

## Pasture spray topping

### *What is spray topping?*

Pasture spray topping involves the application of a non-selective herbicide – either Glyphosate or Paraquat at flowering of the weeds or annual grass species to reduce the formation of seed heads and seed set. Secondary advantages of spray topping include preventing maturity and development of rank, unpalatable dry feed of low nutritive value. Using low chemical rates is possible because during flowering, annual grasses have an increased sensitivity and this can limit or reduce the effect on desirable pasture species. Intensive grazing pre and post spraying can also reduce the number of weed seeds returning and post grazing removes survivors before they set seed. The difficult decision to make is when to apply the herbicide as in most pasture situations, there will be a mix of annual species maturing at different times, usually with Barley grass the first to mature. If in doubt, the literature suggests that early application will be more successful than late application.



Source: [www.depi.vic.gov.au](http://www.depi.vic.gov.au)

### *Glyphosate*

Use a low rate as instructed on the label. Usually around November but this can be as early as September/October depending on the season. Spraying needs to be completed before all seed heads have emerged (usually 50% head emergence). Do not use wetter with glyphosate if >50% of pasture is composed of improved perennials as this will reduce the amount FOO available to grazing stock. Glyphosate needs to move through the plant to the site of action and takes time to control all tillers. It is slower acting compared with paraquat but if applied at the milky-dough stage, some seed heads can mature before the herbicide has worked. This is because glyphosate is translocated around the plant. Seed heads can still be effectively controlled while still in the boot. Low rates can have a negative effect on

sub clover and all legumes and even at high application rates (1.5L/ha), there are still annual plant species that are resistant to treatment – such as annual ryegrass.

### **Paraquat**

Paraquat (e.g Gramoxone®) is fast acting and more appropriate to use if the pasture has developed past the flowering stage. It is less forgiving than glyphosate as it has a narrow window of application – between flowering and the milky dough stage. Paraquat is a contact herbicide and to work effectively, the seed heads must have fully emerged from the boot. Paraquat always works better if applied in the late afternoon or on a still overcast day.

### **What's best?**

A single application of glyphosate can cover a wider range of target species flowering at different times. If you are trying to select a single species, i.e Barley grass or annual ryegrass, then use paraquat to target the correct growth stage of that species. You may require additional treatments for plants that flower over extended periods. For the best results, a pre and post graze (crash graze) is a must. Pre grazing tightens the window for flowering, while post grazing removes any plants that survived the treatment before setting seed. Apply glyphosate at early head emergence (50% heads emerged). Apply paraquat after complete head emergence until the oldest heads begin to hay off. After spraying with paraquat, graze immediately as feed value declines rapidly. If using glyphosate, feed quality is preserved but palatability is highest at around 3 weeks post spraying. Remember to observe the relevant with-holds and always read the label and consult your agronomist.



Source: [www.agric.wa.gov.au](http://www.agric.wa.gov.au)

*The following recommendations have been taken from <https://www.agric.wa.gov.au/grains/spray-topping-pastures>*

### **Barley grass and brome grass**

Glyphosate should be sprayed when the seed heads emerge and before the dough stage of the seed. Once beyond flowering, paraquat should be used as it will provide better control of seeds in the dough stage. As barley grass sends up seed heads over an extended period, earlier control with glyphosate could be a good option. However, this early timing is very likely to coincide with the flowering of pasture legumes. Pasture legume seed set can be significantly reduced if spray-topping coincides with early to mid-flowering.

An alternative for barley grass is to use two applications of paraquat (three weeks apart). The interval will vary with seasonal conditions. Use one application to target early tillers and a second application to target later tillers. Obviously the cost of treatment is increased and

trials have shown that pasture legume seed-set is reduced more when two applications are made rather than one.

### ***Silver grass***

Glyphosate should be applied at the early head stage and paraquat a little later just prior to haying off. The seeds of silver grass are small and it is often difficult to determine different stages of seed development. Additionally silver grass can progress from flowering to hard seed in about a week if the weather is warm and soil is starting to dry out. So it is important to treat silver grass paddocks first in the spray-topping program to ensure effective treatment.

### ***Annual ryegrass***

It is important that glyphosate be applied during flowering and when all tillers are in head. Paraquat should be applied a little later when most heads have seeds in the dough stage.

### ***Rates***

Generalised application rates are:

Glyphosate 240 – 360mL/ha

Paraquat – 500mL/ha

Wetting agent should be added (~2-300ml/100L water)

Discuss suitable application rates with your agronomist as rates listed above are a guide only and are subject to change depending on your situation.

### ***Mechanical topping***

‘Mechanical topping’ refers to mowing paddocks later in the season to prevent development of viable weed seed heads. It can be used as an alternative to spray-topping, particularly if resistance to herbicides is an issue. Mechanical pasture topping is slower and more expensive than spray-topping and there is greater likelihood of the plants regrowing to produce seed.

## **Hay Freezing**

Hay freezing involves the chemical treatment of pastures (or crops) to create standing hay.

A non-selective herbicide (usually Glyphosate or Paraquat applied at double the spray topping rate) is used to desiccate or kill the plants (and weeds) altogether at flowering (rather than just sterilise). This method is used instead of ‘hay making’.

Chemical is applied earlier than if the crop was to be mown for conventional hay making.

Hay freezing is a more reliable tactic for controlling weed seed-set than conventional hay making, with the added advantage that specialised hay making equipment is not required – just a boom sprayer.

The protein content and digestibility of standing hay are similar to those of conventionally baled hay with the only downside that dry matter losses from trampling can be high and the quality of the standing feed will eventually deteriorate in quality. One major benefit of hay freezing is on lighter soils prone to erosion as leaving the standing hay will reduce the risk.

Please consult your agronomist or consultant to discuss options, chemicals and rates before proceeding.

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