



SCEPTRE CP 77 Link Blackcurrant weed projects

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Sustainable Crop & Environment Protection
- Targeted Research for Edibles



Aims of SCEPTRE - Sustainable Crop & Environmental Protection - Targeted Research for Edibles

- Gap-filling
- Identifying effective & crop safe actives
- Develop sustainable IPM systems



Department
for Environment
Food & Rural Affairs



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Electrical weeding: Perennial weed control, hand held probe

- Established blackcurrant field
 - High natural weed populations
- Weeds randomly selected & tagged
- Tested voltages & speeds
- Visual assessment: 2, 4, & 10 weeks after treatment
- Blackcurrant plants touched for 1 or 5 seconds on the main stem or side branch



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One hour post electrical weeding



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Two weeks post treatment



Symptoms on blackcurrant leaf- 5 second treatment



Dock

Treated

Untreated



Nettle



Thistle

Four weeks post treatment

Creeping thistle



Untreated
Control

Treated:
complete kill

Dock



Treated:
Re-growth

Untreated
Control

Four weeks post treatment

Nettle



Main stem dead:
Signs of re-
growth

Blackcurrant bushes



Treated for 5 seconds:
Stem alive, leaves dead

Year 2 - Tractor-mounted weeder

- Creeping thistle only
- Natural weed population
- Trial design- 4 replicate random quadrats
- Treatments: Rows between crop (6m wide)
- Visual weed assessment: 1 & 5 weeks after treatment



Electrical contact with weeds



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Electrical control of Creeping thistle



Untreated
control



One hour post
treatment

Regardless of treatment, thistles which were tall enough to receive physical contact with the electrode were killed by the electrical weeder

Electrical weeding in blackcurrants - year 3

- Tested weeder with under bush electrode
- Natural weed populations in established bushes
- Electrical treatment 16 May 2014
- 3 voltages

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Electrical weeder with bush fruit treatment arm attached



Blackcurrant damage: 2 WAT

Damage on branches
where probe touched

Branch damage- bush
ok



Conclusions - Electric weeder

- Height of weeder arm limiting contact
- Only large weeds controlled
- Contact with weeds lost at times (machine movement etc)
- Some damage to bush branches: not too much once power adjusted
- Would benefit from a 'comb' or 'brush' arm to cover a range of weed heights
- Needs further investigation

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Ubiquitek electric weeder “Touch”



Ubiquitek electric weeder “Touch”



Blackcurrant: Herbicides and Bioherbicides

- Yr 1 Pot screening on perennial weeds
- Yr 2 Field trials established blackcurrants
- Yr 3 Specific study, effect on buds of young bushes

Herbicides tested

- Glyphosate (Roundup) - approved (standard)
- Carfentrazone ethyl (Shark) - approved UK off label
- Pyraflufen ethyl product - approved UK for potato
- Product 72
- Product 109
- Product 116
- Product 135

Effect of herbicide on buds



- Ben Gairn & Tirran
- March or April application
- 15cm of stem base sprayed



Growth stage at treatment



Ben Gairn

21 March 2013

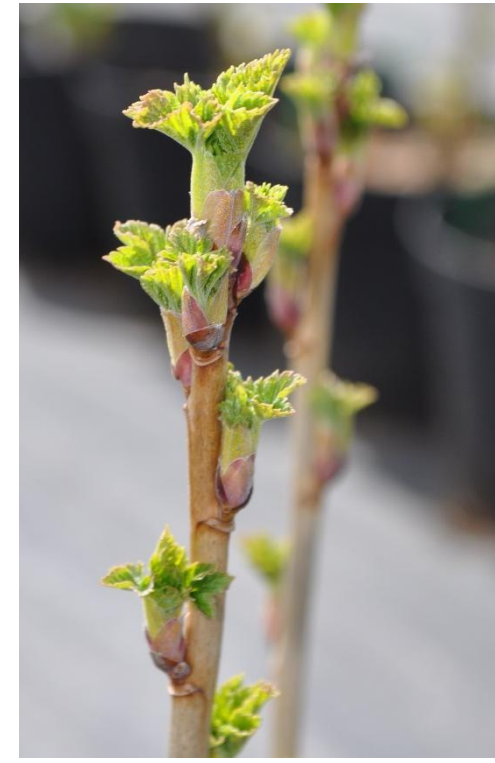


Ben Tirran



Ben Gairn

19 April 2013



Ben Tirran

Effect of herbicide on buds

Herbicide	Dormant bud	Young leaf	Translocated
Roundup		XX	X
Shark		XX	
Pyraflufen ethyl		XX	
72	X	XXX	XXX
109		XX	(X)
116		XX	
135		X	

Shark (carfentrazone ethyl)



Ben Gairn April application

Product 135



Pyraflufen ethyl



Ben Gairn April treated



Product 72



Roundup (glyphosate)



Ben Gairn treated March

Ben Tirran treated April