NEWSLETTER

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ATVPHPM is committed to developing and fostering the academic base for veterinary public health and preventive medicine

Visit the ATVPHPM Web site at...
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The ATVPHPM Constitution and By-Laws require that members two years in arrears in dues remain $15 US annually and are payable on January 1 of each year. If, for example, your dues payment year is indicated to be 96, then to become current you should remit two years dues or $30.

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**SPECIAL NOTE:** The ATVPHPM Constitution and By-Laws require that members two years in arrears in payment of dues shall be dropped from membership (Article VIII)
ASSOCIATION NEWS

Discussion of Graduate Education Issues Planned for 1999 CRWAD
From: Daniel T. Scholl <echdts@unix1.sncc.lsu.edu>

Plans are being made for a symposium on graduate student training in veterinary public health and epidemiology. Although the full symposium cannot be offered until the year 2000 Conference of Research Workers in Animal Disease meeting, we will lay the ground work for the symposium at this year's CRWAD, Sunday November, 15, 1999. Meeting from 4 to 5 p.m., after the Risk Assessment Symposium, all interested individuals are invited to participate in a facilitated discussion of some of the ideas and issues that are important as we seek excellence in our graduate training programs and prepare for the future. Issues already in line for discussion include skill requirements and anticipated employment opportunities in the coming years, training non-DVM candidates, thesis vs. non-thesis master's programs and teaching methods. Do you have thoughts or opinions on these and other issues or would you like to hear others' thoughts and opinions? Your participation in the discussion in order to add to the topic list and to develop the current ideas will be highly valued.

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Current and past issues of the ATVPHPM Newsletter are also available online at:

http://www.cvm.uiuc.edu/atvphpm/

CORRESPONDENCE

A Message from Dr. Mary Torrence <mtorrence@reeusda.gov>

I joined USDA, Cooperative State Research Education and Extension Service (CSREES) as the National Program Leader for Epidemiology and Veterinary Clinical Medicine in April, 1998. This agency interacts with other governmental agencies on issues of national importance and interacts with land grant universities to provide guidance in research, extension, and education in high priority areas.

Presently, one of my duties is as program manager for the NEW supplement NRI food safety grant on "epidemiological approaches to food safety" which I initiated. This program will give LARGE grants for epidemiological research. You can find a description of the request for proposals on the web site:
http://www.reeusda.gov/nri

This web site contains current requests for proposals. The deadline is April 5, 1999. This program should continue in the future as well.

I am very excited about the new opportunities for veterinary epidemiologists to obtain the money they need. In addition, I am trying to organize and fund a 2 day workshop on epidemiologic studies and approaches. This workshop will look at current and new epidemiologic methodologies in food safety, emerging diseases, and emerging animal diseases with public health impact.

I am currently working on a website to be connected to the reeusda.gov website. Please feel free to contact me at (202) 401-6357 or mtorrence@reeusda.gov on issues related to epidemiology and veterinary clinical medicine or if there is anything else I can do.

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VETERINARY PUBLIC HEALTH IN DISASTERS IN DEVELOPING COUNTRIES

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The two major causes of disasters in developing countries are epizootics and geophysical events. Throughout history epizootic diseases have killed large populations of animals and reduced the production efficiency of many animals. In addition to epizootics, and sometimes exacerbating these, numerous geophysical disasters affect livestock agriculture every year. These geophysical events can also cause considerable loss of animal life and spoilage of processed foods for humans.

In many ways these are the same threats of disaster that face developed countries. The difference lies in the frequency and relative magnitude of impact that disasters have in the two types of countries. Industrialized countries are usually capable of a rapid compensation of losses through growth in other parts of the country. By contrast, in some developing countries over 60% of their entire livestock industry may be at risk of geophysical disasters. Also, the frequency and magnitude of disasters in developing countries, including war, is higher than elsewhere. As a result many disasters in developing countries bring with them the potential for serious long lasting impacts on animal agriculture and, therefore, also a countries' public health and economy.

Public health is dependent on animal health in developing countries is because poor animal health directly affects the human food supply. The livestock industry is the primary source of essential amino acids for its citizens. Essential amino acids are necessary for normal growth, immunity and longevity of humans and may not be available in sufficient quantities in plant diets. Many developing countries have limited food reserves and nutritional deficiencies are common in humans. In disasters the scarcity of food can be further exacerbated due to animal deaths and because of spoilage of processed foods.

The close dependence on agriculture in developing countries also means that following a disaster a country must aim to reestablish its agriculture as quickly as possible, so that it depends for as short a time as possible on disaster relief from other countries. This is likely only to be possible if an early emphasis is placed on rebuilding agriculture following a disaster. Specifically, preventing the demise of the livestock agriculture it is possible to reduce losses to lack of food supply, draft power, and personal wealth.
Examples of "international" disasters involving the livestock industry

Geophysical disasters
In 1970 the East Bengal cyclone killed approximately 60% of all cattle in a 2,000 square mile area. Throughout this widespread area 30 - 80% of farmers lost cattle due to drowning. Six months later a survey revealed that the amount of land being cultivated had decreased from over 20% to about 6%. The most common reason given by farmers was the lack of bullocks and buffalo to plow the fields. It was estimated that to return the area to pre cyclone production levels 123,000 cattle (12.8 cows per 100 acres) and 127,000 plows were needed. Nearly 90% of all fisherman could also not fish because they had lost essential equipment.

In 1991 Mount Hudson erupted in southern Chile. Volcanic ash was blown as far south as the Falkland Islands. In its path approximately 2.5 million sheep grazed in Chile and Argentina. As the ash deposited on pastures thousands of these sheep died due to starvation as the ash prevented access to forages and wore down their teeth.

In 1992 droughts in Zimbabwe resulted in a 12% decrease in the national economy, most of which was due to deterioration in the agricultural sector. In the winter of 1996 in China 700,000 cattle and yak died due to severe weather. Farmers we unable to plow large areas of fields in the following spring. In floods affecting the Pacific coast of El Salvador in 1996 over 20,000 cattle drowned. Later many areas affected by the floods damp soil conditions favored the growth of parasites, which resulted in increased mortality and morbidity in livestock.

In 1998 an extremely hard winter in Northern Tibet resulted in the death of over 10 million buffalo and sheep, most of which belonged to Nomads. Many people also died.

Epizootics
In 1991 an outbreak of African Swine Fever in Haiti necessitated the slaughter of most of the swine on the island. The indigenous black pigs were replaced with "improved" white breeds. Farmers continued to loose income, because the new breeds of pigs were not hardy enough to walk long distances to market for sale.

In 1998 Rift Valley Fever outbreaks were associated with heavy rains in North Eastern Kenya, Southern Somalia and Tanzania. The rains were thought to have been associated with an El Nino. Several 100,000 livestock were affected, with mortality rates between 50 and 75% in the early stages of the outbreak. Over 89,000 human cases of Rift Valley Fever occurred and resulted in over 300 human deaths.

Natural disasters associated with epizootics
Between 1950 and 1980 there were 3 major El Nino events. Between 1984 and 1998 there have been 4. With an increasing understanding of weather patterns it has been possible to associate increases in diseases and disease outbreaks with increased rain fall or droughts. Examples of associations between diseases and El Nino years are Foot and Mouth Disease, pneumonic plague in Ecuador, and rabies and leptospirosis in Cuba and the Caribbean, respectively.

Technological disasters
Ten years after the Chernobyl nuclear disaster in 1986 sheep farmers in parts of Scotland still could not sell any sheep for human consumption due to excess radioactivity on their pasture. As part of many wars and genocidal movements aggressors deliberately attempt to wipe out livestock agriculture in countries being invaded. This is done in an attempt to gain control and destroy a country's national heritage and identity.

Vulnerability of human populations in developing countries due to disasters involving animals
The most vulnerable human populations are rural communities, farm laborers and dependent families. The most vulnerable type of farms are subsistence and small farms, which are owned and have improved or natural pastures. Livestock producers suffer mainly from economic losses as animals die, loose weight or become ill. Subsistence farmers and other country dwellers usually have the lowest reserves (cash, food, assets) and may, therefore, suffer existential threats. Many of these people also depend on livestock producers as employers for income, so that if a livestock producer suffers losses, many other dependents do too.

Impact of disasters on food availability
Food availability is affected by disasters in several ways. Large scale mortality of livestock following an outbreak of contagious disease or being killed in a disaster will result in a decrease in the number of animals available as a source of food for humans. Decreased food availability also results from weight loss in animals brought to slaughter, and contamination of food and failure of food hygiene practices resulting from disasters can reduce the amount of processed food that is available. Differences in the sources of food and their respective marketing networks are responsible for creating differential impacts of disasters on both consumers and producers. Most city dwellers buy food of animal origin at markets. Typically food that is processed and sold in the cities is produced by large scale producers or the food is imported. Losses (deaths and weight loss) of livestock would have otherwise been supplied by domestic producers to city markets forces a country to increase imports or to request international aid. Unfortunately, neither of these

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solutions are permanent and may contribute to a nation's international trade deficit. In rural communities food shortage manifests itself differently. A significant amount of food is grown by the families who consume it. The raising of minor species (chickens, pigs, turkeys, ducks and guinea pigs) and in some cases cattle, provides a supplemental source of dietary protein. Consumption of the animals and their products may make up as much as 30% of subsistence farmers' family protein intake. The dependence on subsistence sources of food are great.

Often loss of food availability to subsistence farmers is not compensated for, rather it results in prolonged food shortages to subsistence farmers. Loss of minor species in disasters and the resulting nutritional deficiencies in subsistence farmers may be one of the largest impact that disasters involving animals have on public health. Children may be the first to suffer from the effects of an impaired food supply, as many (approximately 30%) of them are already on marginal diets.

A role for veterinarians
For many years veterinarians have been the pioneers of animal agriculture throughout the world. The veterinary profession has been responsible for the eradication of many diseases from many countries, the development of vaccines, and disease surveillance and intervention programs. In many instances veterinarians have also responded to the needs of countries affected by geophysical disasters. However, it has been non-veterinary organizations that have led the field in an organized approach to geophysical disasters.

Much of veterinarians' involvement in disasters in developing countries has suffered from the perception that the control of epizootics are exclusively veterinary programs, a disproportionate emphasis on response phase to disasters, and the lack of an all hazards approach to disasters involving the livestock. These actions have alienated other disaster relief agencies and professions active in developing countries. A regrettable consequence of this alienation is the increasingly prevalent point of view that veterinarians are merely technicians, rather than as professionals with a tremendous amount to contribute toward societal well being. Further, a disproportionate emphasis on the response to disasters involving the livestock industry, instead of an emphasis on mitigation, has done little to dispel a costly vicious cycle of damage-repair. The solution to this dilemma starts with an appreciation that all types of disasters affecting animal agriculture in developing countries also affect their society as a whole. Even though there are many different types of disasters, they all have similar socio economic impacts on a country. Therefore, the responsibility of veterinarians is to participate as a member of the emergency management team and to work from within integrated programs involved in all types of disaster reduction programs. This can likely only be accomplished by being present in a country before a disaster strikes. The role of the veterinarian in this integrated effort of emergency management should be clear, and is no different than other aspects of veterinary disaster management: the care of animals is an effective method to provide better care for people. In the case of national disasters in developing countries, the attention to animal agriculture is an effective method to improve the care of a country's citizenry (public health), economy and environment.

Funding for disaster relief may depend Veterinary Disaster Management in developing countries being recognized as a form of humanitarian assistance. Several organizations are beginning to recognize this. By recognizing Veterinary Disaster Management as a form of humanitarian aid, the veterinary profession's involvement in disasters will also be clearly recognized as a contribution to public health contribution.

PRODUCTS & REVIEWS

FAO Agriculture Data and Publications
http://www.fao.org/ag/

To "promote food security and sustainable development into the next millennium," the Agriculture Department of the Food and Agriculture Organization (FAO) of the United Nations has recently created this new resource. An impressive and clearly arranged interface leads researchers to more than one gigabyte of data from various UN Agriculture Department sites. A detailed list of available software, databases, publication lists, and email conferences is provided via the Guides section of the site. Other services include Magazine, a monthly publication on international agricultural issues, and Gateway, a link pointing to UN Department of Agriculture divisional homepages.

Announcing a GIS Front End to ProMED
From: "David C. Roberts" <droberts@mitretek.org>

In response to an increased concern about infectious diseases and the effects of human activities on human
health, Mitretek Systems has created a web application that allows the user to view biological events reported through the ProMED newsfeed through a geographic information systems (GIS) interface. Events are displayed by location on a map. By clicking on a displayed dot on the map, an information function allows the user to retrieve ProMED posts linked to the corresponding location on the map.

The application can be accessed at

http://sonoran.mitretek.org/gismsr/bioevents/

The current version of the application is limited to documents from ProMED, and covers only diseases and other biological events with specific locations occurring in the United States. The current data set goes back to September 1998 but includes a few older postings as well. If only the state is identified, the capital of the state is shown as the location.

It is hoped that this application will prove to be of value to members of the public health and national security communities in identifying and tracking disease processes over space and time. Other applications of this technology are envisioned that would provide near-real-time tracking of events.

Mitretek Systems is a nonprofit company that works in the public interest through the application of science and technology. Feedback or inquiries are welcome.

Contact David C. Roberts <droberts@mitretek.org>

ProMed Moderator JW writes:

This is the sort of user-friendly application of ProMED-mail info that we are happy to see being developed. Many thanks, David!

As you will learn when you visit the site, it doesn’t work on all browser versions. The demo didn’t work on my browser, so if it doesn’t on yours either, here are some tips to help you get started.

First, you have to find a taskbar on the left with an index of diseases and their colored dots, and a toolbar at the top. Next, maximize the screen, otherwise you don’t see the box on the bottom that appears when you click on a dot, which contains the hot link to the ProMED post. (There are some links to other sources, e.g. Plaguescape, as well).

Then I suggest that you use the magnifying glass marked + from the top toolbar to draw a box round the 48 contiguous states & enlarge it to fill the screen. Next, untick all the boxes in the left-hand taskbar to clear all the dots. Then click the Hantavirus box on the left & 2 brown dots appear on the map, one on the CA/NV border & the other in AZ. Click on the dot in AZ and a box appears at the bottom of the screen with some relevant info & a hot link to our post on "Hantavirus from old bones," in which a certain Mod.CHC tells about finding dried rodent bones in the Arizona desert.

There’s also a pull-down query menu.

ProMed Moderator CHC writes:

I was able to query "Ballina" and got all the listings on the Australian bat lyssavirus. Which is pretty remarkable since the map only shows the USA!

CaDDiS - Cattle Disease Diagnostic System

From: Sammy McKee <sammy@dis.strath.ac.uk>

Cattle Disease Diagnostic System (CaDDiS) is a computer program which attempts to aid the diagnosis of certain common tropical diseases in cattle. The system is based on a Bayesian belief network approach and evaluates the relative likelihood of a cow having any of the specified diseases given the observation of particular clinical signs.

The Interactive CaDDiS model can be found at:

http://www.dis.strath.ac.uk/vie/CaDDiS

CaDDiS Home Page containing further information can be found at:

http://www.dis.strath.ac.uk/vie/CaDDiS/docs/Home_Page.html

This project is part of a Veterinary Informatics & Epidemiology (VIE) joint venture between the University of Strathclyde and the University of Glasgow. The VIE Home Page can be found at:

http://www.dis.strath.ac.uk/vie

Please forward any comments about the Web-Sites to:
crawford@dis.strath.ac.uk
INTERNET RESOURCES

FoodSafety.gov - A New web Site Established
From: Cindy Roberts
<croberts@nal.usda.gov>

http://www.foodsafety.gov/

“www.FoodSafety.gov” is a "gateway" web site designed to help the public find government food safety information more readily on the web. The site provides links to food safety-related web sites from federal, state and local government agencies. "www.FoodSafety.gov" is one of the initiatives of the May 1997 National Food Safety Initiative Report to the President. This site was developed by FDA's Center for Food Safety and Applied Nutrition (CFSAN) in consultation with USDA’s Food Safety Inspection Service (FSIS).

"Virtual Rounds" EBM exercise on the World Wide Web
From: Ronald D. Smith
<rd-smith@uiuc.edu>

I invite you to peruse one of 17 "Virtual Rounds" exercises that we have developed to support teaching veterinary epidemiology in an Evidence-Based Medicine context. The Virtual Rounds Web site is located at...

http://www.cvm.uiuc.edu/courses/vp350/rounds/roundshome.htm

At the present time only one case, "Patches the Beagle", is available for viewing. Among the objectives of the Virtual Rounds exercise were:

- how to work up a case
- how to formulate clinically-relevant questions
- how to find clinically-relevant evidence from traditional sources, in bibliographic databases, and on the Internet
- how to critically-appraise the validity of that evidence
- how to apply epidemiologic findings to patient care

Along the way students also learned a lot about the medical condition that they were working up.

The case workup closely follows the Problem-Oriented Medical Record (POMR) approach. At the time students were working up the case, their progression was interrupted at key stages and they were asked to fill an "Educational Prescription". These stages were (1) problem list, (2) differential diagnoses, (3) diagnostic plan, and (4) therapeutic plan. Links to the educational prescription and selected student responses ("Critically-Appraised Topics") can be found at the bottom of the respective stages in the case workup.


I would welcome any comments on the lesson materials, the overall approach used, and how to improve the lessons for the next go-around.

Distance Learning Classes in Epidemiology and Biostatistics

The University of North Carolina School of Public Health offers masters degrees in public health disciplines. Online courses include epidemiology and biostatistics as applied to public health.

The web site is:
http://cdlhc.sph.unc.edu/
Select the “Example Course” to try out an online course.
NEWS & COMMENTARY

IFST Position Statement on Organic Food
From: J Ralph Blanchfield, MBE
<jralphb@easynet.co.uk>

The Institute of Food Science & Technology (IFST) Position Statement on Organic Food, dated 29 January 1999, is now on the IFST Web site, where it can be accessed at
http://www.easynet.co.uk/ifst/hottop24.htm
and downloaded and saved if desired.

BTW if you visit the IFST Web Site at http://www.easynet.co.uk/ifst/ you will find lots of other goodies including Position Statements on numerous hot topics.

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Food Science, Food Technology & Food Law
Consultant Chair, IFST External Affairs
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Environmental Effects of Animal Agriculture – Call for Papers

We are soliciting contributions for a peer-reviewed volume that will present a broad overview of the environmental concerns associated with animal agriculture, now and into the new millennium. Agriculture is being increasingly recognized as an important consideration in environmental protection, and the production of animal-based foods, including meat, fish, eggs, and dairy is associated with particular concerns.

Many of these concerns have gotten a great deal of attention lately, but they are generally only considered in isolation. The goal of this book is to assist in the discussion of these issues as they naturally relate to each other, given that they trace back to the same industries. The book will collect analyses of the different issues in one place, as well as providing economic and policy overviews that tie them together.

The goal of the book is to provide policy makers and stakeholders with an overview and contextualization for many of the tough questions they face about agriculture and environmental policy. It will help illustrate how policy interventions in one area can also help in others (or, conversely, produce negative spillovers in other arenas).

We plan to include separate chapters on most of the following issues, divided according to the listed categories:

- Local and Regional Externalities
  - locally undesirable land uses (including issues of
  - odor, property values, etc.
  - water pollution
  - overgrazing

- Resource Use
  - land / feed crops
  - water consumption
  - energy and petrochemical use

- Global Environmental Concerns
  - terrestrial habitat and ecosystem loss
  - overfishing and associated ecosystem loss
  - pesticides and other chemical pollution
  - contribution to global warming

- Environmental Health
  - zoonosis
  - non-dietary health externalities from antibiotics,
    - feed supplements, and pesticides

Proposals for chapters on other areas of impact are also welcome. Each topical chapter should provide some overview of the issue, since it will likely be the only chapter devoted to that subtopic. These chapters can, but need not, contain new research. Articles that are entirely reviews or other research-quality surveys of existing information are welcome.

To aid the policy discussions, contributors are encouraged to focus some attention on the distinction between total impacts of the industry in a particular area and the marginal changes that could result from changing total production, production methods, or regulations.

In addition to the chapters on specific topics, the book will be capped by several chapters that bring together some or all of the above topics in economic, public policy, or natural science analyses. These will include a
general overview, and may also include new quantitative research, discussions of social welfare and markets, and analyses of current and future public policies. Proposals for such chapters are encouraged.

Contact:

Carl V. Phillips, carlp@cccs.umn.edu, 612/625-9974, Assistant Professor, Division of Environmental Health and Center for Environment and Health Policy, University of Minnesota School of Public Health.

Jay S. Coggins, jcoggins@dept.agecon.umn.edu, 612/625-6232, Associate Professor, Department of Applied Economics, University of Minnesota.

Zovex - A Swine Health Knowledge-Based System

From: Aalt Dijkhuizen <Aalt.Dijkhuizen@nutreco.nl>

Dear colleagues,

Ina Enting has worked in our group on her PhD-thesis, which she successfully defended last Thursday. Her thesis is entitled: Zovex, a knowledge-based system to analyse factors associated with pig-health disorders. The chapters included in the thesis are:

- General introduction
- Identification of knowledge support in pig farming consultancy: analysis of visits by animal health specialists
- A knowledge documentation methodology for KBS development: an example in animal health management
- Zovex, a knowledge-integrated system to support herd-health management on pig farms
- Validation of Zovex on farms with and without pleurisy problems
- Additional value of Zovex to intended users
- General discussion
- Summary and main conclusions

Some of you will have received a copy of the thesis already. Those who have not and are interested can get one as long as we have available. Please contact our secretary, Marian Jonker, to find out whether there are still copies available and if so, to ask for one. Her e-mail is Marian.Jonker@secr.abe.wau.nl. Phone: +31 317 484 065. Fax: +31 317 482 745.

Economic Evaluation of Information Technology Applications on Dairy Farms

From: Aalt Dijkhuizen <Aalt.Dijkhuizen@nutreco.nl>

Dear colleagues,

Marcel van Asseldonk has worked in our group on his PhD-thesis, which he successfully defended yesterday (February 5). His thesis is entitled: Economic evaluation of information technology applications on dairy farms. The IT-applications in the study included automated concentrate feeding systems, sensors that measure daily physical activity of cows and on-line automated parlour systems for recording of milk production, milk temperature and electronic conductivity of quarter milk. He has quantified the economic benefits both through computer simulation (normative approach) and field data analysis (empirical approach). Potential benefits obtained from the normative analysis were more profound than realised benefits obtained from the empirical analysis. This was particularly the case for applications that were heavily depending on time and management skills of the farmer.

The chapters included in the thesis are:

1. General introduction
2. Information needs and information technology applications on dairy farms
3. Potential economic benefits from changing in management via information technology applications on Dutch dairy farms: a simulation study
4. Quantifying characteristics of information technology applications based on experts knowledge for detection of oestrus and mastitis in dairy cows
5. Dynamic programming to determine optimal investment patterns in information technology on dairy farms
6. Determining farm effects attributable to the introduction and use of a dairy management information system in the Netherlands
8. General discussion
9. Summary and main conclusions

Some of you will have received a copy of the thesis already. Those who have not and are interested can get one as long as we have available. Please contact our secretary, Marian Jonker, to find out whether there are still copies available and if so, to ask for one. Her e-mail is Marian.Jonker@secr.abe.wau.nl. Phone: +31 317 484 065. Fax: +31 317 482 745.
Safety of Food Animal Antimicrobials – USDA/FDA Report
January 27, 1999

http://www.fda.gov/cvm/fda/infores/vmac/ANTIM18.htm

A Proposed Framework for Evaluating and Assuring the Human Safety of the Microbial Effects of Antimicrobial New Animal Drugs Intended for Use in Food-Producing Animals

Table of Contents
- Statement of Purpose
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  - Category I Drugs
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    - Low Potential Human Exposure
  - Microbial Safety
  - Category I Drugs (I/H, I/M, I/L)
  - Category II Drugs (II/H, II/M, II/L)
  - Category III Drugs (III/H, III/M, III/L)
- References

PRRS Virus Still Spreading
From: "Michael Meredith"
<meredith@farmline.com>
February 22nd 1999

The Republic of Ireland (ROI) is one of the few countries in the world that has remained free of the virus of porcine reproductive and respiratory syndrome (also known as "Blue Ear" or "PRRS"). Mainland U.K. became infected in 1991 and most other countries in the European Union in the years 1990-92. Since then, the virus has spread relentlessly around the world. The Irish pig industry, in collaboration with the Department of Agriculture, has, in recent years, maintained a stringent voluntary code of practice to safeguard against importation of the virus, but unfortunately the Province of Northern Ireland (part of the United Kingdom) became infected in 1996, allegedly as a result of semen or live pig imports from mainland U.K. The Northern Ireland Dept. of Agriculture (DANI) introduced a herd accreditation scheme (for PRRS freedom) in January 1998. One of the main reasons for this was to facilitate safe trade in breeding pigs to the Republic.

The Pig Disease Information Centre (PDIC) has now received reports from veterinary practices in the Republic, that PRRS virus (PRRSV) infection has been confirmed on a number of farms in County Cavan, just south of the border with the Province of Northern Ireland. Clinical signs are reported to be mild - a common finding in countries newly infected with PRRSV. Local reports suggest that the virus has probably been introduced into ROI via cross-border imports of weaner ("nursery") pigs. Prices of weaner pigs in N. Ireland have been at their lowest for some decades during the past year. Farmers in the ROI were aware of the risk of importing PRRS, but were allegedly tempted by the bargain prices.

There are approximately 185,000 breeding sows in the Republic. Almost half of the Republic's pig production is exported: mostly to the U.K., but also to Germany, France, Italy and Japan.

In the last three years there has been growing success in eliminating PRRS from infected breeding stock. Many PRRS-free herds have now been established in Canada, France, U.K. and the U.S.A. PRRSV is an Arterivirus, related to equine arteritis virus (EAV), but only known to infect pigs and some species of birds. For latest information about PRRS virus and its control an information pack is available from PDIC (Email: pdic@btinternet.com).

Pig Disease Information Centre, 4, New Close Farm Business Park Bar Road, Lolworth, Cambridgeshire, CB3 8DS Fax: +44-1954-780235 Email: pdic@btinternet.com

Risk Analysis for Chicken Meat Importation into New Zealand
From: Stuart Macdiarmid
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March 30 1999

MAF Risk Analysis for Specified Poultry Product Importation Released for Public Consultation

The Ministry of Agriculture and Forestry has released for public consultation a risk analysis on the importation of specified poultry products to New Zealand.

The risk analysis will be available for industry and public scrutiny from today (30 March 1999) and submissions on the technical validity of the analysis will be received up until 15 June 1999.
New Zealand currently does not allow the importation of uncooked chicken meat or chicken meat products. This policy was implemented because of concerns that such trade might introduce exotic diseases.

Following requests from several trading partners, MAF conducted a rigorous analysis of the disease risks which might be posed should the importation of chicken meat and chicken meat products be permitted. Countries which have expressed interest in exporting chicken meat and chicken meat products to New Zealand include the USA, Australia, Thailand, and EU member states.

The range of chicken meat considered covered uncooked and cooked carcasses, bone-in cuts such as legs, wings and drumsticks, and boneless cuts. This risk analysis also covers chicken meat products (such as soups and prepared meals) containing such forms of chicken meat. The risk analysis considered separately the importation of specified turkey meat preparations from one company (Bernard Matthews Foods Limited or BMFL) in the United Kingdom.

The MAF risk analysis examined in detail 24 exotic diseases of chickens and turkeys which might constitute a risk to local poultry, native birds, or humans. The analysis used established qualitative and, where appropriate, quantitative techniques.

The risk analysis was subject to close scientific review, in whole or in part, by more than 15 experts in New Zealand and overseas. Other experts were consulted on specific issues. The experts included poultry specialists, virologists, epidemiologists, and professional risk analysts. Many of the reviewers are world authorities in their field.

The risk analysis concluded that there is a definite risk that some exotic diseases could be introduced into poultry flocks in this country unless appropriate safeguards were implemented.

The diseases for which specific safeguards would be required include:

* salmonellosis
* avian infectious bronchitis
* avian influenza
* infectious bursal disease
* Newcastle disease / paramyxoviruses
* turkey viral hepatitis

The safeguards proposed would have the effect of restricting the current trade of cooked chicken meat to that from flocks free from a particular form of infectious bursal disease, IBD1. Infectious bursal disease virus is widespread in all poultry-producing countries except New Zealand. The virus is also likely to be present in meat from apparently-healthy chickens, and is unusually resistant to inactivation by cooking. For these reasons, the MAF risk analysis recommends the importation of cooked chicken meat be permitted only from flocks demonstrated to be free from IBD1 virus.

The importation of uncooked chicken meat from such flocks could also be permitted, subject to certain conditions. Flocks from which uncooked chicken meat originated would also have to be demonstrated to be free from specific types of salmonellae which are exotic to New Zealand, as well as Newcastle disease virus.

On the other hand, another strain of infectious bursal diseases, IBD2 virus, is rare in chickens but common in turkeys. The same quantitative risk assessment method used by MAF which demonstrated a very high risk for IBD1 in chicken meat, showed that the risk of introducing IBD2 virus in BMFL turkey meat preparations from the United Kingdom was low (less than two introductions per 100 years of trade).

Furthermore, IBD2 differs from IBD1 in that it does not cause disease in any bird species, wild or domesticated. Because the risk of introducing IBD2 in BMFL turkey meat preparations from the United Kingdom is low, and the consequences of introduction are minor (no disease, possible interference with testing for IBD1), MAF considers that specific safeguards for IBD2 are not warranted. These turkey meat preparations from the UK would still be subject to the other safeguards proposed.

Whether any trade can take place as a result of this analysis has yet to be determined. First the public consultation on the risk analysis must be completed. After that, and before trade could take place, MAF would have to consult with counterpart government agencies in other countries to see if exported products could meet the level of health protection New Zealand requires.

Any such country-specific trade conditions would be set out by MAF in an import health standard or standards. These would be open for a further 60-day consultation period both within New Zealand and internationally.

Contacts:

Scientific issues and risk analysis

Dr Stuart MacDiarmid, National Manager (Agricultural Security), Animal Health & Welfare group, MAF Regulatory Authority, Ministry of Agriculture and Forestry. Phone 04 474 4223.

Trade issues

Andrew Matheson, National Adviser SPS (Animals), Animal Health & Welfare group, MAF Regulatory
**Authority, Ministry of Agriculture and Forestry.** Phone 04 474 4219

**Other questions**

Debbie Gee, Director Corporate Communications, Ministry of Agriculture and Forestry. Phone 04 474 4258

For copies of the risk analysis and other background documents (no media comment)

Martin van Ginkel, Technical Advisory Officer, Agriculture Security, MAF Regulatory Authority, Ministry of Agriculture and Forestry. Phone 04 474 4100. E-mail: vanginkelm @maf.govt.nz.

Also on MAF Website:


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**NAHMS’ Newest: Equine Study**

From: Nina Stanton
<nrothenberger@aphis.usda.gov>

FYI, we have just released results of the NAHMS Equine ’98 Study. Equine is a new field for us, so we don't have a broad customer list defined. If you can help us spread the word that the Equine ’98 information is available, we would appreciate it! There is much more info coming and we would like to get it into the hands of those who can use it.


Please contact me with questions,
Nina Stanton,
NAHMS Writer/Editor
USDA:APHIS:VS, CEAH

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**MEETINGS, WORKSHOPS & COURSES**

See the ATVPHPM Web site at http://www.cvm.uiuc.edu/atvphpm/ for the most current listings.

**Fulbright Scholar Program – Veterinary and Food Safety Award**

2000-01 Fulbright Program with the United Kingdom Royal College of Veterinary Surgeons

The Fulbright Commission in London has announced an award for a scholar to conduct research on the role of the veterinarian in quality assurance of foods derived from animals in the context of European Union legal controls and on future requirements to prevent the spread of food-borne disease. Grantee will also examine provisions for public health teaching in United Kingdom veterinary schools and related institutions. Grantee will be based at the Royal College of Veterinary Surgeons in London.

Applicant should hold a D.V.M. or Ph.D. in an appropriate field. Applicant should have experience in veterinary teaching and/or research with emphasis on public health education and food safety.

The award is for four to five months, beginning September 2000 or January 2001. Total stipend for the award is 7,500 pounds sterling.

To request a hard copy of the application, or the application forms on computer disk, please call (202) 686-7877 or send an e-mail message to <apprequest@cies.iie.org>. Application materials may also be downloaded from the CIES website: <http://www.cies.org>.

Questions regarding the application materials or process should be addressed to: Dr. Karen Adams, (202) 686-6245, <kadams@cies.iie.org> or Ms. Margo Cunniffe, (202) 686-6242, <mcunniffe@cies.iie.org>.

**July 8-10, 1999 - Disease Surveillance Workshop; Sydney, Australia**

From: Ian Lugton
<iian.lugton@smtpgwy.agric.nsw.gov.au>

Have you ever had the urge to visit Australia or Sydney? This year may present you with just the opportunity that you have been looking for!
From Thursday the 8th till Saturday the 10th of July the Australian College of Veterinary Scientists Epidemiology chapter will again participate in College Science Week. Evan Sergeant, Angus Cameron and Ian Lugton, the chapter’s scientific convenor, have cobbled together a fine programme designed to hone skills in disease surveillance. Following the success of events last year, the venue, Camperdown Travelodge in Sydney remains unchanged.

The focus of College Science Week is the provision of cutting edge information and the involvement of the full range of our membership and other interested professionals. To this end, we invite as many attendees as possible to contribute. This can be on either the theme of disease surveillance, or on current or recently completed work which we would all find interesting and educational.

The provisional programme is:

Surveillance workshop (1 to 1.5 days)
- General Principles of surveillance
- Practical Sampling strategies
- Data management and analysis
- Prevalence/Incidence/Freedom surveys
- Surveillance of wildlife populations

Computer workshop for software tools (3 concurrent sessions, rotating):
- Freecalc/HerdAcc
- Survey toolbox
- Epi Info tools

Surveillance contributions (0.5 to 1 day) Presentations on surveillance activities by participants, including presentations on:
- NAQS programs
- FMD surveillance in Philippines
- Eastern Islands project in Indonesia
- Wildlife surveillance
- Food safety surveillance
- National TSE surveillance program
- Ovine Johne's disease surveillance
- Other contributions

Other contributions (0.5 to 1 day)
- General presentations not related to disease surveillance

We urge you to come forward with contributions for the Epidemiology Chapter Science Meeting. If you think that you could contribute to any of the sessions please let Ian Lugton know. At this stage it is anticipated that Chris Baldock, Angus Cameron and Evan Sergeant will play a major role in the workshop. However, if you feel you have expertise in any the suggested topics or related areas please let us know if you would like to present something.

Contact: Ian Lugton
Phone: 0263913951 or e-mail ian.lugton@agric.nsw.gov.au

July 11-16, 1999 - International Short Course in Food Safety; Michigan State University

Michigan State University is planning to organize an International Short Course in Food Safety from July 11 - 16, 1999. The course includes food safety policy development, risk analysis and program implementation to ensure a safe food supply for the global community.

Organized By
National Food Safety & Toxicology Center And the Institute of International Agriculture (IIA), Michigan State University

For more information contact
Course Coordinator:
Dr. K. M. Maredia
Institute of International Agriculture
416 Plant and Soil Sciences Bldg.
Michigan State University
East Lansing, MI 48824, U.S.A.
Phone: (517) 353-5262
Fax: (517) 432-1982
E-Mail: kmaredia@pilot.msu.edu

August 18-21, 1999 - Spatial and Spatio-Temporal Methods - Denmark

From: Dirk Pfeiffer
<D.U.Pfeiffer@massey.ac.nz>

Spatial and Spatio-Temporal Methods - 3rd Short Course on Epidemiological Analysis

Introduction

Many investigations of epidemiological problems have to consider the potential effects of spatial factors. The tools and techniques which can be used to manage, manipulate and analyse spatial data have only become widely accessible over the last 10 years. The main emphasis of the course will be the use of analytical techniques in epidemiological spatial analysis. It will also teach the basic concepts of geographic information systems as well as their application to epidemiological problems. The delivery will be on the basis of a combination of lecture and hands-on sessions. The latter will be conducted in a computer laboratory and participants will be guided through a series of exercises.
based on the content of the lectures. The course has been held previously at the following locations: June 1998 Central Veterinary Laboratory, Weybridge, United Kingdom December 1998, Massey University, Palmerston North, New Zealand The course will be conducted as part of the Summer School programme of the Research School for Animal Production and Health <http://www.raph.dk>, Denmark.

Target Audience

This course is aimed at epidemiologists with experience in standard epidemiological analysis, who would like to develop expertise in the newly evolved field of spatial epidemiology.

Anyone working with epidemiological data will find the course useful. The hands-on sessions are structured such that new as well as advanced spatial analysts will be able to choose amongst exercises appropriate to their skill level.

Course Content

• Concepts of spatial data and geographic information systems
• Visual analysis of spatial data
• Methods for detection of spatial clustering
• Risk factor modelling of spatial data
• Survival analysis
• Space-time clustering

Course Materials

The participants will each obtain a set of course notes as well as detailed documentation for the exercises.

Software

The practical component of the course will involve use of the following software packages:

• Arcview 3.1 <http://www.esri.com> including the Spatial Analyst extension
• Idrisi for Windows <http://www.clarklabs.org/> version 2.0;
• STAT! <http://ic.net/~biomware>
• SpaceStat <mailto:lanselin@utdallas.edu>
• SatScan <http://dep.nci.nih.gov/BB/SaTScan.html>
• DismapWin <http://ftp.ukbf.ublin.de/sozmed/DismapWin.html>
• SPSS for Windows 9.0 <http://www.spss.com>
• Avenue macros for spatial analysis developed at the EpiCentre

Course Leaders

Dr Dirk Pfeiffer

Mark Stevenson <http://epicentre.massey.ac.nz/files/Stevenson/MS_home.htm>

Course Organization

Assoc. Prof. Annette Kjfr Ersbxll <mailto:ake@kvl.dk>

The Royal Veterinary and Agricultural University
Department of Animal Science and Animal Health
Division of Ethology and Health
Groennegaardsvej 8
1870 Frederiksberg C
Denmark
Phone: +45 ( 35) 28 30 21

Course Fee

5500 Danish Kr (~ US$ 750)
(includes: course attendance, course notes, morning/afternoon tea, lunch; excludes accommodation)

Venue

Research School for Animal Production and Health
<http://www.raph.dk>, Foulum, Jutland, Denmark

Registration (closing date 7/31/99)

Annelise Ito (secretary)
The Royal Veterinary and Agricultural University
Department of Animal Science and Animal Health
Division of Ethology and Health
Groennegaardsvej 8
1870 Frederiksberg C
Denmark
Phone: +45 35 28 30 10 secr.
Fax: +45 35 28 30 22
Email: ai@kvl.dk <mailto:ai@kvl.dk>

August 30 - September 2, 1999 - Effects of Animal Feeding Operations (AFOs) on the Environment; Fort Collins, Colorado

The U.S. Geological Survey is sponsoring an AFOs workshop and is now accepting abstracts related to effects of AFOs on the quality of water resources and consequences to human and ecosystem health. The objectives of this workshop are to provide information pertaining to AFOs, to understand the nature and scope of the issues, and to identify potential directions of USGS research and site investigations that best address national concerns.
Topics (proposed)

• National and State perspectives of AFOs issues
• Analytical methods for identification and quantification of pharmaceuticals
• Water-quality and ecotoxicological concerns and environmental effects of
  • Animal pharmaceuticals (e.g., antibiotics and hormones) - Microorganisms (e.g., viruses,
    bacteria, and protozoa) - Nutrients (e.g., phosphorus and nitrogen) - Trace elements from feed additives
    (e.g., arsenic and selenium)
• Processes affecting the fate, mobility, and trophic transfer of contaminants
• Preventive and remediation strategies (e.g., efficiency and effects of BMPs)
• Study design and case studies
• Analytical tools (e.g., isotopes, ribotyping, modelling) - Monitoring methods
• Other emerging contaminant issues related to AFOs.

Additional Information

Instructions for registration, meeting announcements, and additional meeting information will be posted as it becomes available on the following website under "News": http://water.usgs.gov/owq.

Contacts

Dana Kolpin <dwkolpin@usgs.gov> (319) 358-3614
USGS – Toxic Substances Hydrology Program

Franceska Wilde <fwilde@usgs.gov> (703) 648-6866
USGS - Office of Water Quality

September 6-24, 1999 - Modern Approaches to the Epidemiology and Control of Infectious Disease; Oxford, UK

From: Christl Donnelly
<christl.donnelly@zoology.oxford.ac.uk>

An intensive three week course presented by The Wellcome Trust Centre for the Epidemiology of Infectious Disease, University of Oxford

Significant advances have been made in our understanding of the transmission dynamics of infectious disease in human and animal populations. Modern quantitative research methods play an increasing role in influencing the collection and interpretation of field and laboratory observations, developing epidemiological theory and suggesting new approaches to the rational design of control strategies in both industrialised and developing countries.

Additional information: website
http://www.ceid.ox.ac.uk

Registration details can be obtained from
<richard.suswillo@zoo.ox.ac.uk>
Tel +44 (0)1865 281 230; Fax +44 (0)1865 281245

Oct 13-16, 1999 - First Scheveningen Meeting on Molecular diagnostics

This is the first of a series of meetings devoted to all aspects of molecular diagnostics in infectious disease and pathology of humans and animals, which will be organised every two years. These meetings are a continuation of the Benelux and European meetings on Diagnostic PCR.

However, the scope of the meetings has now expanded to include other amplification techniques and probe technology. The emphasis of the meetings will continue to be the practical aspects and the clinical applications. The format of the meetings will also be maintained: general, introductory lectures by internationally renowned experts in the morning and free presentations in dedicated workshops in the afternoon. Poster sessions and industrial exhibits will be an integrated part of the meeting. In conjunction with the meeting a number of business meetings of the participating societies will be organised. The sponsoring companies are expected to organise some specific training and other activities before and after the meetings.

The scientific part of meetings is organised by an independent international organising committee in conjunction with the European Study Group on Molecular Diagnostics and the Society of Clinical Virology. The practical aspects of the meeting are handled by Wens Travel. All parties involved invite you to become part of a tradition.

Preliminary Programme Topics:

- Molecular Diagnostics and Disease Management
- Molecular Diagnostics in Clinical Pathology
- DNA-chip technology
- The Molecular Diagnostics of Antibiotic Resistance
- Molecular Diagnostics in the Developing World
- Automation in Molecular Diagnostics
- Molecular Diagnostics and Food Safety
- Standardization and Quality Control
- Molecular Diagnostics and Animal Health

Students:
Limited funding for travel and attendance of the meeting may become available. Students in need of financial assistance are requested to apply in writing through the Secretariat to the chairman of the Organizing
Committee. A copy of the student card should be enclosed.

Further information

European Meeting on Molecular Diagnostics 1999 c/o Wens Congress B.V.
Brinkzicht 21c
3743 EX Baarn
The Netherlands
Phone: +31-355429333
Fax: +31-355429444
E-mail: molecule@wens.nl
Internet address: http://www.wens.nl/molecule

March 29-31, 2000 - SVEPM; Edinburgh, Scotland

The 2000 Society for Veterinary Epidemiology and Preventive Medicine (SVEPM) conference will be hosted by Dr Mike Thrusfield of the University of Edinburgh, Scotland, UK, and will run from Wednesday 29 March to Friday 31 March 2000. The local conference organiser will be Dr Mike Thrusfield, with assistance from Stuart Reid and Dominic Mellor of the University of Glasgow. The conference will follow the now established format, with workshops, technical demonstrations, spoken papers, and a poster display.

Papers will be considered on any relevant subject, but areas of special interest that have been identified this year are as follows:

- Preventive medicine in practice
- Quality assurance and food safety
- Epidemiology of aquatic disease
- Animal movement the costs, risks and benefits
- Vaccines and vaccination
- Anti-microbial and anthelminitic resistance

The deadline for receipt of abstracts for consideration by the committee is FRIDAY 20 AUGUST 1999. Papers accepted for presentation, must be submitted in full to the proceedings editors, by FRIDAY 7 JANUARY 2000 at the latest.

If you have questions at this time about any other aspect of the conference, please contact:

Andrew Paterson
(Honorary Secretary, SVEPM)

The Veterinary Epidemiology and Economics Research Unit (VEERU),
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August 7-11, 2000 - ISVEE 2000; Breckenridge, Colorado

I would like to inform you that a web site for the 9th International Symposium on Veterinary Epidemiology and Economics (ISVEE) is available. The web site is under construction so Please check this web site regularly for updated information. The site will be continually updated as more details concerning the Symposium are determined. The symposium will be held August 7-11, 2000 at Beaver Run Resort & Conference Center, Breckenridge, Colorado, USA. The address for this web site is:

http://www.cvmbs.colostate.edu/cveadss/isvee.htm

Mo Salman
<msalman@vth.colostate.edu>

POSITIONS AVAILABLE

See the ATVPHPM Web site at http://www.cvm.uiuc.edu/atvphpm/ for the most current listings.

Twelve Postdoctoral and Graduate Research Positions - WTCEID

University of Oxford - Wellcome Trust Centre for the Epidemiology of Infectious Disease (WTCEID)

Twelve postdoctoral and graduate research positions in statistics epidemiology, virology, microbiology, population biology and biomathematics.

The Wellcome Trust Centre for the Epidemiology of Infectious Disease, directed by Professor Roy Anderson FRS, has an international reputation for interdisciplinary
research on the statistics, epidemiology, evolution, and control of infectious agents. The Centre is housed in a new purpose built facility, in the Science Department area of Oxford close to the University Parks, with sophisticated pathogen containment, sequencing and computational facilities. Applications are invited for ten postdoctoral positions and two graduate research assistantships for projects in the following areas:

- Pathogenesis of HIV and the evolution of drug resistance under combination therapy.
- Epidemiology of Dengue virus infection and associated disease.
- Transmission dynamics and epidemiology of scrapie, BSE and new variant CJD.
- Population genetics of drug resistance in the malaria parasite and bacterial infections.
- The use of patient databases in the epidemiological analysis of the burden of infectious disease and the comparison of therapies.
- Theoretical studies of the dynamics and regulation of immunological responses to infectious agents.
- Transmission dynamics and population genetics of lymphatic filariasis.
- Characterisation of strain variation in Campylobacter jejuni (2 positions).
- Population study of Neisseria lactamica in infants and small children.
- Molecular epidemiological studies of malaria transmission (2 positions).

For some of the positions a strong background in statistics and/or applied mathematics is required, while for others a biological training with interests in infectious diseases and epidemiology or molecular biology is appropriate. The positions are funded variously by the Wellcome Trust, MAFF, Meningitis Research Foundation and industry. Further particulars may be obtained from Jane Lillywhite at the address below or from email address: jane.lillywhite@zoo.ox.ac.uk

Applications should be sent to Professor Roy Anderson FRS, Director WTCEID, University of Oxford, South Parks Road, Oxford OX1 3FY. Applicants should enclose a CV, a list of publications and the names plus addresses of 2 referees. Closing date for applications is 7th June 1999.

Please direct all enquiries to <jane.lillywhite@zoo.ox.ac.uk>

The University is an Equal Opportunities Employer

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### Three Positions: Epidemiologist, Biometrician, Modeller - Veterinary Laboratories Agency; Surrey

The VLA is now recruiting scientists to join an expanding team working in the field of veterinary epidemiology. The group aims to use modern methods and technologies to conduct research which will allow us to advise on the control of animal diseases. Applications are invited for the following posts:

#### EPIDEMIOLOGIST

The post holder will advise on the collection and manage the analysis of data obtained from routine notifications of scrapie and present the results of these analyses. This will contribute to the understanding of the epidemiology of scrapie and the planning of a long term strategy for the control of this disease.

Applicants should have a first degree in Veterinary, Medical or Biological sciences and ideally a postgraduate qualification in epidemiology. A knowledge of livestock production methods in the UK and experience in management of research projects would be an advantage. Good written and oral communication skills and the ability to work in a team are essential.

The post is in Pay Band C (Science) - L19,500 to L35,900 per annum; progression is performance related. (Ref:CMW ADP1484)

The closing date for the return of completed applications is 18 June 1999.

#### BIOMETRICIAN

The post holder will contribute to the design of epidemiological projects and analyse data collected, including those collected from routine notification of scrapie cases and specific research projects. These analyses will aid in the understanding of the epidemiology of this condition and provide inputs for mathematical models which will be used to plan long term control policies.

Applicants should have a first degree in mathematics or statistics and postgraduate training in statistics, preferably in the medical or epidemiological field. A knowledge of the use of statistical methods and two years experience of statistical analysis of data are essential. Analysis of data from epidemiological studies, including spatial and temporal analysis would be an advantage as would the use of methods for correlated data.

The post is in Pay Band D (Science) - L16,000 to L27,400 per annum; progression is performance related. (Ref:CMW ADP1473)
The closing date for the return of completed applications is 14 July 1999.

MATHEMATICAL MODELLER
The post holder will finalise the development of a mathematical model which has been designed to represent the recycling of the BSE agent through cattle feed in the UK and use this model to investigate the routes of transmission of BSE.

Applicants should have a first degree in a quantitative subject. Post-graduate training in mathematical biology and data analysis skills would be an advantage together with experience in the production, validation and use of mathematical models. Good written and oral communication skills and the ability to work in a team are essential.

This post is in Pay Band D (Science) - L16,000 to L27,400 per annum; progression is performance related. (Ref:CMW ADP1485).

The closing date for the return of completed applications is 18 June 1999

If you would like further details and an application form please write to Personnel, Veterinary Laboratories Agency, New Haw, Addlestone, Surrey, KT15 3NB, quoting the relevant reference.

VLA is an Equal Opportunities Employer

SUGGESTED READING

Animal Management in Disasters
Author: Sebastian Heath

American Journal of Preventive Medicine Message – Electronic Journal
American Journal of Preventive Medicine
http://www-east.elsevier.com/ajpm/

Aims and Scope
A Journal of the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine

The American Journal of Preventive Medicine is the official journal of the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine. It publishes articles in the areas of prevention research, teaching, practice and policy. Original research is published on interventions aimed at the prevention of chronic and acute disease and the promotion of individual and community health. Of particular emphasis are papers that address the primary and secondary prevention of important clinical, behavioral and public health issues such as injury and violence, infectious disease, women's health, smoking, sedentary behaviors and physical activity, nutrition, diabetes, obesity, and alcohol and drug abuse. Papers also address educational initiatives aimed at improving the ability of health professionals to provide effective clinical prevention and public health services. Papers on health services research pertinent to prevention and public health are also published. The journal also publishes official policy statements from the two co-sponsoring organizations, review articles, media reviews, and editorials. Finally, the journal periodically publishes supplements and special theme issues devoted to areas of current interest to the prevention community. For information on the American College of Preventive Medicine (ACPM) and the Association of Teachers of Preventive Medicine (ATPM), visit their web sites at the following URLs: http://www.acpm.org and http://www.atpm.org.

Full-text available in HTML and PDF.

Audience
Practitioners, Researchers, Teachers, Students and Policy Makers in preventive medicine and public health.

Contact: ajpmwebmaster@elsevier.com