CARLA® SALIVA TEST

Measuring parasite immunity in sheep

Questions and Answers

What is CARLA®?

CARLA® is a molecule found on the surface of all internal parasite larvae (L3s) infecting livestock. It is very tough and able to withstand passage through the rumen. *CARLA*® is only present for a few days after worms are ingested. Later stages of the worm life-cycle (L4 and adult) do not have the molecule.

What are CARLA® antibodies?

CARLA® antibodies are produced by the sheep's immune system in response to larval challenge. In immune sheep, high levels of *CARLA*® antibodies are present in saliva and gut mucus; these antibodies bind to CARLA® on the surface of ingested L3 and prevent establishment.

What is the CARLA® Saliva Test?

Some sheep produce more *CARLA*® antibodies than others. The saliva test is a simple method to test for the presence and level of these protective *CARLA*® antibodies in saliva. Testing involves taking a swab of saliva and sending it to AgResearch for analysis. The test result gives the level of *CARLA*® antibody present at the time of sampling.

What is a "good" result for the CARLA® Saliva Test?

The test results (example below) provide a numerical read out of the concentration of *CARLA*® antibodies in saliva and an interpretation of what this means in terms of protection from incoming parasite larvae.

Tag	CarLA IgA	Larval Protection
4	0.00	None detected
5	4.05	Medium
18	0.37	Trace
43	0.00	None detected
61	1.71	Medium
63	0.00	None detected
72	0.53	Low
78	5.14	High
85	0.00	None detected

When larval protection level is medium or high (above 2.0 antibody units), animals have good protective immunity to incoming parasite larvae. However animals will only maintain such high larval protection levels when there is plenty of larval challenge from pasture (for example in autumn). Where pasture parasite levels are lower (e.g. in spring and early summer) a result above 0.5 antibody units (low larval protection) is a good result.