



NOTES ON THE CONTROL OF BRACKEN USING ROUNDUP BIACTIVE OR ROUNDUP PRO BIACTIVE



Background

Bracken, *Pteridium aquilinum*, is widely distributed throughout the UK being by far the commonest fern. Bracken is reported to cover over 8% of the country, an area of 11,000 sq.km. At 1-3% per year the rate of spread is faster than all the programs in place to control it, and it is encroaching on to grazing ground, forestry and amenity areas, reducing bio-diversity.

In many areas Bracken has spread from its traditional niche on the shoulders (upper slopes) of the hills. Expansion from these areas has been at the expense of open heather moor, semi-improved grassland, grass heath and wooded areas. Frequently Bracken forms almost pure stands, so thick that it is essentially a monoculture, the shading being so severe that little or nothing can grow beneath it.

To further exacerbate the problem, Bracken provides a refuge for sheep ticks and thus Louping Ill and the more serious Lyme disease, its spores are considered carcinogenic and it is poisonous to cattle and horses, giving rise to 'bracken staggers'!

Successful control of Bracken can be difficult. The main reason for this is the extensive underground rhizome network. This network consists of two rhizome types: storage rhizomes (70-80% of total rhizomes), which contain large carbohydrate reserves, and frond bearing rhizomes near the ground surface carrying a large number of frond-forming buds.

Control methods

Repeated cutting and to a lesser extent bruising will weaken the rhizomes over a number of years. Asulox™ may be sprayed overall without damage to the grass and can be sprayed on otherwise inaccessible areas from a helicopter, but it is very costly, has LERAP restrictions for use near water courses and is mainly effective on frond bearing rhizomes. Asulam is no longer approved under EU regulation and cannot be used after December 31st 2012.

CONTROL WITH ROUNDUP®

In accessible areas for ground application and/or where watercourses are nearby and/or where cost is an over-riding factor Roundup can be very successfully used as part of Bracken management strategies.

Timing of control is critical. Successful control using Roundup is dependent on the timing of the treatment in relation to the movement of nutrients and dry matter between the underground storage rhizomes and the fronds. As the fronds develop in spring the reserves in the storage rhizomes diminish. Treatment with Roundup during frond expansion in April, May or June will result in frond death but with little long term effect on the rhizomes as the glyphosate is carried upwards with the nutrient flow. Once the fronds are fully expanded, the products of photosynthesis will start to be translocated down to replenish the underground reserves. Treatment of the fronds as they approach full size in July-August will give maximum translocation and long term control of the stand.

Overall spraying is appropriate for large areas and thick stands. In many instances little or no other plants will be growing beneath the bracken canopy, and, in any case, the bracken fronds will intercept almost all of the herbicide spray. Apply at a rate of 5.0 l/ha in a water rate of 150-250 l/ha as soon as the fronds have fully expanded, usually early July-August. Later timing up to mid-September can still give satisfactory results but must be pre- senescence of the foliage. (In any case it is unwise to carry out treatment when ripe carcinogenic spores are in the air.)

Treated fronds will die back within four weeks of treatment, the Roundup being translocated down into the rhizome network killing both frond forming and storage rhizomes.

Large areas, especially scattered populations or patches in grassland, moorland or heath land, may be effectively controlled using tractor/quad bike-trailed weed wiper. Use of such applicators will ensure superior, cost-effective control of the bracken whilst leaving grass, heather and other plants unharmed.

The new generation of trailed and rotary weed wipers, such as the Logic Contact 2000, WeedSwiper, C-Dax Eliminator or Rotowiper make efficient selective application of Roundup, possible over large areas. Application is typically 1 part Roundup to 10-20 parts water, according to the weed-wiper manufacturer's instructions (specific models may vary).

The bracken should be 'wiped' at full frond expansion but before they start to turn brown and die back. Optimum control is achieved during July/August. Later timing up to mid-Sept can still give satisfactory results but must be pre- senescence of the foliage. Do not treat when the fronds are wet or rain is imminent. Always ensure a height differential of 10cm between the bracken and the grass to maintain selectivity.



One year after treatment.
Foreground wiped with Roundup Biactive
using a WeedSwiper, background
untreated.

Photo courtesy of Micron Sprayers



Wiping Bracken with a Logic Contact
2000

Photo courtesy of Logic

With large plants in dense stands, shading can result in incomplete coverage whether using an overall spray or a weed wiper, leading to some re-growth in the following year. However in many situations using an efficient application technique, high levels of control are possible after just one year. Monitoring and follow-up treatment should be carried out as part of a long-term management programme.

If the Bracken is being controlled in an area accessible to livestock the animals should be kept away from the treated area whilst spraying and for 7 days where spraying is overall, and until the spray has dried on the leaf where spot treatment or wiping is carried out. However, it must be noted that treated bracken may become palatable and is of course poisonous. So it may be prudent to exclude stock until the foliage has completely died down if the bracken takes up a large proportion of the available grazing area. This is also important if other poisonous weeds like Ragwort, Cowbane, Hemlock or Hemlock Water Dropwort are present in the treated area.

RATES AND WATER VOLUMES

Problem	Dose Rate of Roundup Biactive/ Pro Biactive	Application tips
Bracken (overall spray)	5 l/ha in 80- 250 litres water	Spray at full frond emergence, Usually late July/Early August. Before sporulation and senescence.
Bracken (hand-held weed wiper*)	1 part Roundup Biactive/Pro Biactive in 2 parts water	Useful method for small areas of re-growth and inaccessible areas.
Bracken (Weed wiper vehicle mounted or trailed)	1 part Roundup Biactive/Roundup Pro Biactive to 10-20 parts water	Consult manufacturer for more details

Most knapsack sprayers are supplied with a set of 4 deflector nozzles giving different swath widths but all delivering 200l/ha of water at 1 bar pressure and a walking speed of 1 metre per second.

Spot treatment in knapsack

(Standard 200 l/ha nozzles)

Area sprayed	Volume of Roundup Biactive/Pro Biactive	Volume of water
50 square metres	25 ml	1 litres
500 square metres	250 ml	10 litres
1000 square metres	500 ml	20 litres

*The Microwipe, hand held weedwiper is available from Billericay Farm Services, Telephone 01268 710237

NB Other formulations of Roundup may also be used, but the rates should be adjusted pro-rata if the formulation differs from 360g/l

For more information telephone the Monsanto Hotline on (01954) 717575

Roundup Biactive and Roundup Pro Biactive contain glyphosate.

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USE HERBICIDES SAFELY.ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE

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