

# Project #8751

## Evaluation of Herbicides on Fresh Market Sweet Corn For control of Wild Proso Millet

**Researcher:** John O' Sullivan

**Institution:** University of Guelph


**Duration of Project:** April 2005 – December 1, 2007



### I. Brief Project Description

Wild Proso Millet is an aggressive annual grass weed found throughout the North Central regions of the United States and parts of Canada. Since the 1970's, when Wild Proso Millet was recognized as a potential weed threat, it has quickly spread to many fields throughout Ontario. Wild Proso Millet is a strong competitor within many row crops, especially sweet corn. Control of wild Proso Millet is difficult because many soil-applied herbicides are not highly effective. Wild Proso Millet continues to emerge late in the season when the effectiveness of many early season applied herbicides is declining. This weed has the ability to change and adapt quickly to take advantage of available resources. It is a vigorous competitor, and if not controlled, can cause serious economic damage in sweet corn. Wild Proso Millet reproduces by seeds. Infestation of this weed can produce up to 3,000 seeds per square metre, while heavy populations can produce up to 45,000 seeds per square metre. Seedlings grow rapidly into fibrous-rooted grasses with upright stems branching from the base. In two to three months, Wild Proso Millet matures and produces viable seed before sweet corn is harvested. Wild Proso Millet is less susceptible to soil-applied herbicides because of its unique growth and development during seedling emergence. The shoot and growing point quickly emerge from the soil, limiting the time these tissues are exposed in the soil for uptake of soil-applied herbicides. Adequate rainfall is crucial for soil-applied herbicides to provide good early season control of Wild Proso Millet. Soil-applied herbicides usually provide only early season suppression. Late season control with available foliar applied herbicides is fair to poor. Single herbicide applications rarely provide consistent season long control of Wild Proso Millet in sweet corn. Sequential herbicide applications are more effective in preventing crop yield loss and minimizing weed seed production.

## II. Project Objectives



1. Evaluate (weed control efficacy and crop safety) new herbicides to control Wild Proso Millet in Fresh market sweet corn with the assistance of off-station cooperators.

2. Evaluate products that are currently available in the US and elsewhere for use on sweet corn that will potentially control Wild Proso Millet.

3. Evaluate new products to enhance weed control efficacy of Wild Proso Millet within adequate crop safety margins.

4. In collaboration with the Ontario Minor-Use Co-coordinator (Jim Chaput), provide product performance data on crop safety and efficacy on a range of herbicides to the AAFC Pest Management Centre to support URMULE submissions to the PMRA

5. Make available reduced risk and safer weed control products for growers of sweet corn by obtaining registration of minor use products under URMULE. These weed control products will offer more effective and lower-risk alternatives to benefit growers.