CONTROLLING SERRATED TUSSOCK WITH SMART PASTURE MANAGEMENT

Col and Hayden Dyke from Oyster Bay Oysters have been using pasture restoration to manage serrated tussock across their east coast property. Over the last 14 years, they have reduced management costs, improved success rate in control, made weed control easier and improved grazing land condition.

BACKGROUND

Oyster Bay Oysters' main business is aquaculture. They also manage 200 ha of pasture that has been largely infested with serrated tussock as well as another 200 ha of bush / grassland with lesser infestations.

Serrated tussock (ST) is an extremely invasive pasture weed that heavily impacts agricultural pasture production and grazing animal welfare. It can quickly take over paddocks if not actively managed. In the early days they had limited success in managing ST and spent a lot of time and money on treatment.

CHALLENGES AND FAILURES

The initial management approach tried was to out-compete ST by de-stocking to improve pasture vigour, in combination with spot-spraying with glyphosate herbicide. However, with this approach ST plants survived under large tussocks of pasture grasses, logs, rocks and native vegetation making them extremely hard to see and treat.

They also tried a contrasting approach using heavy sheep grazing to suppress ST and prevent it seeding, in combination with spot-spraying. They had limited success with both approaches and ST seedlings continued to emerge year after year.

SPOT SPRAYING - AN UNSUSTAINABLE COST

Continued spot spraying of large areas was expensive, time-consuming and put a strain on farm resources and staffing. Since 2010 the work crew have spent 953 hours spot spraying, and applied a cumulative total of 5691 L of Roundup Power Max mix.

In 2018, $55,000 was spent on labour and chemical to spot spray glyphosate and flupropanate with no real reduction in ST.

During the extended dry period that year the pasture species died off and they saw extreme numbers of ST germinate after rain. That was the point they knew they had to change management and on a large scale.

'The simple reality is that we couldn't afford to spend $55,000 per annum on ST management with no real reduction in ST' - Hayden Dyke.

REMOVING SEED BANK AND IMPROVING PLANT COMPETITION

Reducing the amount of spot spraying was an important priority due to associated time and labour costs.

In 2014 they established a 5ha trial plot in a heavily infested paddock using a fodder crop followed by re-sowing down to permanent pasture. A disc plough was used to bury seed and prepare soils for crop and pasture stabilisation. They continued to spot spray with glyphosate over the rest of the property with a goal that no plant would reach maturity and have the opportunity to seed, therefore not adding to the existing seed bank in the ground.

The management strategy in the 5 ha trial plot was to treat re-emergent ST by deployment of a boom sprayer and using a reduced application rate of flupropanate (0.75 lt/ha) to minimise impact on pasture species while eliminating ST.

They worked with local agronomist Rod Hancl on an approach and to select a pasture grass mix for re-sowing that would be suited to ongoing fluproponate treatment. They had good results from the trial and started to treat the remainder of the property in a staged approach. In autumn 2019, 70ha was ploughed and sown using the same method.

A research project with IMAS was developed to study the effect of herbicide on farmed Pacific oysters, another key concern for their business. Results demonstrated that flupropanate had no adverse effects and could safely be used.

ACHIEVING GOOD RESULTS FOR PRODUCTIVITY AND WEED CONTROL

Pasture restoration is not cheap, but the long-term benefits of this approach have been worth it. Through trial and error, Oyster Bay Oysters have found a successful ST management method and have significantly reduced the density and areas of ST infestation and improved pasture condition.

They have also found that it is possible to skip the fodder crop phase and go straight to re-sowing infested paddocks to pasture – with similar low re-infestation rates of ST. They will continue this approach in the future. The time spent spot-spraying is now limited to fence lines and areas that can't be ploughed, which has reduced costs and freed up time for staff to work on other farm priorities.

BENEFITS OF FODDER CROPS AND RE-SOWING INFESTED PADDOCKS

Resowing pasture can decrease the soil seedbank of ST through burying seeds to a depth of between 2.5-5cm, which can significantly reduce germination. The increase in ground cover of new crops and pasture further reduces the likelihood of ST seed germination.

See the 'Managing serrated tussock. Tips for resowing to perennial pasture' for more information – available at nrmsouth.org.au

SUMMARY FROM HAYDEN

In our situation (heavy infestation) spot spraying did little more than keep ST numbers constant. It only works in areas where there are a few plants.

Once you have ST you have it forever. You need to keep on top of it every year. One mature plant can produce thousands of seed and the seed remains viable for many years. Vectors for translocation include stock, vehicles, people, wind. You need to be vigilant. Our infestation came from sheep in the 80's.

What we are doing now is working for us, with some important points:

- Below label rate of flupropanate application may lead to resistance over time.
- More research is required to understand soil type and effective rates of flupropanate

Thanks to GSBC's NRM Dept for their dedication to weed management and assisting with spot-spraying, making the job easier and more cost-effective.

LAST WORD ON WEED HYGIENE

Preventing the spread of weeds is one of the most important aspects of weed management. Serrated tussock is readily spread by wind across paddock boundaries, by vehicles, machinery, stock, hay, people and water.

It is therefore very important to have procedures in place that will help reduce its spread on a property and between properties. Hayden has been careful to minimise spread through stock management and machinery washdown procedures. Vehicles used in ST seeding season (utes, ploughs, tractors) are routinely brought back to his main compound for washdown.

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