16/1 /2010

The Hon. Senator Fiona Nash M.P.
c/- Ms Trish Carling
Rural and Regional Affairs and Transport References Committee
The Senate
Parliament House
Canberra

Dear Senator,

Please find enclosed a third late submission to the 14th December 2009 Sub-Committee Hearing on the new policy on trading with the 32 countries defined as "controlled risk assessment" for BSE by the OIE.

This third late submission has not been referred to DAFF for comment and advice as was the first late submission, sent to you at the Hearing.

It is felt that the two later additional submissions are more relevant to you, Senator Chris Back, Senator Bill Heffernan and Senator Kerry O'Brien, than the more general first and late submission sent to the Hearing.

The more one reads about these evolving diseases, the more concerns are raised by the new policy.

Professor John Mathews has covered the v CJD area very well.

Kind Regards

Bob Steel

Bob Steel

AN ADDITIONAL SUBMISSION TO THE 14th DECEMBER 2009 SENATE SUB- COMMITTEE HEARING, WITH SUMMARIES ON NEWLY DISCOVERED TYPES OF BSE IN CATTLE, NEW ANIMAL TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES (TSEs) AND INFORMATION ON INTER-SPECIES TRANSMISSION DISCOVERIES SINCE 2007.

TSEs have never ever been detected in skeletal muscle tissues in animal meats .
This fact is being used by the Australian Government to suggest that there is no danger from these TSEs to Australian Agriculture by importation of meat from the 32 countries described as "conditional risk assessment" by the OIE for TSEs, such as B.S.E.
This argument is invalid for the reasons to be seen below.
Unless the source of the these meats can be identified by a comparable system of trace-back mechanisms to the Australian N.L.I.S. **in live animals** which identify cattle from **birth ,this new policy is dangerous to Australian Agriculture and to the Australian Biopharmaceutical industries** .
Even with this N.L.I.S. from birth in place ,cross border or zone crossing may occur and not be recognised, particularly when no transfer of ownership occurs, as in agistments of cattle by an owner.
Live animal identification by a N.L.I.S. is one thing but it is impossible to verify the sources of meats once animals are killed at an abattoir, without being totally reliant on the honesty of importers at overseas abattoirs.
This will require Australian personnel to be at abattoirs to supervise the ante-mortem identification of the live animals by the N.L.I.S. since birth and by competent Australian veterinary inspection at killing, processing and packaging procedures at the overseas abattoir sites. This will be hugely expensive
It is highly dangerous to suggest that this could be done by foreign veterinary and meat inspector staff.
Anyone who has ever visited a processing plant in Australia is fully aware of the contamination possibilities to skeletal muscle tissues by bone spicule fragments, bone marrow smearing on meats and lymphoid nodules and lymphatic tissues contaminating meat, just as much sources of TSEs, as in BSE, as brain and spinal cord.
It is impossible to be sure of the quality of cleanliness from TSEs of butchers' instruments.
The decision by the Australian Government to import meat from TSEs affected countries is unwise and fails to consider the increased risks that this new policy will bring from these rapidly evolving TSE diseases and from Foot and Mouth Disease.

Australia is lucky to be free o fBSE and is ,with New Zealand, the only country in the world free of Scrapie ,the TSE of sheep and goats .

It is free of the devastating and spreading TSE of Canada and the United States ,the chronic wasting diseases of deer and elk. This disease is capable of infecting livestock and predators and scavengers of sick animals in the wild. These scavengers and feral animals have no respect for State borders.

The new policy even ignores the newly discovered science of BSE in cattle of the last 3 years.

Bovine Spongiform Encephalopathy(B.S.E.) is not a stable prion agent in cattle as was previous thought and new variant strains of BSE in cattle have been identified in most European countries, the United States and Japan in the last 3 years.

Pathogenic mutations of the BSE agent have been recognised in the last year.

Heritable transmission of BSE in cattle has been identified in the last year.

Unfortunately there is little research into these startling developments in the science of BSE in cattle in some of the 32 countries with BSE in their own cattle herds.

Thus the risks of BSE being introduced into Australia from the 32 countries classified as " controlled risk assessment" by the OIE are increased by the new scientific discoveries, particularly when a county ignores or is incapable of responding to the new science, because of it's lack of medical technology or even because of it's own self-interested marketing polices.

These marketing polices from these BSE countries may intentionally or unintentionally fail to recognise Australia's unique freedom from all TSEs including BSE in cattle.

Multiple variant strains of BSE in cattle have been identified,such as the L-types and the H-types in Europe and Japan.

Even within the 2 solitary cases reported so far in the USA,marked differences are recognisable between these 2 cattle.

Confirmed cases of BSE in cattle with potentially pathogenic mutation of the Pmp gene was reported in2008.

This indicates the dangers of mutations in BSE in cattle.

The BSE agent had previously been considered to be a stable agent in the classical Mad Cow Disease BSE mould.

The newly discovered or novel and variant BSE strains in cattle have been shown to present altered phenotypic expression to the classical Mad Cow Disease syndromes previously characterising this disease.

Sub-clinical BSE disease in apparently normal BSE cattle has been identified by the TSE "rapid" diagnostic testing in MOST European countries. 7000 new cases of BSE in cattle were detected by the "rapid" test after screening 50 million cattle in Europe.

These 7000 cases of BSE in cattle had not been anticipated nor detected by clinical examination, either by Governmental veterinary surgeons or by owners of these diseased BSE cattle.

These facts should stop the Australian Government from proceeding with it's new policy for importing beef from most of the 32 "controlled risk assessment" countries.

If the Australian Government proceeds with the new policy for BSE AUSTRALIAN AUTHORITIES MUST REQUIRE ALL LIVE CATTLE, WHOSE MEAT IS FOR IMPORTATION INTO AUSTRALIA,TO BE "RAPID" TESTED FOR TSEs, INCLUDING BSE, BEFORE AND AT THE TIME OF SLAUGHTER AND BEFORE THEIR MEAT IS PROCESSED FOR IMPORT INTO AUSTRALIA .

Many of these 32 countries have not undertaken research or any "rapid" testing for these newly discovered BSE variant strains.

BSE cases in cattle with these BSE variant strains have prolonged incubation periods before clinical expression occurs

For example a cow, infected with a newly recognised strain of BSE developed classical Mad Cow Disease at 7 years of age.

In 2008 ,evidence suggesting that BSE in cattle may be transmitted genetically has become available.

This is the first indication that BSE in cattle has all 3 ecologic forms of TSEs, (spontaneous, hereditary and infectious) present.

BSE has now been found naturally in other species of animals.

BSE agents have been found secreted in milk of cattle with sub-clinical BSE infections and in sheep infected with BSE.

There are now reasons to believe that BSE in cattle arises from different origins, at least in some BSE cases in cattle.

Similarly Scrapie is found in milk of sub-clinical diseased sheep with Scrapie.

Transmission experiments with the BSE agent of cattle in genetically modified mice have revealed ever increasing numbers of new TSE forms, some of which are described as "Aypical Scrapie".

Ever increasing associations between these newly discovered TSEs of small ruminants and the BSE agent and it's variant strains have been discovered in the last 2 years.

Significantly ,atypical cattle isolates of BSE—the BSE (L-type), in transmission experiments were changed and acquired strain features similar to the classical BSE agent when propagated in mice expressing SHEEP prions. Furthermore, in 2009, chronic wasting disease (CWD) prions in elk and deer of Northern America and Canada have been found to transmit directly to sheep in transgenic mice .

However prions from BSE cattle did not transmit directly in transgenic mice expressing the elk (Tg Elk PrP) gene but did in fact transmit after being passaged through SHEEP.

These are very important findings in TSE inter-species transmission experiments involving multiple animal species .

These findings demonstrate the serious dangers to Australia from trading with countries affected by TSEs such as Scrapie, CWD and BSE in all their newly discovered forms.

In the world's largest ever genetic selection undertaking, the U.K. Government is using PrP genetics to find those sheep which have the greatest resistance to Scrapie.

It is possible that the same approach to BSE may be necessary to be developed in Europe in the future.

Attempts to eradicate CWD have failed and it is spreading rapidly in 14 States of the USA and 2 provinces of Canada despite expensive and exhaustive programs .

3 of 13 cattle have been infected with CWD, following intra-cerebral inoculation but these experiments are not completed .
The reasons for this are simple, as inter -species incubation periods are variable and often prolonged because of species inherent genetic resilience.

The conversion of human prion protein by CWD associated rogue prions has been demonstrated in in-vitro cell free experiment.

The conversion of human PrPC by Scapie and BSE PrP-res have been shown to be similar to the conversion of human prion protein by Cervid PrPcwd associated prions.

These are incredibly important findings in themselves and bring these 3 TSEs together as very real increasing dangers to human health in the future.

Dr .Elizabeth Williams states that there has never been any direct comparisons between CWD and existing North American Scrapie strains.
Thus dangers to human health may be magnified by further discoveries of more new atypical Scrapie strains and also more new atypical CWD strains rather than just from the naturally occurring strains of both of these TSEs.

There are many of these North American Scrapie strains completely unidentified at yet.

Dr.William's statement is proof for all of us to realise how little we know about transmission of TSEs between species of animals and man.

Experimental transmission of CWD in goats by intracerebral transmission was found to have a prolonged incubation in contrast to shorter incubation that would have been expected in Scrapie strains.

Of interest is that it is unlikely that oral infection of cattle occurs with the so-called naturally occurring Scrapie infective agent (PrPSC) as this agent is degraded by the cattle gastrointestinal flora. However oral infection via traumatised surfaces anterior to the stomachs is possible, as is percutaneous infection.
BSE infection in sheep occurs following their oral dosage with BSE material and these sheep show signs of B.S.E. infection in their blood. This is the basis for testing for safety of human blood products to be used for transfusion
In England there are an estimated 5000-10000 new cases of Scrapie each year despite the huge amount of money spent each year by the British Government .

Scrapie like CWD is highly infectious with almost eternal survival in the environment.

For example Scrapie containing material when rubbed on broken skin of mice, has the same efficiency in inoculation as if it had been injected by intravenous or subcutaneous injections.

Conclusion

With the emerging knowledge on variant and classical strains of BSE in cattle, with that of newly discovered TSEs and with their inter-species transmissions, the new policy to allow importation from such TSEs affected countries must not proceed.

The Australian Biopharmaceutical Industries have enjoyed great success in international markets because of the demands for products guaranteed to be derived from all livestock free from TSEs.
These great advantages will be lost if this new policy is adopted.
Australian Biopharmaceutical companies like CSL should be warned of the inherent risks to their businesses if this new policy is adopted..

AUSTRALIAN AUTHORITIES MUST REQUIRE ALL LIVE CATTLE, WHOSE MEAT IS FOR IMPORTATION INTO AUSTRALIA,TO BE "RAPID" TESTED FOR TSEs, INCLUDING BSE, BEFORE AND AT THE TIME OF SLAUGHTER AND BEFORE THEIR MEAT IS PROCESSED FOR IMPORT INTO AUSTRALIA, IF THIS NEW POLICY IS IMPLEMENTED BY THE GOVERNMENT.

This new policy ignores the advances in science as described above and will cost Australia it's unique position of freedom of all TSEs in Australia and increases our risks of introducing Foot and Mouth Disease by trading with countries like Brazil.

Robert Steel B.V.Sc.M.R.C.V.S.
Honorary Veterinary Surgeon N.S.W.

2/1 /2010

The Hon. Senator Bill Heffernan
Ms Jane Beer and Ms Trish Carling
Rural and Regional Affairs and Transport References Committee
The Senate
Parliament House
Canberra

Dear Senator, Jane and Trish,

Please find enclosed an additional submission to the 14th December 2009 Sub-Committee Hearing on the new policy on trading with the 32 countries defined as "controlled risk assessment" for BSE by the OIE.

Reading over the Christmas holiday period on developments in the last 2 years about new and startlingly knowledge on BSE and TSEs and their inter-species transmissions, it is understood why the Government scientific advisers have provided so little information to the Hearing and before that, to the rural community itself.

Rather than science getting on top of BSE in cattle, recent research and the "rapid" testing results of 50 million European cattle have revealed greater dangers to Australia's animal industries and Biopharmaceutical industries than one was aware of.

This new trading policy ignores these recent discoveries of BSE in cattle.

It can only be seen as a policy engineered by traders who do not have at heart, Australia's unique freedom from all TSEs including BSE.

It is more seriously threatening to human health and the meat and biopharmaceutical industries than realised in December.

This additional submission has not been referred to DAFF for comment and advice as was the first and late submission sent to you at the Hearing.

It is felt that this additional submission enclosed is more relevant to you, Senator Fiona Nash, Senator Chris Back and Senator Kerry O'Brien, than the more general first and late submission sent to the Hearing.

Kind Regards
Bob Steel

Bob Steel

A FURTHER LATE SUBMISSION TO THE 14th DECEMBER 2009 SENATE SUB- COMMITTEE HEARING, DEALING WITH NEWLY DISCOVERED RISKS FROM IMPORTING SKELETAL MUSCLE AND FAT TISSUES,AS MEATS AND MEAT PRODUCTS, INTO AUSTRALIA AND INFORMATION ON THE RAPID TESTS FOR TSEs.

TSEs HAD never ever been detected in skeletal muscle tissues and in fat, in animal meats, but it has now been identified to occur in deer with chronic wasting disease (CWD) ,the rapidly spreading TSE of USA and Canada .

The Australian Government can no longer suggest that there is no danger from the importation into Australia from uncontaminated skeletal muscle tissues , such as " meat" and " meat products" (what ever this means?), from TSEs rogue prions, from the 32 countries described as "conditional risk assessment" by the OIE for TSEs, such as B.S.E.

This detection of rogue prions of CWD in skeletal meats and fats in sub-clinically affected CWD deer, is an important first ever detection, in these tissues for TSEs.

Furthermore, faecal excretion of CWD rogue prions has been identified from sub-clinically affected CWD deer and this finding has further explained the incredible infectivity of this TSE and it's rapid spread within the North American countries.

Bovine Spongiform Encephalopathy(B.S.E.) multiple strains have now been identified to have all 3 ecological properties of other TSEs ---
ie to have spontaneous, heritable and infective transmissions.
These modes of transmission are varied between the variant and multiple BSE strains recently identified.
Within cattles' genome, molecular differences are now identified as expressions of genetic sensitivities to BSE, and have been defined to explain the variable intra-species' genetic resistance to infection .
This technology is more advanced in sheep where the largest genetic selection undertaking, ever in the world, is using PrP genetics to find those sheep which have the greatest resistance to Scrapie.
It is possible that the same approach for BSE in all ruminants will be necessary, firstly in Europe in the future.
New variant strains of BSE in cattle have been identified in most European countries, the United States and Japan in the last 3 years .
Some of these BSE strains are more virulent, with varying incubation periods, in natural infections and when induced experimentally in other animals.
Natural BSE infection occurs through ingestion of milk in BSE cattle and in other animals with BSE such as sheep and goats.

Similarly, Scrapie is found in milk of sub-clinical diseased sheep and goats with Scrapie.

Milk products from sub-clinically and normal looking BSE infected cattle ,sheep and goats must therefore represent **an unquantified public health risk.**
Direct BSE infection by direct contact, as per licking each other. has not been identified as yet but any farmer will be aware of these intimate contacts which occur between livestock of the same species.

Sub-clinical BSE disease in apparently normal BSE cattle has been identified by the TSE "rapid" diagnostic testing in MOST European countries.
These "rapid" TSE diagnostic tests are only approved (by the European Commission, the Panel on Biological Hazards), at post-mortem testing and are only for BSE ,Scrapie and Atypical Scrapie strains.

Rapid tests take a minimum of 24 hours for completion.
There are no approved " rapid" tests for live animals or for CWD or any other of the multiple number of emerging TSEs.
7000 new cases of BSE in cattle were detected by these "rapid" test after the screening of 50 million cattle in Europe.

These new 7000 cases of BSE in cattle had not been anticipated nor detected by clinical examination, either by Governmental veterinary surgeons or by owners of these diseased BSE cattle in Europe.

In December 2009, the Community Reference Laboratory of the European Commission released a vital first report--- "Scientific Opinion on Analytical Sensitivity of Approved TSE Rapid Tests".
As a result of this first time ever comparative analysis, some approved rapid tests "cannot be recommended for the monitoring of BSE in cattle and the TSE in small ruminants in the EU".
Thus there is an implicit admission that the number of sub-clinical, apparently normal cattle, sheep and goats infected with BSE may be unreported in the EU.
If the Australian Government proceeds with the new policy for BSE AUSTRALIAN AUTHORITIES MUST REQUIRE ALL LIVE CATTLE, WHOSE MEAT IS FOR IMPORTATION INTO AUSTRALIA,TO BE "RAPID" TESTED FOR TSEs, INCLUDING BSE, BEFORE AND AT THE TIME OF SLAUGHTER AND BEFORE THEIR MEAT IS PROCESSED FOR IMPORT INTO AUSTRALIA BY AN APPROVED RAPID TEST WHICH MEETS THE FUTURE LEGISLATIVE 2010 EU CRITERIONS, FOR SENSITIVITY FOR DETECTION OF BSE AND TSEs.
Please note that there are no available rapid tests of the TSE, CWD, for beef and beef products coming from the USA or Canada.
Many of these 32 countries have NOT undertaken any "rapid" testing of any clinically normal or sub-clinical diseased BSE cases in bovines from either the classical strain BSE cases or the newly discovered BSE variant strains.

Please refer to Professor John Mathew's submission to the Australian Government, Fig I chart 85.
The "active surveillance" group represent those cases detected in normal animals with BSE ,only after rapid TSE testing in Europe FROM 200I.

This is an indication for Australian Authorities, by analogy, of the real extent and level of BSE infection in those countries which have never been tested for BSE and TSEs or have just started testing .

Thus there is the implicit admission that the number of BSE cases notified by these countries to the OIE may not in any way represent the number of BSE cases actually present in these countries, which do not test or have just commenced testing.
The number of BSE cases ,by analogy with Europe via Fig I chart 85 in Professor Mathew's submission, would be grossly unreported and may be comparable to the number disclosed by these tests in Europe.

BSE cases in cattle with the BSE variant strains have prolonged incubation periods before clinical expression occurs.

Of major concerns to Australian Agriculture are the following facts.

Atypical cattle isolates of BSE— for example ,the BSE (L-type), in transmission experiments, were changed and acquired strain features similar to the classical BSE agent when propagated in mice expressing SHEEP prions.

Furthermore, in 2009, chronic wasting disease (CWD) prions in elk and deer of Northern America and Canada have been found to transmit directly to sheep in transgenic mice .

However prions from BSE cattle did not transmit directly in transgenic mice expressing the elk (Tg Elk PrP) gene but DID IN FACT transmit after being passaged through SHEEP.

Surely these facts are warning signs of the possible dangers to our sheep industries in the future 50 years from inter –species transmissions!!

The conversion of human prion protein by CWD associated rogue prions has been demonstrated in-vitro cell free experiment.

The conversion of human PrPC by Scapie and BSE PrP-res have been shown to be similar to the conversion of human prion protein by Cervid PrPcwd associated prions.

These are incredibly important findings in themselves and bring these 3 TSEs together as very real increasing dangers to human health in the future.

These are very important findings in TSE inter-species transmission experiments and demonstrate the serious dangers to Australia from trading with countries affected by TSEs such as Scrapie, CWD and BSE in all their newly discovered forms.

Attempts to eradicate CWD have failed and it is spreading rapidly in 14 States of the USA and 2 provinces of Canada despite expensive and exhaustive programs .

3 of 13 cattle have been infected with CWD, following intra-cerebral inoculation but these experiments are not completed .

In England there are an estimated 5000-10000 new cases of Scrapie each year despite the huge amount of money spent each year by the British Government .

Scrapie like CWD is highly infectious with almost eternal survival in the environment.

For example Scrapie containing material when rubbed on broken skin of mice, has the same efficiency in inoculation as if it had been injected by intravenous or subcutaneous injections.

Conclusion

Professor John Mathew's submission to the Australian Government "Review of Scientific Evidence to Inform Australian Policy on Transmissible Spongiform Encephalopathies" is regarded as the scientific basis for the new policy to allow importation of meat and meat products(?) from the 32 countries ,classified by OIE as "controlled risk assessment".

Reading this document is disturbing as many of the conclusions presented need to examined for their validity even in the light of present knowledge let alone in the shade of emerging knowledge which is to be confirmed into absolute fact..

Surely new unconfirmed finding with their suspicions, which are now just but theory, must be included in consideration and be anticipated as possible facts, even by the expert?

For example the theory that BSE has evolved from Scrapie by some mutation needs the proof of the future, to become fact but there is suggestive and emerging information .

Many facts of science which imply great risks to Australia, ,particularly in the area of risks to animal health ,are not mentioned at all, let alone quantified by Professor Mathews..

Australian sheep industries have freedom from TSEs.

The possible future evolutions of BSE and Scrapie infections in sheep and goats are not explored sufficiently in the light of new knowledge on inter-species transmissions of these diseases between these species and cattle.

Even in the most elementary area of history and universally accepted TSE science, there are disturbing and gross errors of proven facts in this submission.

For example, it is beyond belief that this document states on,page 27 Table I "Important TSEs and their characteristics" under the column of "Usual transmission" :-

Scapie –usual transmission— ""Spontaneous" possibly by milk"

CWD (deer and elk)---usual transmission "Spontaneous".

This indicates to the reader that Professor Mathews believes that Scrapie and CWD occur spontaneously or sporadically and that is their usual mode of transmission.

In fact Scrapie and CWD are highly infectious TSEs with almost eternal survival properties in the environment, outside the host animals.

These statements are beyond belief from a well respected Medical Statistician and from someone who has worked on "kuru", the human TSE, in the 1970s.

The conclusions that Professor John Mathew has drawn and the absence of vital research findings, are however the main concerns.

It is suggested that his submission should be referred to some of the great workers on these TSE diseases

It is suggested that reference be sought from the Nobel Laureate winner of 1997(for his pioneering work on prions), Stanley B.Prusiner,MD , or from his associates at the Prusiner Lab. The Institute of Neurodegenerative Diseases The University of California San Francisco CA 94 143, USA tel---(415) 476 -9000.

His latest work seen was on CWD itself and you are referred to Jennifer O'Brien who was the internet source as he is the lead author. jobrien@pubaff.ucef.edu 415 476 2557. No contact has been made to her.

There is strong belief that there are people of great quality who would like to help Australia consider the risks of the new BSE policy.

Any errors in Australia's decision, now, will not be noticed for 10-40 years , quite unlike the immediacy of F&M disease outbreak.

Every month, new information becomes available which seems to increase the risks to animal health in Australia. from this new policy

This new policy ignores the advances in science and is supported by an expert's submission which needs expert appraisal to examine the validity of it's conclusions.

The new policy will cost Australia it's unique position of freedom from, all TSEs and increases our risks of introducing Foot and Mouth Disease by trading with countries like Brazil.

Robert Steel

Robert Steel B.V.Sc. M.R.C.V.S.
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