MEAT & LIVESTOCK AUSTRALIA

# Fact sheet

# Pasture dieback

## What is pasture dieback?

Pasture dieback is a condition causing death of patches of pasture across a range of sown and native grasses. It is prevalent across northern, central and south-east Queensland.

Symptoms include:

- vivid yellowing and/or reddening of leaves
- as the condition progresses, plants become unthrifty and eventually die in patches less than one metre in diameter to paddock scale (10 to hundreds of hectares)
- reduction in root system and grass density.

Once the pasture dies off, a range of broadleaf plants commonly emerge, including annual and perennial weeds, shrubs and legumes.

Observations from pastures with similar symptoms were first recorded in central Queensland in 1993. While the more recent outbreaks (last five years) exhibit the same symptoms, the condition is now affecting an increased range of grasses, both sown and native, in more locations.

Past research has failed to identify any causes, nor appropriate management solutions for affected red meat producers.

A common symptom of pasture dieback is reddening of leaves

## R&D activities underway

MLA has engaged a number of organisations and coordinated a range of activities, including diagnosing the possible causes and investigating management options that producers can implement to restore pasture productivity.

At this point the cause has not been confirmed, but field trials are showing promising results for restoring pasture productivity. R&D activities include:

- thirty-two farm visits involving producer surveys and collection of soil and plant samples for analysis
- drone and satellite surveillance to detect and monitor spread
- field trials (to be completed June 2018 – June 2019) – burning, slashing, cultivation, nitrogen and phosphorus fertiliser, re-sowing with pasture and legume species, fungicide, insecticide, biological supplement, silica, intensive grazing, cropping rotation
- locations – Gogango, Jambin, Wowan, Biggenden, Yerra, Middlemount, Biloela (Queensland)
- pathogenicity trials (ongoing) – Koch's Postulates to confirm causal organisms
- molecular DNA testing of affected soil to measure disease inoculum levels in the soil
- glasshouse trial – using soil collected from a severely affected dieback area to test potential controls including fungicides, pasture varieties, nutrients, manure and biologicals
- epidemiology studies – investigating how dieback spreads.

## Planned R&D activities

- investigating the linkage between Mealybugs and dieback
- assess the geographical spread of dieback over time and relate to historical weather conditions
- more extensive pasture trials using a range of species
- more sampling of healthy and affected plants, as well as soil under different conditions
- data collection for registration or permits for any promising chemical control options or other control options such as seed coatings
- further monitoring of spread using drone and satellite technology
- develop scenarios and action plans depending on outcomes of treatment trials
- extension of outcomes from current field trials
- create a biosecurity plan based on current knowledge.

Dead pasture with Mealybugs present

Patch of pasture dieback

**Future fact sheets**

1. Findings from field trials – what has worked and what hasn't.
2. Diagnosing dieback. Do you have pasture dieback? How to identify dieback on your property.


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