Bushfire Pasture Recovery

Levels of pasture damage caused by bushfire

The damage done to pasture during bushfires is generally classified into three groups,

Cool to moderate burns, hot burns and very hot burns. There are re-establishment procedures for each of these three groups accordingly. Cool to moderate burns are those in which the fire front passes rapidly over well grazed or short pasture.

Hot burns occur where there was a significant amount of pasture before the burn. Areas that are close to bush or heavily treed parts are often hotter and even well grazed pasture in such areas may be considered in this group. It is not unusual for the boundaries of the paddock to be hot burns whilst the main central part is cool burnt.

Very hot burns occur where there is a significant amount of pasture together with other flammable material such as hay bales or significant leaf litter blown and trapped in the fire, windrows and thick root mats.

Re-establishment of burnt pasture

In cool burn areas some of the pasture seeds in the soil will normally survive often together with small amounts of dead plant material. Perennial grasses and clovers will normally survive. This pasture will normally regenerate naturally after the autumn break.

In very hot burns the soil is virtually sterilized and organic material in the top soil layer is destroyed. The only solution is to re-sow once the autumn break arrives. (ie march-may, before the soil cools for winter). It is the hot burn areas which are most difficult to treat with certainty. Hot burns destroy all dead plant material and many seeds and perennial grasses.

There are two options. The first option is to do nothing until next summer. If the pasture does not regenerate then it will have to be re-sown after the next autumn break and in such a case a whole year's production is lost. The second option is to re-sow after the autumn break. This may not be the most economic situation but in small acreages may be desirable. Living in a house overlooking a burnt paddock for a year can be a sad experience whereas watching a burnt paddock come back to a pleasant green in spring can be extremely good psychologically.

Care of re-established pasture

Re-sown or re-established pasture needs to be monitored with care. Stock should be excluded from re-established pasture for six weeks or more after the autumn break. Pasture plants should be left to set seed in the spring following the fire. This can be assisted by avoiding heavy grazing and not cutting for hay or silage.

Other factors to be considered.

1. Broadleaf weeds usually appear and start to dominate recovering pasture and should be sprayed. If pasture resowing is delayed it is possible for weeds to establish and cause pasture seed to be crowded out. If dry feed has been fed to stock during the recovery period it would be common for new species of weed to appear. These need to be monitored carefully and treated appropriately.
2. Soil from very hot burns usually becomes hydrophobic and is not easily wetted by water. Water forms in small pools but does not penetrate into the soil. Water in this situation cannot be absorbed by the seeds or roots. This hydrophobicity can be removed by using wetting agents or by using a slightly acidic liquid seaweed solution. Burnt soil that have been subjected to cool to hot burns can become hydrophobic if they are dry for several weeks between the fire and the autumn break or if the soil was very dry before the burn.
3. Bushfires can create soil highly vulnerable to both wind and water erosion. In some areas it may be necessary to set up temporary silt traps made of shade cloth, straw bales and steel posts. Stock should be kept in a containment area if possible or at least away from areas where significant erosion is likely to occur.
4. Paddocks near the bush can become covered with ash from burnt bush. This ash is high in minerals and is easily moved around by wind or surface water. The high mineral level in the ash can cause problems and will reduce root development in re-sown pasture. This ash needs to be incorporated into the soil or the ash can be removed and buried. This problem is not expected to be a major problem in most paddocks.
5. Hot and very hot burns tend to increase the pH of the soil and this has the potential to cause problems but would generally be marginally beneficial. Blown ash is also likely to be alkaline.
6. Fire removes organic material from the soil which needs to be built up again. There are numerous ways of doing this but the initial aim should be to reinstate the pasture and then take steps to rebuild the organic material level in the soil.
7. Recently reestablished pasture should be fertilized with care. A little and often approach, rather than a significant amount in one application is always the rule, and it is even more important in the case of burnt pasture. Avoid using urea in the first few months of re-growth because although urea is a cheap source of nitrogen it breaks down on the soil surface and can significantly reduce seed germination.

Dr. Colin Young

Fair Dinkum Fertilizers
manufacturers of quality seaweed products

4 Glenbarry Rd Campbellfield Vic 3061 T: (03) 9357 5488 | F: (03) 9357 5388 | E: office@fairdinkumfertilizers.com
www.fairdinkumfertilizers.com