MODERN CAE TESTING IN AUSTRALIA

By Dr Sandra Baxendell, PSM, BVSc (Hons), PhD MANZCVSc, GCertAppSC(RurExt), GCertPSectMgt, PGDAppSc, MRurSysMan

Testing for Caprine Arthritis Encephalitis (CAE) will be needed for the foreseeable future in Australia. While some goat herds are in accreditation schemes, retesting will be needed as CAE is an infectious disease and any breakdown in biosecurity puts even goat in accredited herds at risk. Any goat (feral, meat fibre or dairy) in Australia is at risk while there are CAE carriers and clinical cases around. This is the same for any infectious disease- constant testing is needed. The Red Cross continues to tests every blood donation for AIDS and 4 other infectious diseases even if the risk profile questions and past negative tests reduces the probability of a donor being a carrier (see http://www.donateblood.com.au/about-blood/ensuring-safety).

Australia is fortunate in having an excellent system of veterinary laboratories, both government and private. No-one can just set up a veterinary laboratory and be open for business and accept samples for animal disease testing. All veterinary laboratories (vet labs) must first be accredited by the National Association of Testing Authorities or NATA (see www.nata.com.au). Firstly the laboratory is accredited by NATA and then the types of tests performed are accredited. This ensures that the samples receivable process is correct (so your samples won't be confused with anyone else's) and that the tests performed are done according to best practice and that the results are reported correctly. All processes must be documented and regularly reviewed and in addition, NATA inspects the laboratories and does regular audits. The NATA website is searchable so anyone can check that their vetlab is accredited and the scope of the tests they are allowed to provide e.g. ELISA tests in production animals. The DPI NSW Camden vet lab is number 14495 and Biosecurity Queensland vetlab is number 13389. The private company, Gribbles, only have their South Australian and Victorian vetlabs accredited for ELISA tests in production animals and not their Brisbane or Sydney vetlabs (which are mainly for companion animals).

While NATA accreditation of laboratories (medical, chemical, forensic, veterinary etc) has been around worldwide since the late 1940s, many countries still do not insist that all vetlabs have NATA accreditation. In the USA for example, private vetlabs that have no accreditation, can test for CAE and therefore lack independent verification of the quality of their test results. I am on discussion group for American veterinarians (vets) interested in sheep and goats and am always sorry for the US vets, who often discuss which vetlabs are best for which tests. In Australia, vets do not have this worry.

Another reason that Australian vets do not have to worry about which vetlab to use is the oversight of the Animal Health Committee set up by the Council of Australian Governments (COAG). The Animal Health Committee is basically all the Chief Veterinary Officers of every state/territory , New Zealand and the Australian government plus representatives of the CSIRO, DAFF and Animal Health Australia – see http://www.daff.gov.au/animal-plant-health/animal/committees/ahc . The Animal Health Committee has set up a sub-committee to help it manage the vetlab network in Australia- this is called the Sub-committee on Animal Health Laboratory Standards or SCAHLS. The role of SCAHLS is to "establish, implement and monitor professional and technical standards" of

"government, CSIRO, private and university animal health laboratories" and to facilitate networking between them. More information can be obtained from the SCAHLS website – see http://www.scahls.org.au/.

SCAHLS is responsible for the writing and submission of test protocols to the Animal Health Committee for approval. The beginning of each procedure or standard summarizes the particular disease based on the research at the time of publication. The CAE standard mentions that "goats become persistently infected with the virus" and also states that the ELISA has "improved sensitivity" compared to the AGID test. The ELISA test is now the one most commonly used by vetlabs in Australia. The test protocols are consistent with, but often of a higher standard, than those in the World Organisation for Animal Health (OIE) Manual of Diagnostic Tests and Vaccines. Both the OIE and SCAHLS approve the use of ELISA and AGID tests for CAE, but no other tests.

All Australian vetlabs undertake proficiency tests for all veterinary diagnostic tests and must pass them to retain their accreditation. Also one vetlab is given the responsibility of providing the positive standard used, ensuring consistency. SCAHLS is constantly improving tests and updating procedures, all of which must be approved by the Animal Health Committee. Any discussion about CAE tests in Australia must be about the current tests, not tests used in the distant past.

Australia relies on agricultural exports and hence it is essential for any diagnosis of new or exotic diseases to be accurate as this often has immediate economic consequences. If a substandard private vetlab decided to test for Foot and Mouth Disease and incorrectly diagnosed it and reported their findings publically, then most meat and dairy exports would cease immediately and Australia's economy would be devastated.

Worm egg counting services are not considered vetlabs, so NATA accreditation is not mandatory, although it is a good idea to choose one that is. If a worm egg count is wrong, a herd may get and extra drench or miss out on a needed drench, but there are no serious consequences except for the property involved. The parasitology sections of most government laboratories are generally NATA accredited.

Australia also has international reporting obligations which are done via the Australian Chief Veterinary Officer to the OIE and it therefore relies heavily on the SCAHLS approved tests. For many tests, the results give Australia a competitive advantage in the live export trade (but not for CAE). CAE is one of the many diseases on which Australia must report annually. Unfortunately all reports, since reporting started in 2005, show Australia as having clinical cases of CAE – see http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/Diseasedistributionmap

Australia is reported in these same maps as never having had maedi-visna reported in sheep. Based on recent overseas research, it is essential that dairy goats with possible CAE are kept away from sheep although the disease summary in the SCAHLS standards noted sheep breed differences in susceptibility to CAE transfer. I would love to see these CAE maps changed in the next few years- maybe into Australian zones as being free of CAE to finally free of this disease altogether, as other countries are doing. Other overseas countries are doing this and I believe Australia should and can do the same. While CAE will not be the same colour as maedi-visna (i.e. not recorded), it could move away from being all pink (clinical cases) with hard work and dedication.

To protect your goat herd ensure that any goat you buy is from either a CAE accredited herd or if there is no scheme in your state, from a dairy goat herd that tests all stock annually for CAE. Then ensure you practice the highest standard of biosecurity at all times e.g. no sharing of equipment, no entry of untested goats for service etc. Keeping diseases out of your herd is the cheapest and easiest disease control option.