

Weed Emergence Patterns in Winter Wheat

Purpose:

To determine the emergence patterns of various common weed species in winter wheat. This information along with data on herbicide tolerance and yield benefits from weed control will be used to construct a “weed management decision tool” so that producers can make the most economical decision with respect to weed control in winter wheat.

Methods:

Weed emergence was scouted at 8 different field locations throughout Southern and Western Ontario in the springs of 2005 and 2006. Random samples were taken at 20 different locations within each field and were flagged. Weed emergence patterns were documented over a 6 week period or until flag leaf, since this is the last legal stage for herbicide applications.

Results:

The majority of weeds found in winter wheat fields are annual and winter annual species that have emerged prior to the second week in May (Refer to Figures 1-5). Perennial weeds, such as Canada Thistle, Field Horsetail and Field bindweed tend to emerge in mid to late May (Figure 4, 5) which often has corresponded to the flag leaf stage of winter wheat. Certain species, namely Chickweed, Lamb’s quarters, Prostrate knotweed, Lady’s thumb and ragweed tend to germinate over a longer period of time compared with other species identified.

Figure 1. Emergence patterns of five weed species in winter wheat field scouted in Southern and Western Ontario during the 2005 and 2006 growing seasons.

Weed Emergence in Winter Wheat: 2005 - 2006

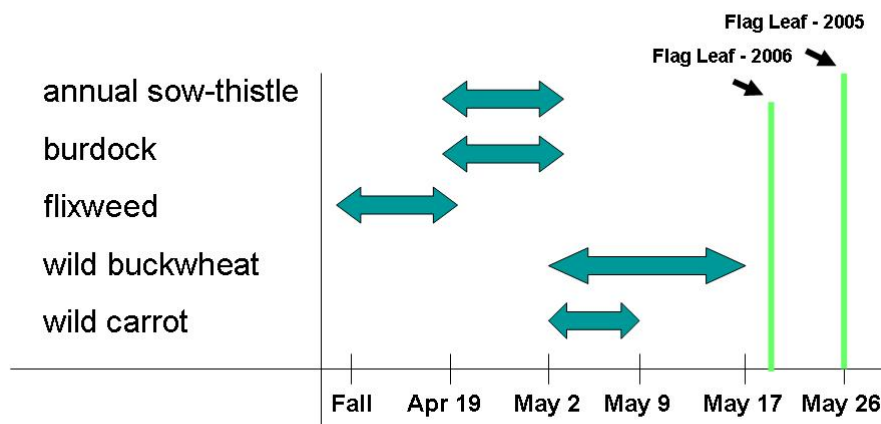
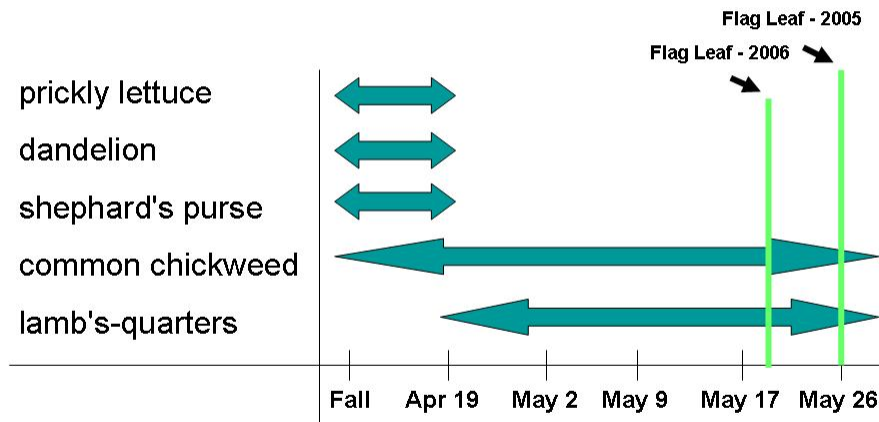


Figure 2. Emergence patterns of five weed species in winter wheat field scouted in Southern and Western Ontario during the 2005 and 2006 growing seasons.

Weed Emergence in Winter Wheat: 2005 - 2006

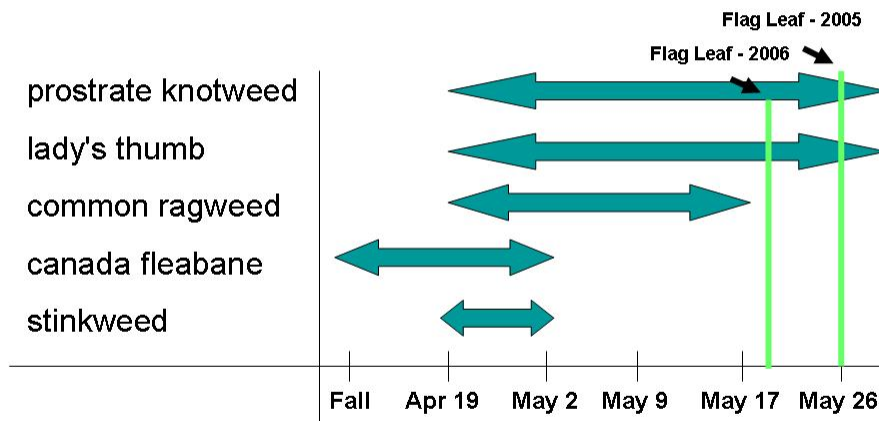


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Figure 3. Emergence patterns of five weed species in winter wheat field scouted in Southern and Western Ontario during the 2005 and 2006 growing seasons.

Weed Emergence in Winter Wheat: 2005 - 2006



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Figure 4. Emergence patterns of three weed species in winter wheat field scouted in Southern and Western Ontario during the 2005 and 2006 growing seasons.

Weed Emergence in Winter Wheat: 2005 - 2006

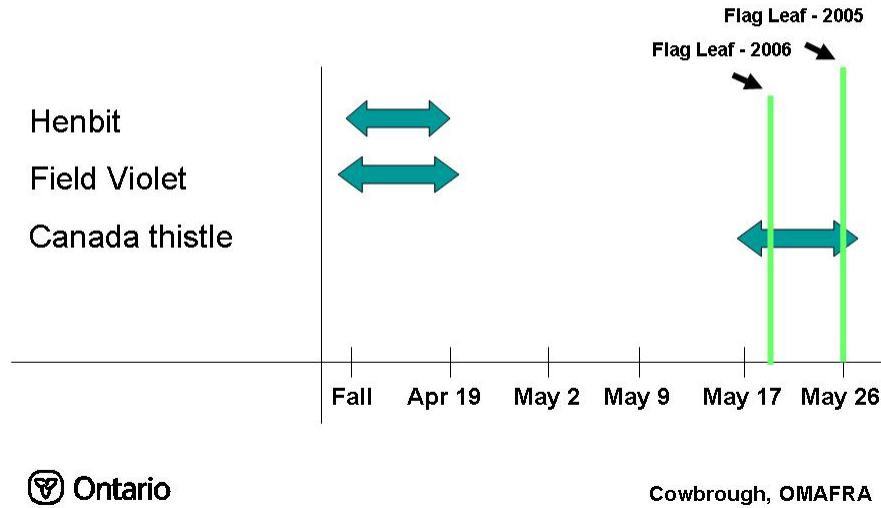
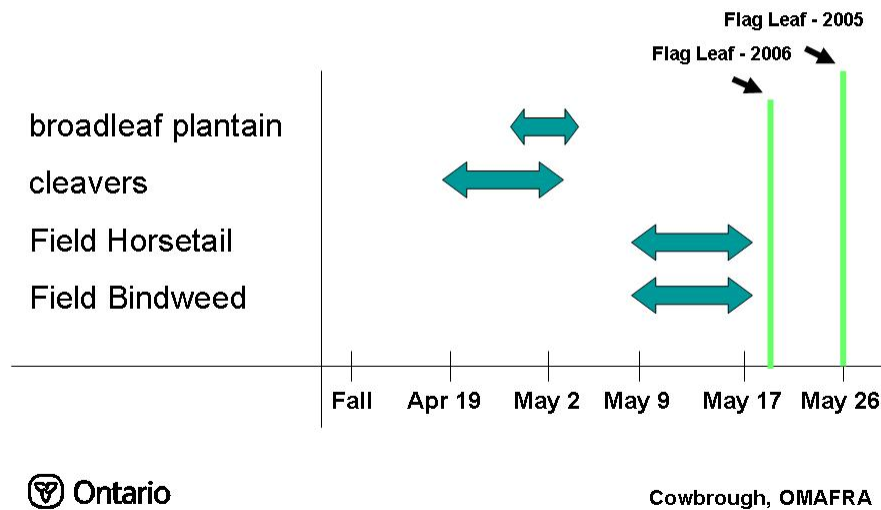


Figure 5. Emergence patterns of four weed species in winter wheat field scouted in Southern and Western Ontario during the 2005 and 2006 growing seasons.

Weed Emergence in Winter Wheat: 2005 - 2006



Summary:

Significance to Cereal Management:

- The majority of weed species have emerged early, herbicide applications to control weeds should be done during Zadok's 20 – 30.
- Delaying herbicide applications to Zadok's 37 (flag leaf) in hopes of controlling later emerging weeds, increases the risk of herbicide induced crop injury and potential yield losses.

Benefit to Ontario Producers: This information along with publicly generated weed efficacy data is being incorporated into a herbicide selector/profit maximization tool for weed management decision making in cereals. The launch of this tool is targeted for the winter of 2009.

Acknowledgements:

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Location of Project Final Report:

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