# Evaluation of Pasture Rejuvenation Methods

## **Purpose**:

To investigate different methods of establishing legumes into existing grass based pastures.

## Methods:

At 3 locations in east central Ontario, a legume seed mixture of alfalfa, red clover, trefoil and white clover, was mixed to achieve equal number of seeds from each species and broadcast or no-till drilled onto rotationally grazed pasture at 11.2 kg/ha (10 lb/ac). Plots received fertilizer P & K to soil test recommendations.

Treatments were:

1- check,

2- fertilizer only,

3- no-till drilled,

4- Aerway at 2.5 degree setting no seed,

5- Aerway at 2.5 degree setting with chain harrow,

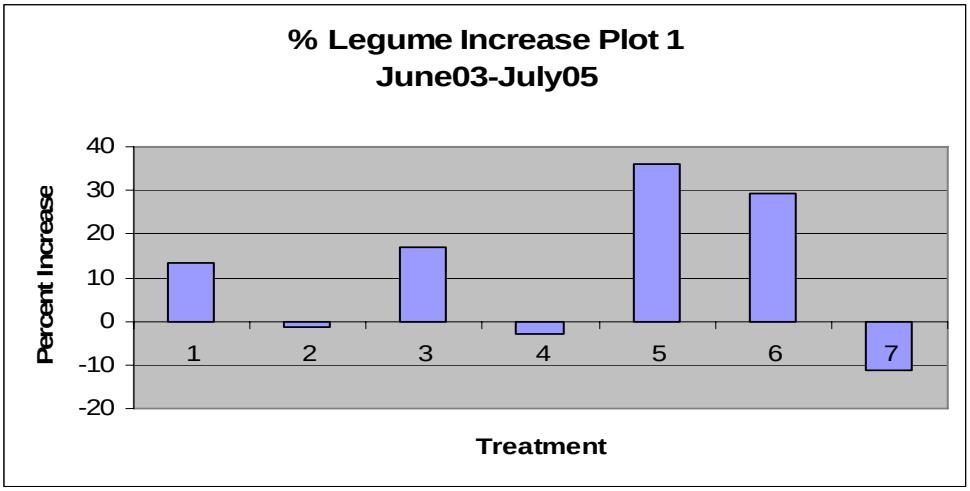
6- Aerway at 5 degree setting with chain harrow

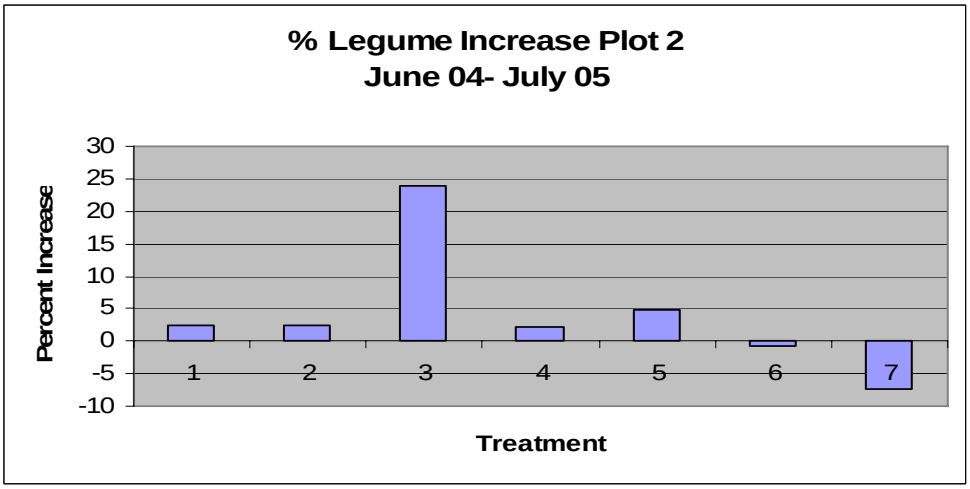
7- chain harrow only.
Seeding occurred in mid to late May.

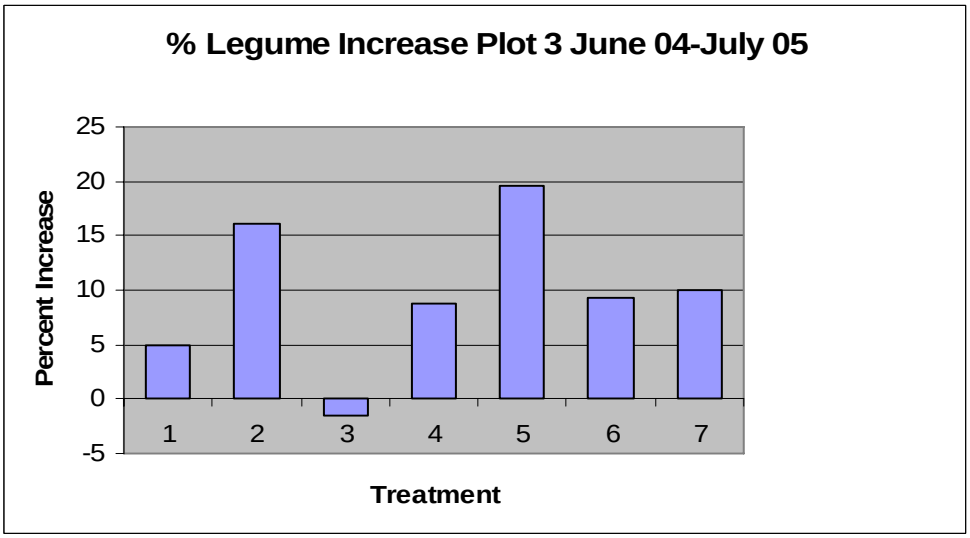
Pasture cages were constructed from hi-tensile welded wire and t-rail posts. Each cage was approximately 1-1.2m (3-4') in diameter. There were 2 cages per treatment at each of the three sites. An area 0.5 by 0.5m (1.5' by 1.5') was hand harvested in late-May, early-July and late-August. Samples were weighed and separated into grass and legume component.

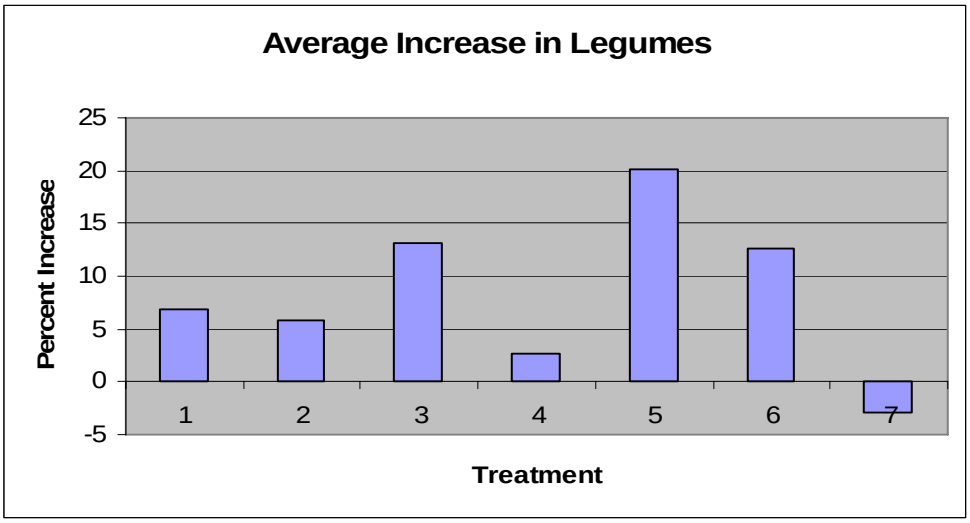
## Results:

Results were extremely variable across the plots with a number of factors having an impact. Competition from existing forage and the very dry summer of 2005 depressed yields significantly. The accompanying graphs give an indication of yields.


% Legume Increase Plot 1
June03-July05
Percent Increase
40
30
20
10
0
-10
-20
1
2
3
4
5
6
7
Treatment


% Legume Increase Plot 2
June 04- July 05
Percent Increase
30
25
20
15
10
5
0
-5
-10
1
2
3
4
5
6
7
Treatment


% Legume Increase Plot 3 June 04-July 05
Percent Increase
25
20
15
10
5
0
-5
1
2
3
4
5
6
7
Treatment




## Summary:

The no-till drill method gave the most consistent response while the other methods that involved soil disturbance (Aerway at 2.5 and 5 degree setting with chain harrows) were more effective than no soil disturbance.

There was a wide variation in the treatment results both within plot and between sites. It is very difficult to draw any reliable conclusions or make specific recommendations. The response was lower than anticipated but suggests that if legumes are to be added to an existing pasture stand, some soil disturbance may improve the establishment of the legumes.

## Next Steps:

This project has now concluded. We will continue to explore methods of establishing legumes in existing pastures. Frost seeding is one method that has a reasonable success rate if the producer is patient. Suppression of existing vegetation prior to legume establishment is another area that should be investigated.

## Acknowledgements:

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## Project Contacts:

Jack Kyle, Provincial Grazier Specialist, OMAFRA, Lindsay, jack.kyle@omafra.gov.on.ca

## Location of Project Final Report:

Final project report is with Jack Kyle