



Bracken spraying update

Bracken continues its relentless progress in upland areas, and although cutting, rolling or crushing will eventually reduce the vigour of the fern, the application of herbicides is generally the only practical long-term solution.

Currently, there are two approved herbicide options, Asulox or glyphosate, both of which can be highly effective when applied between July and the end of August prior to any signs of senescence.

Asulox is the product of choice in an establishing crop due to the excellent tolerance of most crop species to the herbicide. Despite initially being recommended for EC re-approval, Asulox lost its European registration in 2012 following a review of the regulations in Brussels, so in the last few years, forestry use in the UK and on moorland has been through an annually renewed Emergency Approval. The licence holders UPL are investing heavily in the provision of data for re-registration, and a full reinstatement hoped for in 2018 or 2019.

The 2017 Emergency Approval is very similar to that granted in previous years with use and storage from 01 July to 31 October, after which all unused herbicide must be returned to the supplier. Application may be by knapsack or tractor sprayer, or though helicopter services such as those operated by Mike Davies in Wales or PDG in Scotland. The previously popular drift application by Micron Ulva is not permitted.

Although knapsack application is permitted, the terms of the approval make this option impracticable in most circumstances, as a maximum concentration of 1% is permitted, and any runoff is prohibited.

At the forestry rate of 10l/ha, this would mean applying 1000l water per hectare, meaning that a 10 litre knapsack would cover only 10m x 10m, and almost certainly lead to runoff from the fronds. A cumbersome option would be to spray three times with 3.3l/ha in 330l water per ha - time consuming, but legal.

Glyphosate is equally effective on bracken but has the disadvantage of being much less safe to the underlying crop - particularly broadleaves. However, it does have a useful role as a pre-planting treatment, particularly on replant sites left for two-three years as part of a Hylobius management strategy.

Although glyphosate is not permitted to be applied by helicopter, it scores heavily on hand-held systems as it can be applied low volume by CDA spinning disc (250um) systems, by weed-wiper, and by knapsack at efficiently low water volumes. This means that glyphosate may be the preferred option for treating small bracken patches shading small pines or spruce. Timing should be targeted towards the end of August when there is a good chance that the crop leader growth will have hardened but



the bracken is still green.

At time of writing, no firm decision has been announced in Brussels about the long-term future of glyphosate.

Three options for the future

Two other application systems are being developed. The first is the use of the tractor-mounted canon mist-blower used by Christmas tree growers for insecticide and fungicide applications. These fan assisted sprayers are capable of spraying some 50m from the tractor, so will be a valuable option on semi accessible terrain.

The second option is the use of herbicide-carrying drones. This technology is already well established in Japan with an 8-rotor machine capable of treating a quarter hectare of bracken per flight. However, although the drones are available, it will probably take a couple of years for the regulatory regime to adopt a suitable approval process.

A third herbicide option also looks interesting. The sulphonyl urea herbicide amidosulfuron currently used for weed control in the cereal crop appears to be very promising. The herbicide has a reasonable safety profile on trees, can be applied by knapsack sprayer, and is not classified as harmful to the operator. However, it is classified as dangerous in the aquatic environment so would be likely to require a high aquatic buffer zone requirement. On the plus side, it been shown to be tolerated by moorland vegetation outside of forestry. However no moves have yet been made to gain an off-label approval for this use.

A Hardi mistblower spraying Christmas trees



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