

NSW Agriculture & Rural Lands Protection Boards

ANIMAL HEALTH SURVEILLANCE REPORT

May - June 1994

Contributions to this Report are warmly welcomed.

Please submit them as Wordperfect documents on disk or to the COMMON area on the Agnet computer, DEEP.

Livestock and Pastoral Conditions

With the continuation of dry weather, particularly in the north and central regions, 45% of NSW was declared drought affected in July. Severe shortages of feed will lead to undernutrition, plant poisonings, incorrect supplementary feeding and internal parasitism. Ketotic diseases will also be common as ewes and cows approach lambing and calving in poor nutritional status.

Investigations of Suspected Exotic Diseases

Biting Fox in Camp

Campers in the Kangaroo Valley near Nowra were alarmed by a fox that attacked several campers over two days. Investigations relieved concerns that the animal may have been rabid. The animal was a healthy adolescent male fox that had entered tents at night to steal food and only attacked after first being provoked by the campers. Examinations at AAHL at Geelong were negative for rabies. It appears that this type of behaviour, nearly always at night, is becoming more common in foxes in contact with people. (*Contact: T Ross, Menangle, 046 293 312 or Keith Hart, Camden, 046 559 165*)

Nervous cow

Bovine spongiform encephalopathy (BSE) was suspected by the AQIS veterinarian at Lismore abattoir in an adult Friesian cow displaying ataxia and hypermetria. The whole head was submitted to RVL Wollongbar and BSE was excluded by histopathological examination, which also detected retinal detachment and diffuse cataract in the left eye. Partial blindness and the excitement of being moved around in the abattoir yards apparently led to the suspicious clinical picture. (*Contact: John Boulton, RVL Wollongbar, 066 240 261*)

Recognition of Screw Worm Fly

New diagnostic kits, prepared by CSIRO Entomology and the DPIE Foreign Diseases Unit, have been provided to NSW Agriculture entomologists at Menangle, Rydalmere and Wollongbar. The kits contain pinned adults and preserved larvae of Old and New World SWF and several other related species. The kits will greatly assist with the investigation of suspected cases of SWF myiasis. (Contact Peter Johnson, EMAI Menangle, 046 293376)

Significant Disease Events

Investigating new salmonella

Investigations are continuing into *S abortus ovis*, which was isolated from two children on a property near Mungindi. The sheep flock on the property is under quarantine to assess whether or not it is infected. RVL Menangle has developed a more specific serum agglutination test (SAT) using flagella antigen from the Mungindi isolate prepared by IMVS Adelaide. This was compared with the Group B *S typhimurium* whole cell SAT system routinely available. Initial serological testing has given equivocal results but sheep will be retested during the next few months. The original isolate was inoculated into pregnant ewes under secure conditions at AAHL and caused endometritis and abortions. Salmonellae were easily isolated from aborted foetuses and from the ewes' reproductive tracts by routine culture methods and these have been typed at IMVS Adelaide as *S abortus ovis*.

Management on the property and further serological and reproductive monitoring is being complicated by the worsening drought situation and funding is being sought from industry and from the State and Commonwealth governments to maintain the ewes on the property.

Investigations of ovine abortions and stillbirth should include the submission of chilled placenta and foetal tissues, and sera from cases and from in-contact ewes to regional laboratories wherever possible. (Contact: David Kennedy, Orange, 063 913 626).

Venereal Infections in Cattle

After more than a decade with no confirmed reports of infection in cattle in NSW, *Tritrichomonas fetus* has been confirmed in a large bull herd in the Nyngan district. The breeding herd had only achieved calving rates of 75-80% over many years. Initially 3 of 6 introduced "virgin" bulls, which with one older bull were mated to heifers, were found to be infected. Overall 30% of 47 bulls tested in the herd were confirmed to be infected. A management program has been developed and movements of breeding stock off the property are being traced. (Contact: David Counsell, Nyngan, 068 321 008)

Further infections with venereal campylobacteriosis or "vibriosis" were detected by the vaginal mucus ELISA during the period. *C fetus* subsp *venerealis* was also cultured from a bull that had been put over a mob of ELISA positive heifers at Blayney, in which only 40% were detected in-calf. Campylobacteriosis was also implicated in a low pregnancy rate of 75% in 200 heifers with vaginal discharge, involuting uteri and positive vaginal mucus ELISA's in 8 of 10 empty heifers.

Buffalo Fly

A field report of buffalo fly returning to a bull at Clybucca near Kempsey within 14 days of treatment with flumethrin (Bayticol), suggests the likelihood of resistant flies further south than was measured in the recent MRC funded resistance mapping project. This has potential

implications for residues due to increased use of chemicals to achieve fly control. Plans for an advisory program utilising concepts for Integrated Pest Management are in the process of development. (Contact: Peter Harper, Grafton, 066 420 467)

Respiratory Diseases

Pneumonic pasteurellosis and infectious bovine rhinotracheitis have been frequently reported from severe respiratory problems in recent months. *P haemolytica* contributed to an outbreak of acute respiratory disease in 42 of 100 six-month-old calves trucked to the central west from the north coast. About 100 of 200 ten-month-old calves in a feedlot at Trangie were also affected with upper respiratory disease. *P multocida* and *Haemophilus somnus* caused pneumonia in 150 of 500 weaned six-month-old dairy calves. Ten of the calves died.

Unusual outbreaks of severe pasteurellosis have also occurred in grazing adult cattle in south eastern NSW. In a south coast herd, 4 adults and 3 calves died in a mob of 100 beef cows and calves. IBR seroconversions were detected and *P multocida* isolated from cases. Whole herd treatment with tetracycline controlled the outbreak. In a Goulburn herd, 8 adult Red Polls died in 2 weeks. Autopsy of the one fresh carcass available again revealed a pasteurella pneumonia with IBR as the probable underlying cause. Both herds were grazed on a short term rotation. (Contact: Tim Jessep, Goulburn, 048 230 744)

P multocida was also consistently isolated from deaths of over 40 Fallow deer on an Orange property that had suffered similar losses five years ago.

Earlier in the year, a south coast dairy herd suffered an upper respiratory problem accompanied by a 40% drop in milk production. The initial cases were in recently introduced cows but over three months about 60% of the herd showed clinical signs of IBR and several cows remained chronic "snorers". IBR virus was isolated from 3 cases. The disease also occurred in the owner's second dairy herd. Over two weeks, seven abortions and stillbirths occurred but none were investigated. Australian strains of IBR virus are not known to be abortigenic. (Contact: Steve Jagoe, Bega, 064 921 283).

Preliminary safety and efficacy trials using an experimental attenuated live IBR vaccine developed at ARI Yeerongpilly in Queensland have commenced. Cattle were vaccinated in isolation at Griffith and, following monitoring of the clinical response, were placed in a commercial feedlot environment. A larger safety assessment is being undertaken in a feedlot.

Unusual Nervous Problem in Calves

A congenital nervous syndrome has recently been identified in about 10% of calves on three properties over a wide area in the Bourke-Wanaaring area. The hereford and hereford-cross calves were born between November and April from dams that grazed flooded or channel country during pregnancy. Cases are in good condition but typically lean to one side, have short strides, hop if pushed and fall easily. A survey of cattle producers in the area is being undertaken to assess the incidence of the problem and a small group of cases is being intensively investigated at RVL Orange. (Contact: Eric Davis, Bourke, 068 722 046 or Chris Bourke, Orange, 063 913 873).

Progress with Johne's Disease in Cattle

The AHC Working Party on JD held its second meeting to refine the National JD Market Assurance Program for the cattle industry. The revised plan for a national voluntary program to assign infection statuses, such as "Infected" and "Tested Negative", on the basis of herds'

histories and progress with testing, will be presented to AHC for endorsement in August.

The potential impact that JD could have on trade was discussed at Wagga Wagga recently with coordinators of the Dairy-Beef project. This project has been developed to source dairy steers for feedlots in south eastern Australia. Unfortunately, Friesian steers that had been assembled for the first trial in NSW had originated from an infected dairy herd. Neither the grow-out property nor the feedlot that were to participate in the trial would accept the cattle and the trial had to be abandoned. (*Contact: Ian Simpson, Orange, 063 913 748*).

Meanwhile, 5 new herds on the north coast were confirmed as infected by post-mortem investigations during the past two months. Cases have also been suspected, on the basis of clinical signs or serological reactions, in five other herds. Concern is increasing amongst beef producers in the region as more infected beef herds are detected.

ELISA reactors have also been encountered in agisted Queensland cattle being tested for JD before returning to that State. No infection has been confirmed by follow-up and the balance of the mobs have been allowed to return to Queensland. The specificity of the ELISA in these cattle has been approximately 99% (ie false positive rate of 1%).

Disease Surveys and Studies

National Arbovirus Monitoring Program 93/94

The information from this program will be used to support livestock exports, to predict occurrence of disease in local livestock populations and to alert to the entry of exotic vector-borne viruses. The program will be funded by the States, Commonwealth and sheep and cattle industries. The last sampling for arbovirus monitoring in NSW for this season is underway. Although testing has not been carried out for some arboviruses, the main findings so far are the extensive transmission of both bluetongue and bovine ephemeral fever viruses. The attached tables summarise the main findings.

Bluetongue virus transmission appeared to start on the mid north coast at Coffs Harbour very early in the season and spread mainly southwards. It eventually reached Camden, where there were seroconversions in early June, consistent with infection during May. A prevalence of bluetongue antibody of 63% (14/22) was found in sentinel sheep at Gloucester at the end of the season, but as in previous bluetongue years, there were no reports of clinical disease. All but one of these sheep also seroconverted to akabane virus.

Ephemeral fever virus transmission commenced in the Hunter and Manning valleys and on the far North Coast. The disease was particularly severe in sentinel heifers at Paterson in the Hunter valley with 9/10 sentinels very sick and all seroconverting within 1 month. BEF infection was also detected in sentinels well up the Hunter Valley beyond Scone and at Dubbo. Clinical BEF also occurred in north west NSW this year.

There was a lower incidence of akabane infection than usual and spread occurred later in the season. (*Contact: Peter Kirkland, Menangle, 046 293 333*)

Vector Research. Dr Alan Bishop and his group at Gosford continue to make outstanding progress in the study of the ecology of the main vector of bluetongue and akabane virus in NSW, the biting midge, *C. brevitarsis*, and in the development of a model to predict its seasonal distribution and over-wintering capacity. They will soon complete the exhausting task of identifying insects in light trap collections from several sites in NSW endemic area. (*Contact: Alan Bishop, Gosford, 043 481 900*)

North Coast External Parasite Survey

The report of a survey of 156 north coast cattle producers, undertaken in 1993 to assess control measures for buffalo fly and paralysis tick, has just been published. The interviews, conducted by district veterinarians and animal health inspectors, confirmed widespread concern about these pests. Most producers treated cattle for one or more external parasites. All producers surveyed in the Casino and Tweed-Lismore districts treated for buffalo fly by a variety of methods and, throughout the region, 44% treated for paralysis tick. The survey highlighted the need for strategic control programs for these pests. (Contact: Sally Spence, Wollongbar, 066 240 214 or Peter Harper, Grafton, 066 420 467)

Health Problems in the Alpaca Industry

There are approximately 4,000 alpaca in Australia, spread amongst 600 owners. RVL Menangle has received 120 submissions for alpacas since 1991. These have included 23 relating to Johnes disease testing, 14 for commercial testing and 7 for faecal egg counts. JD tests were conducted on primary and secondary contacts with an infected group in Victoria. The remaining 77 cases concerned other disease investigations and the range of disease conditions identified are summarised below.

Disease findings for alpaca cases January 1991 – March 1994, RVL Menangle.

Sporidesmin toxicity	10
Enterotoxaemia	4
Salmonellosis/bacterial enteritis & septicaemia	6
Aspiration pneumonia/anaesthetic death	4
Suspected selenium deficiency	3*
Suspected copper deficiency	2*
Hepatic fibrosis	1
Pyrrrolizidine alkaloidosis	1
Cachexia/hepatic degeneration	1
Pasteurella pneumonia	1
Lipid inhalation pneumonia	1
Dermatophilosis/staphylococcosis	1
Bush tick (<i>H. longicornis</i>)	1
Tapeworm (<i>Monezia expansa</i>)	1
Strongylosis	1
Chronic nephritis & gastric ulceration	1
Perforated bowel and metastatic mineralisation	1
Listeriosis	1
Lymphoid neoplasia	1
Post-caesarean septicaemia	1
Leptospiral abortion	1
Adult intersex	1

(* Based on normal values in cattle and sheep; normal ranges for alpacas not established.)

It appears that alpacas are very susceptible to facial eczema and other liver toxins, enterotoxaemia, bacterial enteritis/septicaemia and aspiration pneumonia. Their selenium and copper status requires further investigation. In addition, there were several presenting problems where no aetiological diagnosis was reached including abortion and stillbirth (4 cases), perinatal deaths (2), infertility (3), sudden death (2), chronic bloat (1), colic (1),

scouring and death (1), enteritis (2), suspect enterotoxaemia (2), lameness (1), illthrift (1), osteomyelitis of the mandible (1), mineral deficiency (1) and muzzle scabs (2). (Contact: Tony Ross, Menangle, 046 293 312)

Developments in Disease Recording and Reporting

Labsys

Phase 1 of the development and implementation of *Labsys* is drawing to a close with the system installed in all RVL's. One of the few tasks remaining in this first phase is the development of epidemiological reporting formats to allow annual reporting to OIE, quarterly reporting to the National Animal Health Information System and *ad hoc* disease enquiries by official staff (Contact: Don Jones, Menangle, 046 293 333)

Fieldvet

A joint workshop for staff in SFVO's Grafton and Gunnedah areas in the use of *Fieldvet* and *Epi Info 6* was held at Glen Innes. The workshop featured DV Tamworth Evan Sergeant's revision of the field disease recording system to be trialled in the Gunnedah area for three months before statewide release. District Veterinarians and most of their office secretaries attended. As well as the formal tuition, the day was also an opportunity to compare how things are done in various Board offices. *Epi Info* version 6 is still not commercially available but orders have been placed and copies are expected next month.

Chris Dent and John Evers, DV's at Carcoar and Young respectively have installed *Fieldvet* at their offices in preparation for moving onto the improved system later in the year.

Laurie Denholm, VO Special Projects in Orange, is auditing the 1993 *Fieldvet* database to assess data accuracy and quality.

Disease Mapping

Tamworth RLPB is currently developing a geographic information system for the representation of property based data available within Board records. The system is based on the mapping programs *Epi Map* and *Map Info*, and will be integrated with *Fieldvet* and the Board's Noxious Animal Information System, both in *Epi Info*, as well as the Boards rating system.

Three main types can be produced by the system.

1. Point maps, displaying a point coded by colour and shape at a property location to identify a particular incident, for example a disease event.
2. Property boundary maps, with variations in property shading according to the status of that property for a particular event.
3. Locality based maps, with the Board divided into a number of geographic localities which can be shaded according to the average value of a particular variable.

Anticipated uses for the GIS within the Tamworth district include the mapping of livestock numbers and noxious animal distribution and statuses, mapping of carrying capacities to assist in the investigation and rectification of anomalies and mapping animal health problems, such as Johne's disease, leptospirosis and mineral deficiencies. (Contact: Evan Sergeant, Tamworth, 067 662 384)

Western NSW Developments

A report has been prepared for Wanaaring Board on lice prevalence and control, based on long term records maintained by the Ranger. Long term records for Wilcannia will also be reviewed. These 760 records include details of chemicals used and may help determine the effectiveness of certain chemicals. Several Western Boards have recently purchased or are intending to purchase computing equipment. Computer use will bring considerable savings in time in handling rate notices, and free Rangers of a certain amount of office work. (Contact: Greg Curran, Cobar, 068 362 108)

Getting Information on the Occurrence of Animal Diseases

This surveillance report can only convey a very limited amount of information about the occurrence and distribution of livestock diseases in NSW. If you would like more specific information about diseases occurring in your part of the State, contact your local RLPB District Veterinarian or departmental Senior Field Veterinary Officer or Regional Veterinary Laboratory. For statewide information contact David Kennedy.

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NEW SOUTH WALES SENTINEL HERD RESULTS 1993-94.

EPIHEMERAL FEVER VIRUS VNT.

LOCATION	O/N	DEC	JAN	FEB	MAR	APR	MAY	JUN
LISMORE	0	0	0	4	4	5	5	5
CASINO	0	0	0	1	1	3	3	
GRAFTON	NS	0	0	0	0	NS	2	2
COFFS HARBOUR	0	NS	0	0	4	10		
DORRIGO	NS	0	0	0	0	NS	0	0
KEMPSEY	0	0	0		0	0	2	4/11
TAREE	0	0	0	0	0	1/8	2/9	2/9
GLOUCESTER	0	0	0	0	3/9	4/9	4/9	4/10
PATERSON	NS	0	0	2	10	10	10	
SINGLETON	0	NS	0	0	2	5	2	
SCONE	0	0	0	0	1/13	3/13	4/12	
CAMDEN	0	NS	0	0	0	0	0	0
NOWRA	NS	0	0	0	0	0	0	
BODALLA	NS		NS	0	0	0	0	
BEGA	NS	0	NS		0	0	0	
MUDGEES	NS	0	0	0	0	0	0	
TAMWORTH	NS	NS	0	1	0	0	0	

NB: DUBBO 1/10 +ve in May 94;

OTHER NEGATIVE LOCATIONS: INVERELL, MOREE, BOURKE, DUBBO, WAGGA, YANCO, WENTWORTH.

KEY: * No of Positives/ No Sampled.

NS= Not Sampled

NEW SOUTH WALES SENTINEL HERD RESULTS 1993-94.

AKABANE VIRUS VNT.

LOCATION ^a	O/N	DEC	JAN	FEB	MAR	APR	MAY	JUN
LISMORE	0	0	0	6	5	4	6	6
CASINO	0	0	0	0	0	0	3	
GRAFTON	NS	0	0	1	27	NS	3	3
COFFS HARBOUR	0	NS	0	8	9	7		
DORRIGO	NS	0	0	1	2/6	NS	2	3
KEMPSEY	0	0	0		0	5/11	4/11	6/11
TAREE	0	0	0	0	1	0	5/9	8/9
GLOUCESTER	0	0	0	0	0	0	2/9	
PATERSON	NS	0	0	1	0	8	10	10
SINGLETON	0	NS	0	1	0	7	7	
SCONE	0	0	0	0	0	3/13	8/12	
CAMDEN	0	NS	0	0	0	0	9	
NOWRA	NS	0	0	0	0	0	0	
BODALLA	NS	0	NS	0	0	0	0	
BEGA	NS		NS		0	0	0	
MUDGEES	NS	0	0	1	1	0	0	
TAMWORTH	NS	NS	0	0	0	0	0	

OTHER NEGATIVE LOCATIONS: INVERELL, MOREE, BOURKE, DUBBO, WAGGA, YANCO, WENTWORTH.

KEY: * No of Positives/ No Sampled.

NS= Not Sampled.

NEW SOUTH WALES SENTINEL HERD RESULTS 1993-94.

BLUETONGUE VIRUS eELISA.

LOCATION	O/N	DEC	JAN	FEB	MAR	APR	MAY	JUN
LISMORE	0	0	0	0	0	0	0	1
CASINO	0	0	0	0	0	0	0	0
GRAFTON	NS	0	0	0	0	NS	0	0
COFFS HARBOUR	0	NS	10	10	10	10		
DORRIGO	NS	0	0	0	1/6	NS	2	3
KEMPSEY	0	0	0	1	5	10/12	9	9
TAREE	0	0	0	0	0	3/8		5/9
GLOUCESTER	0	0	0	1	4	10	9/9	10
PATERSON	NS	0	0	0	0	6	10	10
SINGLETON	0	NS	0	0	0	1	7	
SCONE	0	0	0	0	0	0	7/12	
CAMDEN	0	NS	0	0	0	0	0	2
NOWRA	NS	0	0	0	0	0	0	0
BODALLA	NS	0	NS	0	0	0	0	0
BEGA	NS	0	NS	0	0	0	0	0
MUDGEES	NS	0	0	0	0	0	0	0
TAMWORTH	NS	NS	0	0	0	0	0	0

OTHER NEGATIVE LOCATIONS: INVERELL, MOREE, BOURKE, DUBBO, WAGGA, YANCO, WENTWORTH.

KEY: * No of Positives/ No Sampled.

NS= Not Sampled.