

St. John's Wort control Trial

When we gained access to the Snow Gums Natural Heritage Site in 2000 St. John's Wort had already taken a firm hold in the area.

We developed a policy of not using chemicals in the area adjacent to the snow gums and only weeded by hand, using a long bladed knife or digging fork.

Over the wider area we were instructed to cut the flowering stems and dab them with glyphosate. Contract sprayers also came in late December/ January and spot sprayed using Starane.

By 2004 we had started to dab the young rosettes, which form at the base of the flowering stem and began to question whether the cut and dab method of flowering stems was effective.

We decided to set up an experiment to see which method was most effective.

Recognising the scientific limitations but also that we had limited resources of time for such an experiment we decided to set up single plots for each treatment.

We chose six plots of 4 square metres (2m x 2m) where the density of plants was similar and marked the corners, with a star picket and 3 wooden stakes.

We decided not to fence them and leave them open to grazing by kangaroos.

The treatments were

1. spraying once in 2005 with "starane"
- 2 dab the young rosettes with glyphosate in early spring each year
- 3 cut out plants with a long bladed knife in early spring each year
4. cut and dab with glyphosate the flowering stems at the early inflorescence stage
5. cut and dab with glyphosate the flowering stems at the mature inflorescence stage.
6. control plot with no treatment.

In spring, the number of individual plants of St. John's Wort was recorded in each plot.

In late summer, the flower stems were cut and removed (to prevent reseeding) and their numbers recorded.

All other weed species were removed either by dabbing with glyphosate or digging out as they appeared.

Results

Number of St. John's Wort Plants in each square

Date	Plot 1 "starane"	Plot 2 young rosettes dabbed	Plot 3 young rosettes cut out	Plot 4 early inflorescence cut and dabbed	Plot 5 mature inflorescence cut and dabbed	Plot 6 no treatment
14.5.04	242	107	112	143	174	109
03.11.05	21	148	55	345	368	134
08.10.06	15	70	28	84	45	47
14.10.07	4	0	19	232	95	72

Number of flowering stems of St. John's Wort cut in each square

Date	Plot 1 "starane"	Plot 2 young rosettes dabbed	Plot 3 young rosettes cut out	Plot4 early inflorescence cut and dabbed	Plot 5 mature inflorescence cut and dabbed	Plot 6 no treatment
05.01.05	0	94 s	28 s	171 s,m	375 l,m,s	242 l,m,s
27.12.05	22	121 s	73 s	40 s	268 l,m,s	251 l,m,s
09.12.06	0	0	1	103	3	15
28.12.07	32 m	4 s	24 s	161 l,m,	558 l,m	75 m

s – small plants; m = medium plants; l = large plants

Discussion

The seasons of 2005/6/7 have been extremely erratic climatically and this is reflected in the results obtained from this trial.

Without replicated plots it is difficult to justify any strong conclusions. However, there would seem to be little difference between the untreated control and the cutting and dabbing of both the early and mature flowering stems.

There is much stronger evidence for the efficacy of dabbing small rosettes with glyphosate and for cutting out whole plants with a long bladed knife, though this is a much more time consuming process.

Spot spraying with 'starane' is clearly an effective method of control, but it is not available to Parkcare groups like ourselves.

Considerable flexibility is needed in scheduling work to control St. John's wort at the small rosette stage. The rosettes begin to form immediately after flowering when the water tension in the soil is low, but in dry seasons like those recently, the rosettes only form after rain.

In some seasons control work needs to begin in late summer/early autumn before the rosettes begin to spread to avoid damage to other plants species in the vicinity. In other seasons, the rosettes form in spring and when the water tension is high there is considerable variation across the paddock as to when they first appear. They throw up their flower stems as soon as the temperatures rise.

Given these difficulties, it would still appear that the best chemical method of control available to Parkcare groups like ourselves is dabbing rosettes with glyphosate when they are small..

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