Pest-proofing pastures will aid persistency

Alison Popay, AgResearch, Ruakura

Having high yielding persistent pastures must be near the top of any farmer's wish list. And if there is one issue that seems to have been bothering farmers lately in the Waikato it is poor pasture persistence. The 2008 drought has had a lot to do with this but so too have the pests infesting your pastures. Some of these are minute, some are large. They might be sharing the herbage with your cows, chewing on the roots or sucking out the nutrients the plants need for growth. They seldom advertise their presence, unless the damage they do becomes really obvious and by then it's too late. And that is precisely the problem – insect pests often do not rate highly in a farmer's decision making with regard to pastures because they are not aware of their presence.

Black beetle is a classic example of an insect that farmers are often not aware of, despite the widespread damage it has caused in the Waikato and Bay of Plenty regions in the last two years. This insect isn't small but the adult beetle hides in soil during the day and feeds at the base of tillers where it is not easily visible. They can be particularly destructive to newly sown annual and perennial ryegrass and tall fescue. In more mature pastures in autumn and spring, farmers may notice patches of yellowing tillers which will just come away when pulled. This too is a sign of black beetle adult activity. The feeding those beetles are doing will not only help them survive but will also determine how many eggs they lay in spring. That's important because it is the root feeding larvae of black beetle that do the most damage. That damage only really becomes apparent during January and February at a time of the year when pastures are already under stress from high temperatures and lack of moisture.

Black beetle has cost farmers a lot of money in the last 2 years. Could some of that cost have been avoided if (a) farmers were aware that they had a problem and (b) they had the right information to make good decisions about what to do about it? The short answer is yes. Using the right endophyte and seed coatings are the best options for avoiding black beetle problems or at least slowing population build-up and reducing the impact – the problem is that farmers and seed merchants don't always know this. For starters if you think you are in a black beetle prone area do not use ryegrass with AR1 endophyte. AR1 is a very animal safe endophyte that does a great job controlling Argentine stem weevil but it has little effect on black beetle. Your best option for perennial ryegrass is using AR37. Endo5 or NEA2 will also reduce your black beetle problem, as will Max P in tall fescue. All these endophytes reduce feeding by the adult, affecting their survival and ability to lay eggs. Using these endophytes is an investment, and to further protect that investment ensure that your seed is coated. No endophytes fully protect young seedlings from damage, as endophyte takes some weeks to express itself into seedlings. Seed coating will not only protect the seedling but kill off at least some of your beetles. Finally don't rush the pasture renewal process. Spraying out old pasture one day and drilling seed in the next just provides those pests with more food. Consider going through a crop to clean out the pests before replanting. Trying to sow new pastures, even those that are resistant, in the middle of a black beetle outbreak will not always be successful.

Does the crystal ball indicate that black beetle will still be a problem this coming summer-autumn season? The onset of severe frosts in early June suggested we were

in for a long cold hard winter which would certainly have reduced the survival of beetles. However, a record warm August curtailed that. Populations of larvae are unlikely to be as high as they were earlier this year, but nevertheless there may well be enough to cause damage, especially if the dry summer continues in Northern Regions.

Getting better pasture persistence is not just about providing protection against black beetle. There are many other pests out there which when combined together are reducing plant survival and productivity. Some of those pests are also controlled or suppressed by the AR37 endophyte. Trials have shown that it is that extra protection provided against a range of pests that gives ryegrass with AR37 the edge over both AR1 and the old toxic standard endophyte when it comes to pasture productivity and persistence in this region.

There's a lot to consider when renewing pasture with that goal in mind of having it produce well and last for several years. There is no doubt that making the right decisions as to what to plant and getting good establishment will set farmers off on the right path. From there it often comes down to good pasture management. And that's another story.