

Pastures after drought

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This is a summary sheet. More detailed information can be found in Primefact 41 'Managing pastures after drought' (http://www.dpi.nsw.gov.au/__data/assets/pdf_file/36379/pastures-after-drought-primefact41.pdf).

Key Points

- Allow pastures to begin regrowth then make an accurate assessment of what has survived.
- Prioritise paddocks according to their potential value after the drought.
- Control weeds which will hamper recovery.
- Fertilise only what can be grazed effectively.

First, assess what has survived

After the drought, check paddocks to ascertain what is left and what the potential of the remaining pasture is, given reasonable seasonal conditions. For some species, you may have to wait until spring (e.g. warm-season annuals or perennials). If you need help to determine what species are regrowing, seek advice from your District Agronomist.

When checking pastures, keep in mind that the density of perennial species is more important than that of annual species.

The remaining perennial plants in a drought-affected pasture (especially lucerne) have the ability to compensate so that as stands thin out, remaining plants take advantage of the additional space, nutrients and moisture and may still produce reasonable yields.

Erosion potential

The erosion potential of all paddocks also needs to be assessed. Adequate groundcover is the key to reducing both wind and water erosion.

Determining the value of the surviving pasture

Consider the composition of the surviving pasture in relation to its value to your enterprise.

Perennial pastures are very expensive to establish, and native grass pastures in most cases cannot readily be re-sown. These high-value pastures

must then be given priority for rest if it is apparent that further grazing may threaten their survival

Draw up a list of paddocks with:

- moderate-to-good density of desirable species but have been under severe stress from drought and grazing pressure. Maintaining a grazing regime that continually removes regrowth is likely to threaten survival further. These paddocks are the highest priority for a rest.
- moderate-to-good density of desirable species but have not been under severe stress from drought and heavy grazing. These paddocks offer the possibility of some grazing as conditions improve but will need management to allow full recovery in the short-term. Schedule these paddocks for a rest as soon as practicable.
- pasture density that is too thin for it to become a worthwhile pasture even after a return to more normal conditions. These paddocks can be considered for immediate grazing (sacrifice paddocks), cropping, re-sowing or pasture renovation.

Recovery after drought

Short Term (1 – 4 months)

In the short term spell pastures to allow the plants to recover (crown, stolons, tillers and seed). Assess the damage to both the surviving plant population and any seedling recruitment.

Not all pastures will require the same treatment. Most introduced perennial pastures will need more nurturing compared to perennial native and annual pastures. There are preferred management strategies for the various pasture types, however, it will not be possible to treat all pastures in the most favourable way coming out of a drought.

Introduced perennial pastures

These pastures will require a spelling period of 4 – 6 weeks before grazing should commence. Introduced perennial will need to reach a herbage mass in the order of 1000 kg dry matter/ha to allow a sufficient root mass to develop and strengthen the plant..

Native perennial pastures

Native perennial pastures have a higher resilience to both drought conditions and heavy grazing pressure due to their lower growing points. As a result native perennial grass species are less likely to be grazed out. Following breaking rains these



pastures may be grazed 3 – 4 weeks later. Minimum desirable herbage mass is 500 kg dry matter/ha.

Annual pastures

It is likely that special purpose annual pastures will have been decimated by the harsh conditions and will have not set enough seed to allow for their persistence. These paddocks will lend themselves to re-sowing.

Sub Clover

If hard-seed levels of sub clover have been diminishing, additional seed may need to be applied with careful variety selection. However, it is possible to re-build seed to adequate levels with a reasonable growing season. Following breaking rains it is desirable to allow the sub clover to germinate and develop at least 3 true leaves before grazing.

Longer Term

Assess pasture recovery after a prolonged rest. Consider options and techniques for re-sowing, re-establishment and recruitment. Then plan pasture renovation depending on:

- level of pasture loss or damage
- difficulty or cost of resowing
- potential productivity of the paddock

Fertiliser strategies

After a prolonged drought, soil nitrogen, phosphorus and sulphur level tend to be slightly higher. This will assist production in the short term (3 – 4 months). However, if pre-drought levels were low, growth may still be reduced by nutrient deficiency.

Phosphorus and sulphur applied just prior to the drought should be still available. If re-sowing pastures, a small amount (for instance 5 kg P/ha) should be sown with the seed.

Where improved pastures were maintained at adequate levels of phosphorus and sulphur pre-drought, fertilising could be withheld for 6 – 12 months, unless a soil test indicates otherwise.

Nitrogen may be needed for grasses and fodder crops, for example millet or fodder brassicas. However, mineralisation will have occurred during the drought. If fertiliser is to be added, be aware that urea is volatile, and when topdressed requires moisture to wash it into the soil. Moisture is also required to obtain a production response and allow for sufficient growth to reduce the risk of nitrate poisoning.

If stocking rates are reduced, current phosphorus levels are likely to result in sufficient pasture growth to meet animal production targets for the next

season. There is little point fertilising if there are not enough stock to utilise the extra feed.

If you are not sure of specific paddock fertiliser needs, do a soil test or apply fertiliser test strips.

The drought is unlikely to have any significant long-term effects on soil pH.

Pasture sowing 2007

The decision to re-sow will depend on the timing of the autumn break and your attitude to risk. It will also depend on when you judge the drought to be over. What to sow may be in part determined by seed availability and cost.

Weeds

Many weeds still set seed in spring 2006 and the drought will have broken the dormancy of many others. Delayed sowing may be needed to control grass weeds.

Low groundcover and poor pasture competition will inevitably lead to weed problems. Annual broadleaf weeds (e.g. Paterson's curse and thistles) will affect pasture recovery. Early control is crucial to allow pastures to recover.

Annual grasses (e.g. barley grass) can provide good feed early in the season but will compete with more useful pasture species (e.g. clover) and may cause seed problems later in spring.

Ideas and Techniques

- If there is ample herbage mass, consider removing annual weeds to reduce competition in the pasture, either using a winter clean or a selective broadleaf spray (spraytopping annual grasses).
- The most crucial time to spell pastures is following the break.
- If the perennial stand is weak, a spell at flowering/seed set is desirable to strengthen the plant.
- Graze hard to mid-spring to reduce annual seedset.
- Spray and direct drill introduced species to thicken pastures, upgrade or augment native pastures.
- Spring sprayfallow, crop, cultivate, autumn spray or direct drill where pastures need replacing and can't recover.

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