

Herbicide Evaluation For Control OF Smooth Bedstraw In Forages

(NEOSCIA 2009-2011)

Purpose:

To demonstrate the efficacy of a selective herbicide “Milestone” to control smooth bedstraw in forage stands.

Background:

Smooth Bedstraw (*Galium mollugo*) has become an invasive weed in several districts of north eastern Ontario. This perennial weed is showing up in older hay and pasture fields in association with bird’s foot trefoil seed. It has been reported that contaminated bin run trefoil seed was the primary vector to spread this weed throughout several townships and now districts. The weed is very invasive also along roadside ditches. It is also not palatable to livestock on pasture. When the fields are heavily contaminated producers have had to kill the entire vegetation with a high rate of glyphosate and plough the forage stand to break up the massive root mass of the bedstraw. This option has been a last resort since it is very expensive to re-establish a forage stand.

Cornell University has worked with the herbicide “Milestone” and Milestone + 2, 4-D in the control of smooth bedstraw. The results of their studies are very strong

Methods:

The purpose of this project is to look at; 1) application rates low vs. high rates 2) timing of herbicide application on the weed 3) short and long term control 1yr, 2yrs and 3rd yr and 4th economics of using a selective herbicide to rejuvenate a pasture or hay field.

Communication Plan:

The demonstration sites will be visited by area producers from soil and crop tours and the results will be presented at annual meetings in the newsletter “Breaking Ground” and soil and crop annual reports.

Locations:

Two districts will participate in these demonstration plots Algoma and Temiskaming. Both districts will have 2 sites to offer replication and to assure a 3 year evaluation (2009, 2010 and 2011)

Site Selection:

Fields with high bedstraw pressure have already been identified. Land owners will be asked to sign a land lease agreement for the plot area required for 3 years. OMAFRA staff Dave Trivers and Daniel Tassé will be responsible to select the area of the field with good weed uniformity and coverage.

Treatments:

The project evaluated 2 application rates 100ml/ac (low rate) and 200ml/ac (high rate) of Milestone at 2 different crop –weed stage 1) early season vegetative (early June) and 2) late flower-early seed (mid august) .

Plot Set up and treatment sizes:

The treatments were 4m wide by 10m long. The plots consisted of 4 treatments plus check strips with replication to reduce the impact of field variability. A back pack sprayer (2m boom, Co2 type) was used to apply the treatments.

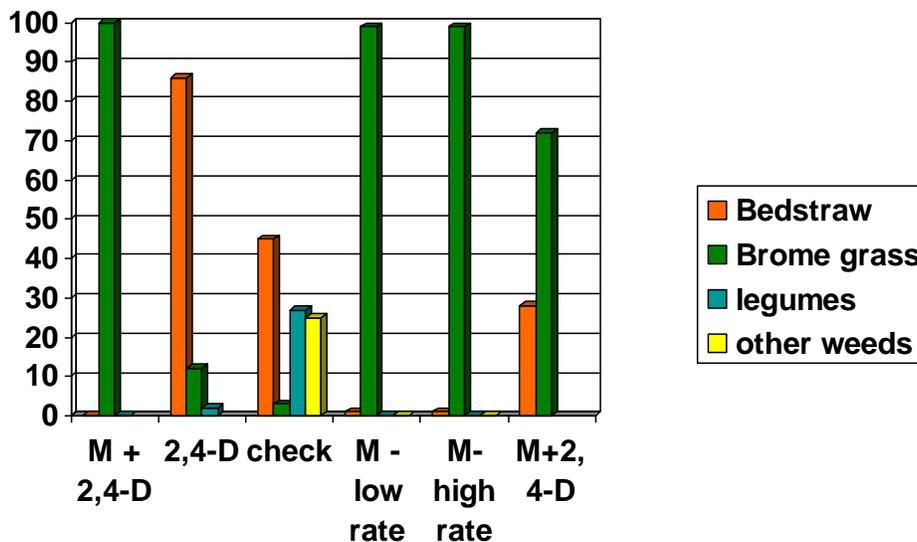
Assessments:

The weed (Smooth Bedstraw) population was documented prior to the application of the treatments. For the first year an assessment of the efficacy of the herbicide was done 30 and 60 days after the treatments were applied. For year 2 and 3 the assessment were done in early spring (end of May) and late summer (end of August). Plant population and weed counts were done by OMAFRA staff and or summer students.

Results:

The visual observations were quite noticeable in the first year (2009) of application. The herbicide " Milestone" worked very well in controlling the established smooth bedstraw. This selective broadleaf herbicide also suppressed other broadleaf weeds and other legumes in the stand. The grasses were untouched and dominated the plots. Brome grass, timothy and quack grass made up the forage stand in the treated plots. No significant differences were observed in the low rate versus higher rate of the herbicide. The addition of 2, 4-D had no impact as a tank mixed. The herbicide 2, 4-D alone had no control on the smooth bedstraw. In year 2 (2010) another herbicide was evaluated in another section (range). The product "Trophy" was applied and the results were poor.

Figure 1. Control of Smooth Bedstraw With Various Milestone Combinations



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This herbicide had no suppression on the smooth bedstraw. The objective was to evaluate an herbicide that might leave the desirable legumes but at the same time remove the smooth bedstraw weed. In the last year (2011) of the trial sections of the plots were clipped and plant segregation count was done to evaluate the control level of the herbicide "Milestone" on the first range. The results are shown in Figure 1.

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