



Bracken control

An update following the annual meeting of the Bracken Control Groups at Ingram, Northumberland in June 2019

It is estimated by Fera that bracken currently infests some 2m ha – around 8% of the UK land surface, and, because of increased pesticide regulation, coupled with reduced availability of grants, this infestation is expanding at between 2-3% per year. As a result control measures which peaked in 2011 at around 14,000ha just prior to the EC revocation have now fallen to an annual figure closer to 5000ha.

The difficulties of managing bracken in forest establishment are well rehearsed, as if not controlled it will at best put the young crop in check, or in dense infestations will smother and kill the crop. It is a fierce competitor to the crop, with an established infestation consisting of upwards of 300 tonne/ha fresh weight including up to 1.5 kilometres/ha of underground rhizomes. It also harbours tick borne diseases, creating a hazardous environment for forestry staff.

Asulox (asulam)

Asulam, currently sold by UPL as Asulox, is the key herbicide used in the UK for the control of bracken, predominantly by aerial application. While glyphosate will also control bracken it cannot be sprayed from the air and has the potential to kill not only bracken, but any vegetation such as grass or heather which it is wished to retain.

UK is unique in Europe in having a severe bracken problem, this being traced back to the influence of medieval farming practices, and the effect of reasonable levels of fertility on lowland and lower upland soils. The only other country worldwide with a similar problem is New Zealand.

Asulox was first marketed in 1965 by Dagenham based May & Baker, later to be absorbed by the French company Rhone

Poulenc, which itself became absorbed into the German Bayer group. As a result of new EC regulation, from 1991 all pesticides have to be re-authorised on a five-year basis, and around half of the 600+ pesticides used in Europe failed these new stringent criteria, asulam among them.

This was a surprise, as asulam has an excellent human and environmental profile, and the evidence submitted strongly supported these attributes. Unfortunately, though, the Swedish authorities (who did not have a bracken problem at the time) noticed that the submission had not followed the strict EC protocol in one minor area. This concerned a breakdown product which, at higher rates is used as a pharmaceutical, and as Bayer market this medicine they used the data generated to support this use. However, the data was generated according to a pharmaceutical protocol – and the EC require tests to be undertaken to a slightly different pesticides protocol. So asulam was a refused registration on what was a technical issue.



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At about this time, Bayer, having absorbed a number of pesticide companies, was divesting itself of some of the minor products, asulam among them. Fortunately, asulam has a strong presence as a general herbicide worldwide in a number of crops as diverse as sugar cane and bananas, so it was purchased by the British company UPL to market worldwide outside of Europe.

As a result of this loss of asulam in Europe, the Bracken Control Group was formed in 2011 to support the EC re-reg-

istration of asulam. The group is administered by the Heather Trust, largely through the work undertaken by the chief executive, Simon Thorpe, and Confor is a member. Following representations from the bracken control group, UPL commenced the process for re-registration in Europe, and the dossier was submitted in 2014, which, if successful should gain an EC registration in 2020. However, new regulations on endocrine disrupters may require further data and delay. Once registered in the EC it will then need to be registered in the UK which will take a further two years, so will hopefully be re-registered for use in Britain in 2022.

In the meantime, section 53 of the EC regulation caters for emergency approvals, which are handled on a country by country basis. The Bracken Control Group, through the Heather Trust, coordinate this application which has to be submitted annually in liaison with UPL, and to date, including 2019, authorises use between July 1st and the end of October.

Control measures

Herbicides continue to be the most efficient means of control. Other measures, such as cutting, rolling and cattle grazing will, over time, reduce the intensity of the infestation, but are likely to be impractical in most forest establishment programmes. Mulching may also be considered on smaller scale plantations.

A site visit by the Bracken Control Group to a long term field trial using non chemical techniques illustrates the shortcomings of using mechanical control techniques as shown in these photographs.

Current practice is to use a pre planting aerial application of Asulox under the Emergency Regulations, or, if the terrain permits, an application of Asulox or glyphosate by crop sprayer. A licence has to be gained for each aerial application, and these are handled by the Environment >>

>> Agency in England, NRS in Wales and SNH in Scotland. The criteria are rigorous and areas will be restricted by the presence of watercourses, together restrictions concerning wildlife and favoured non target plants.

Unfortunately, neither of the two key herbicides asulam and glyphosate will penetrate the full length of these rhizomes and any out of reach adventitious buds will produce new fronds the following year, which, if untreated, will, within four years return the infestation to pre spraying condition. So follow up treatments will be required until the crop becomes competitive, and none are particularly attractive options (see panel).

The future

Non chemical options continue to be researched by Tom Gledhill of Historic England, supported by many decades of work by Rob Marrs & others, but the most promising potential comes from five decades of research by Roy Brown, formally from the University of Bangor. This work has included research into alternative herbicides, with extremely promising results from the use of amidosulfuron, currently available in the UK as Eagle. Amidosulfuron has been demonstrated to provide excellent bracken control with an excellent operator safety profile. Some 300+ treatment plots assessing some 60 environmental variables has shown that while not as environmentally benign as asulam, the characteristics of the product should provide sufficient confidence to support an offlabel use in forestry as a spot treatment follow up to pre planting asulam or glyphosate treatments.

Earlier work commissioned by Forest Research has indicated that the herbicide displays good crop safety - and indeed it has been safely used in Christmas trees for many years for the control of cleavers. The environmental data is available for the

FOLLOW-UP TREATMENTS

Asulox by knapsack sprayer

The Emergency Approval makes this option very difficult, as the maximum concentration permitted is 10ml per litre water. So at 10L/ha product this means 1000L application per ha - which in any case is disallowed by the regulations which disallow runoff. A possible option is to spray twice using 3L/ha in 300L water/ha - although this will provide reduced level of control.

Note that hand held CDA/ULV spinning disks, or weedwiper use are not permitted.

Asulox by quad bike and sprayer

The full 10L/ha rate can be used - but only on suitable terrain

Glyphosate by knapsack, CDA or weedwiper

Glyphosate can be used at a rate of 20ml/L in a knapsack, a maximum of 33% solution in a CDA applicator or as a 1 part to 2 parts water in a weedwiper. Glyphosate certainly has a usable set of options for applying by hand held equipment, but does not have the crop safety characteristics of asulam. It is preferable, therefore, to apply as late as possible in the bracken spraying season, possibly in early September, when most conifers will have sufficient wax to repel the herbicide. Avoiding the crop as much as is feasible is, though, a prudent precaution, and an absolute necessity in the case of broadleaved crops.

Cutting

By hand or strimmer will release the crop from check if done in June - ideally when the bracken is no more than 0.5m tall.

Quad Bike in inter row mower of roller

In June and again mid summer if necessary if access and terrain permit.

industry to use, should the forestry sector decide that the investment in applying for approval in forestry (circa £3,000) can be justified.

Conclusion

With political thinking looking more positive towards commercial forestry, land currently covered in bracken is likely to be favourably considered for planting, as these areas become less attractive for upland farming or conservation interests.

The continued use of herbicides to assist establishment is likely to continue to be the preferred option for control, at least in the short term, and recognising the uncertainties over continued availability of asulam and glyphosate, it may well be pru-

dent to consider an application for the use of amidosulfuron to assist successful crop establishment.



MEMBER SERVICES Pesticides helpline

Pesticides helpline is a free service operated by Confor's crop protection adviser Colin Palmer on behalf of Confor members. Colin can be contacted 8am to 8pm Mondays to Fridays on 01531 633500 (leave a message if necessary) or by email to: branchline@xln.co.uk



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