

CASE STUDY

Mitigating the Infestation of Giant Rats Tail Grass in Grazing Practices

Giant Rats Tail Grass (GRT) *Sporobolus pyramidalis*, *S. natalensis* was introduced into Australia in or

around the 1960's through pasture trials and soil conservation. It was also introduced to areas through pasture seed that was contaminated with GRT seed. GRT is a category 3 restricted invasive plant; however, it is not toxic to cattle. The effects of GRT are due to its invasive and highly competitive and aggressive nature, out competing more desirable pasture grasses.

Australia is a conducive ecoclimatic environment for GRT to thrive, with approximately 30%, or 223 million hectares of Australia's landscape identified as being suited conditions for the grass to establish. Due to its strong adaptability, GRT is estimated to have established itself across approximately 60% of Queensland.

Impounding on its adaptive capabilities, Giant Rats Tail grass is a prolific seeder, with dense stands of the grass producing up to 85,000 seeds per square meter. The seed has a viability of 90% productive seed with a viability lifespan of more than ten years. GRT flowers and seeds during the summer and autumn period, which coincides with the wet season for a large proportion of Australia. The grass can quickly dominate less competitive grasses and when well established in ideal environments, can form mono-specific stands. Giant Rats Tail grass grows to a height of two metres and is unpalatable to stock. Infestations of GRT affects livestock health, as it reduces productivity through poor weight gains and affects growth rates. In its establishment stages, it is difficult to distinguish from other pasture grasses, making it difficult to control until onset flowering and seeding.



GRT is easily spread via livestock, through their hair and hooves, gut, and manure. Poor biosecurity practices enhance the ease in which livestock can increase the spread of the seed. Practices such as the quarantining of livestock before transport assists in the mitigation of seed transfer. While it is identified that Giant Rats Tail grass infestations are a significant concern, there are no current requirements to declare property infestations upon the sale or movement of cattle, potentially exposing landholders to possible infestations through the purchase of cattle.



Due to the seed size and ability to be easily transported, another method in which the seed spreads are through hydrological movements, such as runoff during rain events and through livestock watering from creeks during times of flow. Landholders downstream of areas of infestation are exposed to GRT through the distribution of the seed via watercourses. It is the spread through watercourses that proves to be the most difficult to control and manage, as the source is unpredictable.

Control measures for Giant Rats Tail grass infestations are costly, especially in instances where there are large stands of the grass. Methods of control include practices such as mechanical, for example ploughing out the paddock and resowing with competitive pasture grasses and chemical control, such as the application of plant specific herbicides.

Treatment Methods

Treatment methods in the control of GRT include the application of tetrafluoropropanate (Taskforce) and glyphosphate, mixed at label recommendations and applied via hand spray or a boom spray with nozzles adjusted for coarse droplet application. The removal of cattle from paddocks of high infestation pressure during treatment, along with quarantining cattle between paddock movements where applicable assist in reducing instances of seed transfer throughout the property.

Alternative treatment methods include controlled burning to reduce seed bank viability and a slashing program which assists in utilising the infested paddock by increasing the palatability of the grass to livestock, without the risk of spreading seed from flowering or seeding seed heads. Mechanical control, such as ploughing and resowing the paddock with competitive, stoloniferous pasture species not only reduce the existing seed bank, but also introduces more competitive, desirable pasture grasses into the infested paddock.



Consideration in the variety of grass species must be given, ensuring that the selection includes competitive, stoloniferous pasture species, such as Rhodes grass, *chloris gayana* or Signal grass, *brachiaria decumbens*. The inclusion of a fast-emerging grass species, such as Sabi grass, *urochloa mosambicensis*, may help to increase competition and suppress the emerging Giants Rats Tail grass seedlings. Once the improved pasture has established, an ongoing spot spray program to address any Giant Rats Tail grass that may emerge would be a complementary ongoing control method. The control method selected would need to consider a maximum reduction to the existing seed bed to prevent any further increases to the seed bed and to increase the degradation of seed viability, along with the control of existing parent plants.

For more information:

Department of Agriculture and Fisheries, 2021, *Restrictive invasive plant, Rats Tail Grasses*, https://www.daf.qld.gov.au/_data/assets/pdf_file/0010/69616/rats-tail-grasses.pdf



WHAT IS NRIP

THE QUEENSLAND GOVERNMENT'S NATURAL RESOURCE INVESTMENT PROGRAM COMMENCED IN 2018 AND HAS PROVIDED FUNDING TO NATURAL RESOURCE MANAGEMENT REGION BODIES TO SUSTAIN NATURAL RESOURCES AND IMPROVE REEF WATER QUALITY ACROSS THE STATE. REEF CATCHMENTS WAS SUCCESSFUL IN THEIR BID TO RECEIVE FUNDING TO UNDERTAKE TWO REGIONAL PROJECTS.

- ▶ Improving the relative ecological condition of freshwater streams and Wetlands in the Mackay Whitsunday region.
- ▶ Addressing priority sub-catchments water quality targets through grazing management interventions.

The funding reflects the ongoing commitment of both the Queensland Government and Regional Natural Resource Management bodies to ensure the states natural land and water resources are sustainably managed.