

Water use after drought

Extensive Industries Development

As you come out of drought, you should reassess your water needs as part of your property management plan.

Irrigation

As there is likely to be a shortage of water for irrigation in the months – or even for the next season – after a drought, irrigators should carefully consider how to make best use of the available water.

Budget your water to ensure maximum return per megalitre (ML) used. It is better to adequately irrigate a smaller area than to run short or under-irrigate a large area.

The decision is relatively straightforward for irrigators who rely mainly (or entirely) on crops for their income. Water is best used on permanent perennial crops, or on those annual crops which are likely to provide the highest net income.

For annual crops, select the most fertile fields and, if possible, those closest to the supply point. This will minimise channel losses.

It is appropriate to spread available water over a larger area of winter crops, to provide one or two spring irrigations. This should maximise production per ML, provided these irrigations, which supplement rainfall, occur at the right time.

Irrigators whose main enterprise includes livestock production may face more difficult choices. As the aim will be to maximise feed production per ML of water applied, choices will include irrigating existing pastures or winter or summer fodder crops sown after the drought has broken.

Other factors must be considered, such as the need to boost seasonal feed supply to fill expected 'feed gaps', nutritional aspects of the feed, and the need to grow fodder for hay or silage.

Pastures which became degraded during the drought may need to be oversown with clovers or grasses to boost the bulk and quality of the feed they produce when irrigated. A wide range of

grasses and clovers are available for various purposes and climates in NSW. Pasture nutrition and soil fertility, as well as weed and insect control, need to be of a high standard to ensure the best results from the water applied.

Oats are often the best choice where autumn and winter grazing are required. There are also varieties of wheat, barley and triticale which can be used for dual purpose (early) grazing and grain production. Forage sorghums and millet are the most productive fodder crops to irrigate for feed production through summer and into autumn.

Again, fertile fields should be chosen, adequate fertiliser applied and a high level of management adopted. Try to avoid fields which have low fertility, soils which are leaky, saline or sodic, areas which are prone to waterlogging, and fields which are difficult to irrigate or wasteful of water.

All components of the delivery system, whether it is pressurised or surface irrigation, should be checked to ensure the system operates at optimum efficiency.

If yours is an overhead irrigation system, each watering should wet the soil almost to the bottom of the effective rootzone. This will be more efficient than frequent light waterings, from which a greater percentage of the water applied is lost to evaporation. Avoid overwatering, which could cause excess surface runoff and deep drainage below the root zone.

In areas where surface irrigation is practised, the ground may have large cracks and the subsoil may still be dry many weeks after the drought has broken. A technique which can reduce deep drainage with the first irrigation is to use high flow rates. This enables fast watering, and minimises waterlogging and deep drainage losses. A re-use system must be in place to collect and recycle the tailwater where this technique is adopted.

Soil salinity may have increased in land which had salinity problems prior to the drought, or where poor quality water (such as saline surface water, groundwater or recycled water) was used during the drought. If drought-breaking rains have been



insufficient for adequate flushing, additional applications of irrigation water may be needed to leach the accumulated salt from the plant's root zone.

Water quality

During drought, the quality and flow rate of water in streams may deteriorate. In tidal sections of coastal rivers, brackish water can move further upstream than would be the case in more usual dry spells.

Groundwater, whether from shallow depths from spear points or from deep bores, may also become more saline during a prolonged drought, particularly if it is over-extracted.

As water availability improves, its quality should be tested to determine its suitability for the crop or pasture species to be irrigated. NSW DPI has a water testing service that can test the suitability of water for irrigation, livestock, garden or household uses.

Further information

- [Agfact AC.2 Farm water quality and treatment](#)
- [Primefact 326 Water requirements for sheep and cattle](#)
- [Primefact 533 Water for livestock: interpreting water quality tests](#)

Further assistance

- Advice on your irrigation system is available from your local NSW DPI Irrigation Officer.
- Assistance with advice on stock and domestic supplies can be obtained from both NSW DPI and the Department of Water and Energy.

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2008). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

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