ARGT risk forecast 2011

ARGT is a disease of livestock that results from the consumption of sufficient quantities of toxic ryegrass seedheads. The seed heads are rendered toxic when they are infected by a bacterium, *Rathayibacter toxicus*, which is introduced into the seedhead by a nematode, *Anguina funesta*. The disease can arise from the consumption of any feed that contains the toxic seedheads, including pasture, crop stubbles, hay and grain.

For ARGT to occur the toxic bacterium must be present. When it is present the risk of the bacterium building up to levels that are dangerous is principally influenced by weather patterns before and during the growing season. These patterns include false breaks, the incidence and intensity of early rainfall events and temperature patterns. However, the risk can be modified by implementation of pasture and grazing management practices that minimise the production of the toxins that cause ARGT, or by use of the resistant ryegrass 'Safeguard' or the biological control agent twist fungus (*Dilophospora alopecuri*). There are naturally-occurring populations of twist fungus in some parts of the SW Agricultural region. Conversely, the risk may be increased unintentionally by, for example, causing a pseudo false break as a result of an effective knockdown prior to seeding followed by a second germination event.

More information can be found on the DAFWA website at ARGT.

Here, potential risk, assuming the presence of *Rathayibacter toxicus* and a few mitigating factors, of the incidence of ARGT is predicted using daily weather data from weather stations across the SW Agricultural region each year until July 30. Risk has been predicted as the proportion of properties tested exhibiting ARGT, it does not include an indication of the intensity of *R. toxicus* on individual properties. Where, all of the precursor elements required for an outbreak of ARGT are present, without any mitigating management practices then the risk prediction will assist producers to assess the management options of their hay crops or pasture, and livestock, to manage the risks of ARGT. Where there is a history of ARGT on a property or in a paddock the predictions here must be treated with caution depending upon management actions that may have unintentionally exacerbated the possible development of ARGT.

Equations used to estimate relative risk were developed from information from the export hay industry in the years 2000 to 2005. In the maps relative risks are expressed in categories of 0% (pale green) to 100% (dark green) in intervals of 20%. The relative risk is an indicator that management decisions may need to be taken (see above).

Although the hay industry is concerned primarily with levels of the bacterium well below those required to cause clinical disease (the export hay industry works on a virtual nil tolerance for presence of the bacterium), it is expected that the predictions will be equally applicable to farmers considering the risk of ARGT in their pastures, crop stubbles and meadow hay as to export hay producers.

For further information contact Dr Jeremy Allen.

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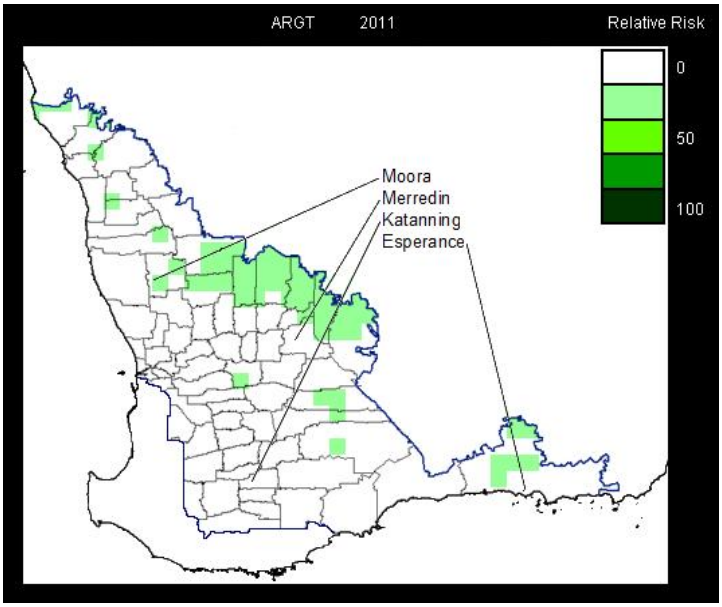
ARGT
2011
Relative Risk
0
50
100
Moora
Merredin
Katanning
Esperance