanism will be used to grade the uptake of the materials [accessed online or via pre-recorded media such as CDs, DVDs, flash drives], leading to the award of an appropriate number of CPD points.

The interest and consequent experience of colleagues in the following approaches to undertaking CPD will be trialled by the pilot programme:-

- Assisted reference access for authorship of a clinical case history, paper or review.
- Assisted reference access for critical review/analysis of key policy areas inclusive of: Veterinary Governance, One Health, Animal Welfare and SPS Standards.
- Accessing CPD modules that can be accumulated for certificate, diploma or further degree courses.
- Developing E-Learning CPD materials into formats suitable for cascading from Veterinarians to Veterinary-para professionals to Frontline Veterinary Staff.

The CVA-CPD programme would be pleased to receive views, ideas and offers of collaboration from organisations and colleagues willing to assist us in delivering the above or suggested alternative E-Learning approaches. Any information on existing materials that are readily available, or that could be adapted, for purposes of the CVA CPD programme would be gratefully received.

Please contact;

Jeff Cave, CVA CPD Programme Coordinator (Jeff.Cave@dpi.vic.gov.au) or Chris Daborn, Technical Advisor CVA CPD programme (tvs@habari.co.tz) with any feedback or requests for further information.

Country Report - Uganda

Overall Country Situation

The Veterinary profession has continued to face a number of challenges in the face of the on-going review of the regulation of the Drugs sector. Pharmacists want Veterinarians out of the drug regulatory positions as inspectors of drugs. As a result of this and other issues previously reported to CVA Secretariat, the desire for the establishment of a separate Ministry of Animal Industry, Veterinary Services, Wildlife and Fisheries has become more urgent than before. The Veterinary Association is already making wide consultations on this before tabling a petition to the parliament of Uganda for consideration.

The East African Common Market treaty signed in 2010 is in its initial stages of implementation and the issue of free movement of goods and services presents an opportunity for the members of the veterinary fraternity in the Countries in the region to work together. The plan for an East African Veterinary Association (EAVA) for the member Countries like Kenya, Tanzania and Uganda has started and is expected to bring in Burundi and Rwanda.

The Uganda Veterinary Association (UVA) and the Uganda Medical Association (UMA) held a joint ONE HEALTH Conference from 14th to 16th February and signed a memorandum of understanding on 16th February for continued working together in the spirit of One Health Approach in the areas of pursuit of common professional issues, joint implementation, surveillance and research activities on zoonoses, issues of food safety, drug management and drug residues in products. Both the WVA and WMA Presidents sent messages of support for the joint conference.

The Livestock Population: No new statistics received yet apart from what was reflected in the last report of January-December 2012.

Veterinary Report

1. Government

a) **Organization of Veterinary Service:** The veterinary services in Uganda are directly under the Ministry of Agriculture Animal Industries and Fisheries

(MAAIF). The structure of the Ministry comprises of one Minister and three Ministers of State, responsible for the animal industry, crop and fisheries sub-sectors, respectively. The Permanent Secretary, as the senior civil servant, is the Ministry's "Accounting Officer".

There are two Directorates - Animal Resources & Fisheries and Crop Resources - an Agricultural Planning Department, a Finance & Administration Department, a Policy Analysis Unit, a Resources Centre, a Procurement Unit and the Plan for Modernization of Agriculture Secretariat (PMA), all reporting directly to the Permanent Secretary.

The Animal Resources & Fisheries Directorate comprises three Departments:

- Animal Production and Marketing
- Livestock Health and Entomology and
- Fisheries Resources.

In addition to the Directorates and Departments, there are seven semi-autonomous bodies that are operationally autonomous but which receive policy guidance from the Ministry. These are the:

- Dairy Development Authority (DDA)
- National Animal Genetic Resource Centre and Data Bank (NAGRIC&DB)
- Uganda Trypanosomiasis Control Council.
- National Agricultural Research Organization (NARO)
- National Agricultural Advisory Services (NAADS)
- Cotton Development Organization and
- Uganda Coffee Development Authority (UCDA)

b) **Major Diseases of Livestock:** A number of diseases remain endemic in Uganda; notable among them are Contagious Bovine and Caprine pleuropneumonia (CBPP), Tick-borne diseases; Helminthosis; Trypanosomiasis; Orf; Newcastle Disease; Gumboro;

Coccidiosis; Salmonellosis; African Swine Fever (ASF); Tuberculosis; Brucellosis, Lumpy Skin Disease, Blackquarter, Rabies, Peste de Petit Ruminants(PPR) and Anthrax

These diseases cause livestock and human health hazards and limit access to livestock export markets.

The tick-borne diseases continued to be a problem with increasing reports of tick resistance to the acaricides in the market especially the synthetic pyrethroids. As a result, series of meetings have been held between March to June between the UVA, UVB, National Drug Authority(NDA), MAAIF, NGOs and other Stakeholders which led to a round-table breakfast conference attended by members of parliament and His Excellency the President of Uganda, Yoweri Kaguta Museveni on 18/6/2013.

Representatives from the Districts where the farmers earlier petitioned for a separate Ministry for Veterinary services, Animal Industry and Fisheries repeated their demand to the President with the support of all the stakeholders in the meeting.

c) Control Measures Implemented: Vaccinations against Brucellosis, Rabies, Black quarter and PPR continued in various parts of the Country.

d) Outbreaks in the Period: CBPP and African swine Fever continued to be reported in various Districts during the reporting period.

e) Numbers State Vet/Animal Health Officer/Other: There are 935 veterinarians registered with Uganda Veterinary Association.

f) Districts: Uganda has 112 districts and each district has a District Veterinary Officer (DVO). These are supposed to be assisted by Veterinary Officers (VOs) in each Sub-county. A number of Veterinarians have taken up key positions in the National Agricultural Advisory Services (NAADS) and 15 new veterinary Inspectors recruited plus another 15 Senior Veterinary Officers to work in strategically selected boarder Districts on deployment by the Central Government.

This is expected to bridge the existing gap in the chain of command in the delivery of veterinary services in the Country which has been a big problem under the decentralized local governance system

g) Control of Veterinary Profession

1. *The Uganda Veterinary Board (UVB):* The Veterinary Profession is controlled by the Uganda Veterinary Board (UVB). The Board has recently been re-activated, thanks to the efforts of the former President UVA Dr. Sam George Okech who maintained his position of membership on the Board that he had got by virtue of his being the President of the Association. Already work is on-going on revising the Veterinary surgeons Act in readiness for submission to Parliament for amendment.

2. *Uganda Veterinary Association (UVA):* As reported in the last report of February 2013, the line-up is as summarized below:

a. UVA Executive Committee (2012-2014)

Dr. DV. Mundrugo-ogo Lali	President and CVA Councillor
Dr. Monica Musenero	Vice- President
Dr. Lawrence Mugisha	General Secretary
Dr. Charles Lagu	Asst. Gen. Secretary
Dr. Alice Banga	Treasurer
Dr. Simon Peter Musinguzi	Assistant Treasurer

Committee Members

- Dr. Stephen Birungi
- Dr. Berna Nakanwagi
- Dr. Clovice kankya

b. Committees

The UVA has five committees each chaired by an Executive Member and other four registered veterinary members appointed by the Executive:

1. Finance and Administration committee
2. Business Development Committee
3. Publicity and External Relations Committee
4. Research, Training and Innovations Committee
5. Membership and Public Relations Committee

~ Dr. DV Mundrugo-Ogo Lali
CVA Councillor, Uganda

World Veterinary Day - Uganda

Public awareness among the communities, political and civic leaders is still poor. Regulations including bylaws governing ownership, restraint and vaccination of pets and other animals are not being adhered to nor are the authorities enforcing them. Therefore given the prevailing situation, Uganda Veterinary Association together with other partner organizations joined hands to commemorate the celebrations with various activities that were carried out in many parts of the country.

The objective of the activities is “to raise awareness to communities the role of vets and medics towards the one health initiative”.

On 20th April 2013, a radio talk show was hosted about the World Veterinary day celebration activities in Uganda under the theme "**Vaccination to Prevent and Protect**" at Pearl F.M to talk to the listeners about the celebrations.

A **Press Conference** was held on 23rd April 2013 to explain to the media the reason for the celebrations, the meaning of the theme and introduce to them the programme for the 'Vet Week' to which they were invited to participate in and report about.

A **Television Talk show** was hosted by the UVA President and General Secretary on WBS T.V on Health Net program in the evening of 22nd April 2013 as part of an awareness campaign about the benefits of Vaccination as a means of prevention and protection plus answering queries raised by viewers.

A **Workshop** was held on 23rd April 2013 at COVAB theme: "*Vaccination for improved Community health and food security (livelihoods)*" was organized in Makerere University at the College of Veterinary Medicine, Animal Resources and Biosecurity attended by many members of the University. Papers were presented on the following:

- The challenges and opportunities for improving animal health" and "The role of training institutions in ensuring animal health" by Dr. Vinant Nantulya
- Sorting, cold chain of vaccines and challenges faced by the private sector" by Dr. Juliet
- Role of government in prevention and control of disease" by Dr. Ayebazibwe Chris.

In the General Discussion, many issues were raised by the participants for further follow-up by UVA and MAAIF.

A Mass Vaccination Exercise involving the Community in Dog and Cat Vaccination against rabies at Kawempe, Katetalawo zone.



Preparing to start vaccination of pets against rabies

A total of 48 dogs and 8 cats were vaccinated and a total 40 stray dogs were humanely eliminated using poisoned baits.

A team comprising students from Makerere Veterinary College carried out a school out reach program at Hope Primary Boarding Secondary School, Bwebajja and Jaanyi Primary School.

A number of topics were handled by the students among which, the role of a Veterinarian to the community was identified and the subjects to concentrate on if one would wish to be a veterinary surgeon in future.

The role of pets in our home and how they should be cared for (tips for pet care and what should never be done to dogs) was presented by Ms. Birungi Maureen; and a presentation on rabies was made by Mr. Mabirizi Alex, who informed pupils on rabies, prevention and control.

World Veterinary Day in Nakapiripirit

The team from Kampala travelled to Nakapiripirit, the venue for the main celebration. on 25th April 2013. The team included 2 UVA Executive Executive members (President and General Secretary), and 2 staff, 2 University representatives, Veterinary Students, Ministry of Agriculture and Animal Industry officials, National Drug Authority officials, Grameen Foundation representatives and Diary Development Authority representatives.

The purpose of the celebration was to increase awareness of the importance of Vaccination, Vaccination to prevent and protect animal related diseases to humans thus the celebration marked the link between animal Diseases and public health, indicating the current and potential movements of diseases between animal and human populations which would be prevented through vaccination.

Following activities were carried out at Nakapiripirit, venue of the main celebrations.

- Creating awareness on improved management of animal related diseases and how they could be passed on to humans.
- Mass vaccinations of cattle in Nakapiripirt District against contagious Bovine Peuropneumonia by involving some veterinary students in the vaccination exercise.
- A procession of veterinarians, veterinary students plus community was taken through Nakapiripirit town to mark the celebrations

- Exhibitions were made at the ceremonial grounds with different farmer groups showcasing there products.
- Published supplements on vaccination in the local press.

On 26th April 2013, there was mass vaccination of animals against contagious Bovine Pleuropneumonia in Akuam cattle crush, Kakomongole sub-county in Nakapiripirit and a total of 998 Animals were vaccinated.

Main WVD Celebrations

The main celebration was marked by a huge procession in Nakapiripiri Town. Participants included; Veterinarians, para veterinarians, veterinary students, Ministry officials, Government officials, NGOs working for animal health, local bodies, school children, Farmers and also involving rural people. In Red Blouse and Black Coat are Ministers.

~ Dr. DV Mundrugo-Ogo Lali
CVA Councillor, Uganda



Veterinary students involved in mass vaccination exercise in Nakapiripirit



Procession through Nakapiripirit Town to mark WVD Celebrations



Minister of State in-charge of Karamoja Affairs (red-dress) at the Exhibition Stall

Rabies Mission ready to roll

The Mission Rabies all-terrain, self sufficient mobile veterinary hospital, which was introduced to the veterinary profession at the BSAVA congress in Birmingham in April, is now fully fitted and ready to begin its journey to India.

Mission Rabies is the initiative of vet Luke Gamble, and is being organized through his charity Worldwide Veterinary Service (WVS). The mission aims to vaccinate 50,000 street dogs in 10 rabies hotspots in India in 28 September 2013.

The truck's official launch took place at the Dogs Trust Harefield rehoming centre on May 30, making the charity's support for the project. Dogs Trust's Chief executive, Clarissa Baldwin, explained that the mission would have a huge impact in dog welfare and that its aims fitted those of Dogs Trust - that 'dogs should enjoy a happy life, free from the threat of unnecessary destruction wherever they may be'.

'This team effort is borne out of a desire to help people and dogs', said Mr. Gamble, He explained that, according to the World Health Organization, mass vaccination of dogs was the most effective measure for controlling rabies in people, and that vaccinating 70 per cent of the dogs in an area where rabies was prevalent was necessary to control the disease in both people and dogs. That was why the initiative was so important.

Before leaving the UK, the vehicle will visit Dogs Trust centres and some of the UK veterinary schools. Once in India, it will visit various rabies vaccination 'checkpoints' and work with local Indian animal welfare organization, local government officials, Indian



Luke Gamble (in driving seat) of the Mission Rabies all-terrain veterinary hospital vehicle. Also shown are Clarissa Baldwin, Dogs Trust's Chief Executive (left), the Countess of Shaftesbury, who is patron of Worldwide Veterinary Service, and the actor and animal lover Peter Egan

veterinary colleges and teams of international veterinary volunteers. It will provide vital support for the veterinary teams, as well as acting as a flagship for the campaign, generating support and interest from the local community and spreading important educational messages about rabies prevention.

After the 30-day vaccination mission, the truck will return to each checkpoint for a month and work with local animal welfare organizations to train Indian vets and animal care workers, giving them the skills to sustainably and humanely manage street dog populations and continue the programme of rabies vaccination, with the ultimate aim of targeting two million dogs across India over the next three years.

Davies Veterinary Specialists in Hertfordshire is donating the 50,000 rabies vaccinations required for the first month of the campaign, Ian Battersby, a member of the referral practice's internal medicine team, has been helping to organise the mission and will be travelling to India in September to take part in its work.

All the equipment for the mobile hospital has also been donated.

* Mission Rabies is seeking volunteers either to join the teams at the vaccination hotspots in India, or to run canine neutering training courses for Indian vets from the truck's onboard operating theater. Details are available from
Kate Shervell
E-mail : kate@wvs.org.uk

~ Veterinary Record, Jun 8, 2013

Plans to ease cross-border movements of sport horses

Work has begun on a three-year project to improve the cross-border movement of elite sport horses. A senior veterinarian from the Federation Equestre Internationale (EFI) is to be seconded to the headquarters of the World Organization for Animal Health (OIE) in Paris to help define a subpopulation of lower disease risk, high-health, high-performance sport horses, which will be integrated into countries' existing biosecurity systems.

The veterinarian will also help to support the OIE's 'Performance of Veterinary Services' initiative, a global programme for the sustainable development of national veterinary services around the world.



FEI President HRH Princess Haya Bint Al Hussein and OIE Director General Bernard Vallat, pictured at FEI headquarters in Lausanne, Switzerland, to celebrate the start of a three-year plan for the safe International movement of sport horses.

The FEI and OIE are also developing communication tools focusing on the valuable economic and social contribution made by equestrian sports, to help governments as they modernize import and export procedures to accommodate the safe movement of sport horses while protecting their welfare.

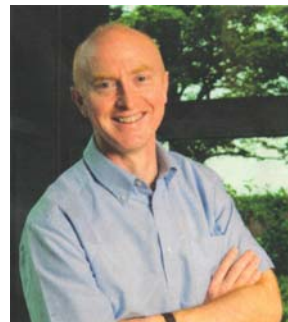
~ **Veterinary Record, Mar 9, 2013**

Head appointed for Surrey vet school

Prof Chris Proudman has been appointed as the founding head of the new School of Veterinary Medicine at the University of Surrey.

Professor Proudman, who is expected to begin work at Surrey in September, joins the new veterinary school

from the University of Liverpool, where he has held numerous managerial and leadership roles in the School of Veterinary Science, the wider university and in external partnerships.



Prof Chris Proudman

He graduated from Cambridge university in 1988 and has been an equine clinician and clinical teacher for more than 20 years. His previous roles include head of Liverpool's Department of Veterinary Clinical Science, membership of the senior management teams of the Faculty of Veterinary Science and the Institute of Translational Medicine, and chair of the Cheshire West and Chester Rural Regeneration Strategy Board. His current research focuses on equine gastrointestinal health and disease, and he has recently undertaken research on behalf of the Horserace Betting Levy Board, veterinary charitable trusts and the Egyptian government.

~ **Veterinary Record, Jun 8, 2013**

First Case of Schmallenberg disease confirmed in Scotland

The first confirmed case of Schmallenberg disease in Scotland has been reported in a calf born into a suckler herd in Dumfriesshire. Scotland's Rural College (SRUC) said on April 19 that birth defects in the calf were consistent with the pathology of the disease, and that tests carried out by SAC Consulting Veterinary Services and the Moredun Research Institute confirmed the presence of Schmallenberg virus (SBV).

'The report of this recent calving in Dumfriesshire would indicate that SBV was spread by midges in the area during last autumn'. Said Brian Hosie, head of SAC Veterinary Services. 'We would urge farmers to be more alert than ever to potential problems among cattle or sheep and discuss any concerns with their veterinary surgeons.'

In March, the Scottish Government reported that blood tests on eight dairy cows in a herd at SRUC's Barony campus in Dumfries and Galloway had tested positive for antibodies to SBV, indicating that they had been exposed to the virus in 2012, although at a low level. On April 19, SRUC said that there had been no evidence of calving problems in that herd.

~ **Veterinary Record, Apr 27, 2013**

Journal of Commonwealth Veterinary Association

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1. Gibson KT, Hodge H, Whittem T. Inflammatory mediators in equine synovial fluid. *Aust Vet J* 1996; 73: 148-151.
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~ Editor, JCVA

CALENDAR OF EVENTS

2013

65th CVMA Convention, Victoria, BC. **10-13 July**

15th CVA Regional Meeting of Australasia/Oceania Region, Nadi, Fiji. **2-6 September**

25th Veterinary Association of Malaysia (VAM) Congress, Johor, Malaysia. **13-15 September**

31st World Veterinary Congress, Prague, Czech Republic. **17-20 September**

3rd Conference on Global Animal Health, Washington DC, USA. **17-18 October**

2014

BSAVA World Congress, The ICC/NIA, Birmingham, UK. **3-6 April**

38th Annual World Small Animal Veterinary Association (WSAVA) Congress, Cape Town, South Africa. **16-19 September**

2015

6th Pan Commonwealth Veterinary Conference, Kuala Lumpur, Malaysia. (Date to be announced).

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