Bracken Briefing No.27

This is part of a guidance series produced by/for the Bracken Control Group, which seeks to capture the current thinking about topics relating to bracken and its control. Feedback[1] on the contents will be welcomed and the guidance will be updated to reflect other views and other information as it becomes available.

THE TIMING OF MECHANICAL AND PHYSICAL CONTROL METHODS FOR BRACKEN

By Professor Roy Brown
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Introduction

1 This is a personal view based on over 45 years of experience in bracken research and practical management of many thousands of hectares in England, Scotland and Wales.

2 I have prepared this information in support of the Bracken Control Group's work and liaison with the various devolved administration agencies in the UK to encourage a co-ordinated approach to bracken control.

3 I make a number of statements in the text and confirm that all assertions are backed up by peer reviewed research by myself, the grouping around Professors Rob Marrs and Robin Pakeman and numerous other sources over the last 30 years.

Countryside Stewardship - England

4 Following the withdrawal of Asulox, last October, my understanding of the current DERFA / RPA position in England is that holders of existing Countryside Stewardship agreements, which include chemical control of bracken (SB4), have three options:

4.1 The first is to use Glyphosate instead of Asulox if its use was approved by Natural England or Forestry Commission during the CS application stage.

4.1.1 As a scientist, I find this completely unacceptable due to the known negative consequences of using this chemical, which is only moderately effective as a bracken control agent in the medium to long term.

4.2 The second is to substitute cutting (SB5) for chemical treatment.

4.3 The third is to drop the SB4 option completely from the agreement.

[1] Link for feedback: https://www.brackencontrol.co.uk/home/contact-us

Control Options

5 There have been several long-term studies into the most effective methods of controlling bracken and the only two which give excellent levels of control, and also facilitate the return of other ground flora to compete with bracken, are Asulox, now unavailable, and multiple annual cuts over many years. Other physical or mechanical control methods can have a similar response, in the right circumstances.

6 To reduce and ultimately eliminate bracken from an area by cutting, requires taking two or three cuts early in the growing season for several years. Some cutting treatment has had to be continued for up to 10years before full control of the bracken has been achieved.

6.1 A three cut regime would involve cuts in late June, late July and late August and a two-cut regime in late June and late July.

6.2 Three cuts rather than two are better, but if only two are practical, these must be the ones in late June and late July.

6.3 Whilst few, if any, birds nest in the centre of dense bracken beds, there can be a lot of activity in the more open mixed bracken / dwarf shrub / acid grassland / flush areas. In semi-improved grassland, with discontinuous bracken cover, there can be nesting activity from birds such as: Skylark, Green Plover, Golden Plover and Curlew.

6.4 There might be ways around this so that control can take place without disturbing the birds, but careful and last-minute planning is required.

6.5 In practical terms, if bracken control and follow-up treatment is to be successful, the late June cut / treatment is essential.

7 If mechanical or physical control methods are being supported as an alternative to using Asulox, the conflict with bird nesting advice must be addressed.

7.1 I think the issue is becoming more complicated as the current annual seasonal climate / growth cycle conditions are pushing the optimal first cut timing to mid-June, and consequently the July and August to the middle of the month.

8 One final point on cutting, is that we now know the secretion of Illudane type Glycosides (ITGs - which are RNA strand splitting carcinogens) in bracken is at its greatest in the early stages of growth each year.

8.1 When two fresh growth cuts take place within a month of each other, the quantities of ITG exuded are increased substantially; these pose a threat to ground water and the surrounding environment.

8.2 Operatives must be briefed about this threat and take extra personal safety precautions.

Spot spraying as a follow-up (secondary) treatment,

9 Primary chemical spray in year one followed by annual spot treatment of every frond, as it emerges in subsequent years, has proved to be the most effective and least environmentally damaging treatment regime evaluated over the last 30 years.

10 However, these assessments are based entirely Asulox. I am not sure of the position with Glyphosate either in terms of its long-term efficacy / collateral damage when used as a spot treatment; I have only made assessments at the macro spraying scale (under experimental licence) and through use of weed wipers, but other people may have direct evidence.

11 I think the use of spot spraying is a grey area which, again, needs to be clarified by the agencies.

12 I assume that spot treatment on a large scale, which will be even more labour intensive and costly than cutting, is not a valid option on large areas. I would certainly say that its effectiveness is dependent on there being less than 4 to 5 emerging fronds/m^2 and ideally being applied as early as possible in the growth cycle.

13 It should be remembered that whatever the herbicide being used, spot treatment impacts on the current growth only and not systemically in the rhizomes, which is why it takes a lot of years to be effective (in one study, although the frond density was very low, they were still spot treating in year 18).

14 In my view, spot treatment is a 'safe' option. However, it will be necessary to check the ground and, if necessary, treat any emergent fronds that are approaching first whorl stage, every 2-3 weeks from early June to late July.

15 Potentially, there are up to three budding waves possible from one undamaged, rhizome node points each season. A result of this is that there are going to be a lot of boots on the ground in the nesting season, certainly in the first few years.

Summary

16 If safe and effective bracken control is to continue, clear instructions from the government agencies to those trying to control bracken on the ground is essential.

17 If the bracken management objectives are to be achieved, being able to use mechanical or physical control methods in June is not negotiable. A first treatment in July is too late.

18 Clear guidance is required about the use of glyphosate products in a weed wiper as a primary or follow-up treatment, and its use as a spot-treatment as a follow-up technique.

19 Based on the toxicology and zoonotic disease implications of bracken beds, in many areas, it has never been more important not just to maintain existing control programmes but to ramp up the effort.

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