Herbicide Evaluation to Control Smooth Bedstraw in Forages

NE Ontario Regional SCIA Partner Grant
(Interim Report)

Purpose:

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

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. 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: evaluate 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 will be approximately 4m wide by 10m long. The plots will consist of 4 treatments plus check strips. Replication will be done if the field has too much variability. A back pack sprayer (2m boom, Co2 type) will be used to apply the treatments.

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

Results:

1st year evaluation visual control is good with Milestone with both the low and higher rates. We did not see any visual benefits in adding 2, 4-D. We need to assess the weed population in the spring of 2010 (2nd year) and 2011 (3rd year).

Next Steps:

In 2010 we will treat another section with an early application i.e. vegetative stage. We will also du a cost analysis.

Acknowledgements:

Mike Cowbrough weed management specialist OMAFRA, Chandel Gambles OMAFRA summer student, Graham Gambles Regional communication coordinator OSCIA and Kelly Bird intern with NEOSCIA.

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