



Should I vaccinate my Angora Goats against Rift Valley Fever (RVF)?

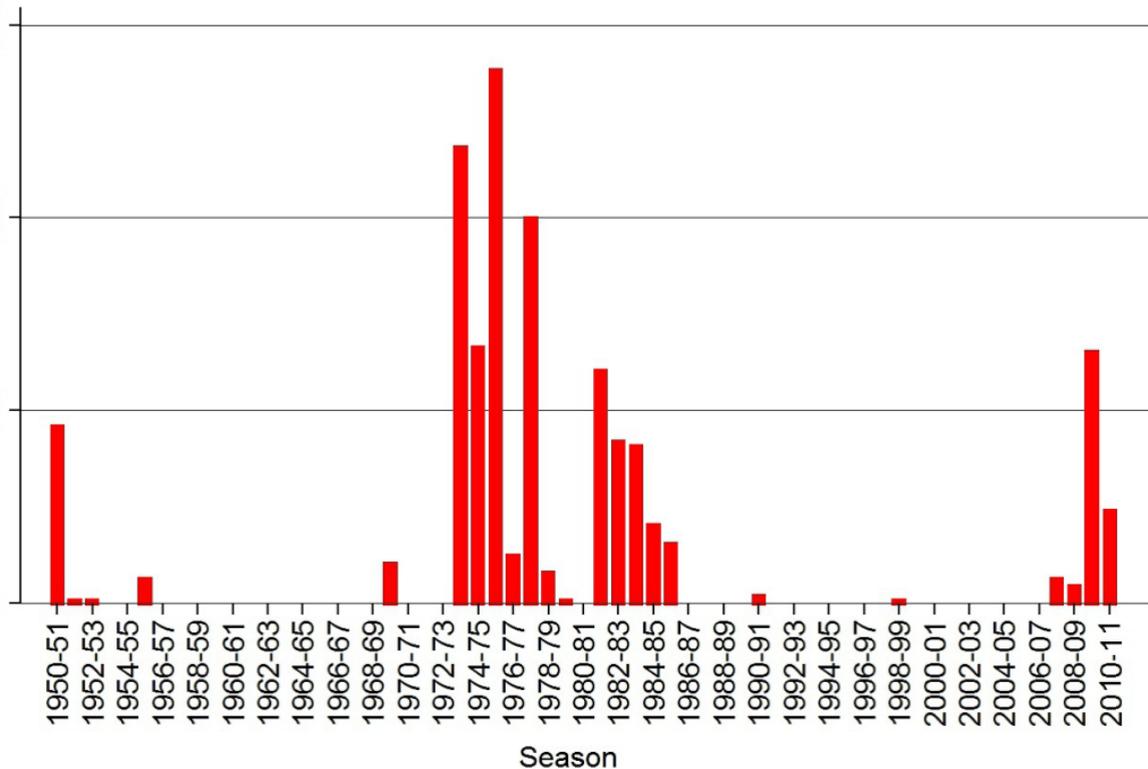
The question I regularly get asked is: 'Should I vaccinate my Angora goats against Rift Valley Fever?'

One thing is for sure is that we will get an outbreak of RVF again in the karoo.....when?

Due to the extent of the outbreak during 2010-11 it is very likely that most of our Angora goats would have been naturally exposed to the virus and so became naturally 'vaccinated'. Over the following years however, our 'vaccinated' Angora ewe flocks would have been largely replaced by maiden ewes joining each year and the older ewes being culled. As the proportion of immune goats in our flocks declines (now 6 years after the last outbreak) the possibility of an outbreak will increase if the rainfall conditions trigger an explosion of vector numbers in late summer.

We can learn from the past outbreaks to try to help us look into the future.

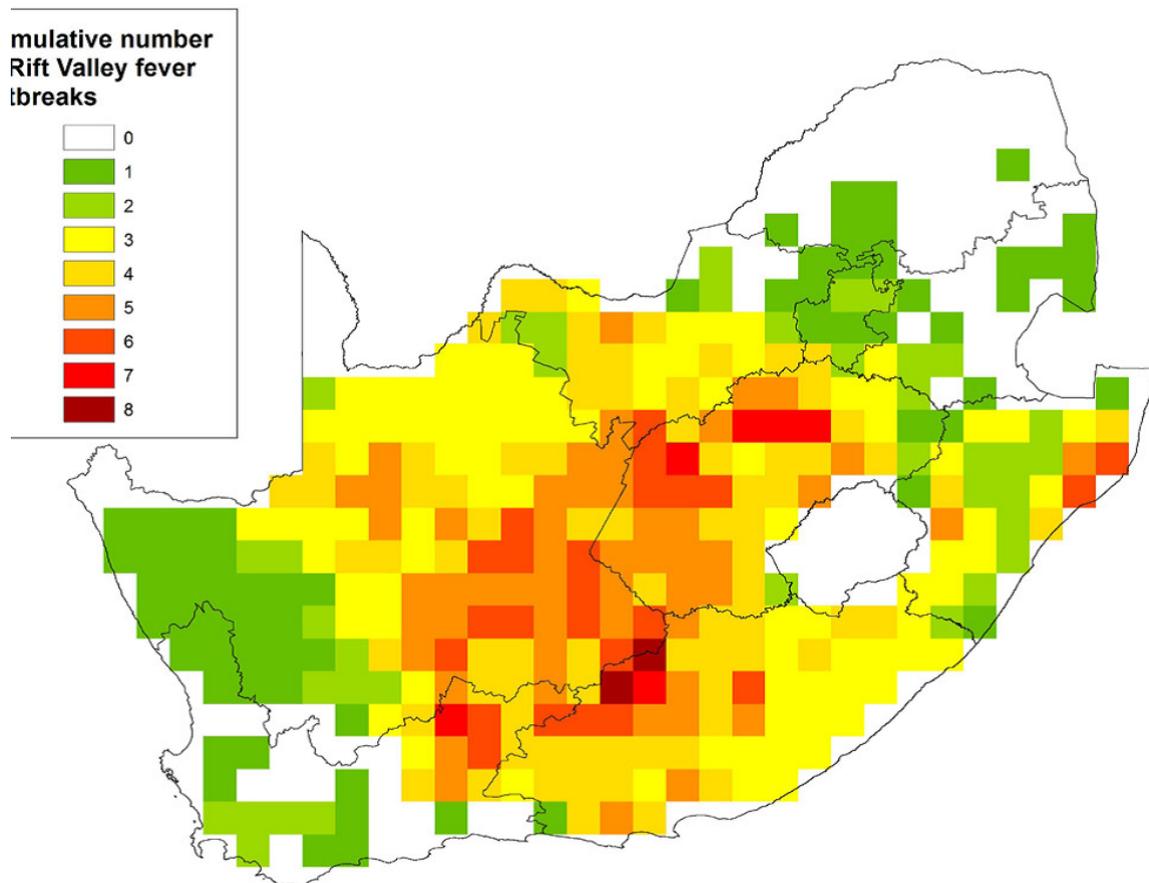
The three major RVF epidemics in the Karoo (1950-1951, 1973-1976 and 2010-2011) can be identified in the graph below. (Nicolaas J. Pienaar and Peter Thompson of Department of Production Animal Studies, University of Pretoria and Directorate Animal Health, Department of Agriculture, South Africa)



From the graph, it becomes evident that after a large epidemic, such as the ones experienced during 1950–1951 and 1973–1976 that:

- Outbreaks continue to occur for several years after the epidemic when conditions favoured the vectors (mosquitoes). This would suggest that we need to be aware that it is still possible to have more outbreaks over the next few years if we get excessively high rainfall patterns over the later summer months.
- Studies in Africa indicated that the RVF virus activity was more likely after cumulative rainfall, rather than heavy precipitation over a short period.
- Most outbreaks occurred from January onwards,
- Where outbreaks occurred before January, this often followed outbreaks late during the previous season.

The number of outbreaks (1951 to 2011) are plotted in the graph below (studies by J. Pienaar and P. Thompson)



From this data it is clear than the Angora farming areas of the Eastern Cape are at high risk of future outbreaks of RVF

RECOMMENDATION

We should be vaccinating our Angora ewe flocks.

If, as a farmer, you are reluctant to vaccinate your Angora goats then I would suggest you at least consider vaccinating just your **maiden ewes** each year (with the **live** attenuated RVF vaccine)

- before they enter your ewe flock
- and all your ewes again if above average rainfall occurs. Repeating the vaccine will likely stimulate a better immune response than a single live vaccination.

Vaccinating at the time of an outbreak with the live RVF vaccine is NOT recommended and may exasperate the situation as a reversion to virulence is a possibility as may have occurred in 2010-11. Only a 'dead' vaccine should be used during an outbreak.

Angora goats can be vaccinated at any age except kids from vaccinated ewes should not be vaccinated before they are six months old - maternal antibodies may block the vaccine response. Pregnant Angora ewes should not be inoculated with this vaccine as it can cause abortion or foetal malformation. The dose is 1 ml subcutaneously (under the skin)

Does the RVF vaccine work?

As an advisor to Cape Wools SA (2011) we conducted a trial due to perceived vaccine failure of the OBP RVF vaccines to determine sero-conversion after vaccination.

The tests showed a **negative** sero-conversion response in **67.6%** of animals vaccinated with the live RVF (Smithburn) vaccine 14 days post vaccination, with all remaining animals showing antibody titres no greater than 1:10. Similar results of 66.7 % of sheep showed no immune response with the ELISA test. So clearly there was a loss in confidence in fact that the vaccine was having any effect.

SAMGA will do a small trial to check whether the current live RVF vaccine being produced by OBP is causing effective sero-conversion. I will inform Mohair producers as to the outcome of this trial.

What happens to the virus between outbreaks?

Several possibilities exist:

1. Trans-ovarial transmission in certain mosquitoes may occur (*Aedes* spp) (Linthicum *et al.* 1985; Pepin *et al.* 2010). The eggs lay dormant on the edges of pans and hatch when conditions of high rainfall occur. However, the three major epidemics were associated with a different RVF virus lineage (Grobbelaar *et al.* 2011), indicating that long-term survival of the virus in dormant mosquito eggs is unlikely to have been the main mechanism for virus survival between these epidemics.
2. Another possibility is the low-level circulation of the virus between animals and mosquitoes, without resulting in clinical signs or severe outbreaks (Pepin *et al.* 2010). Serological evidence of low-level circulation of RVF virus in African buffalo has been found in the Kruger National Park and antibodies have been found in several wildlife species.
3. The transmission of vectors from possible endemic areas, either within South Africa or in neighbouring countries, is also a potential mechanism for initiation of an outbreak



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For more information on Angora Health Click here

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