

INTEGRATED WEED MANAGEMENT WITH ONIONS, INVOLVING WIND EROSION ABATEMENT

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Wind erosion in onions on the muck soil has been a problem in the Bradford Marsh area, Ontario, Canada because of high wind velocities experienced during early spring. Poor snow cover during the winter season allowed for exposed dry soil surfaces, which were prone to wind erosion and the loss of valuable top soil, which added to the erosion problem. In the spring the soil/seed loss occurred between mid-May to mid-June. After that period the onions were sufficiently established to stabilize the soil and prevent wind erosion. Experiments involving the use of barley as a wind abatement nurse crop for onions was investigated by the authors and a former graduate student Doug Marlow, since 1983. Currently the use of barley in the spring, has been widely adopted by Growers, when it is sown either broadcast or in alternate rows at onion seeding.

Barley is relatively fast growing under the cool spring temperatures and rapidly develops a soil cover to consolidate the muck soil with its fibrous root development, and reduces the wind velocity at ground level with its top growth. However, 3 to 4 weeks after barley emergence, it interferes with the adjacent onion seedlings and has to be regarded as a 'weed' rather than a 'nurse' crop. Suppression of the barley was then achieved by using either POAST, FUSILADE or EXCEL, which selectively controlled the barley and allowed the growth of the onion seedlings to proceed. Total kill of the barley occurred 3 to 4 weeks after spraying, thus providing wind erosion control from early May to late June. With broadcast barley, the timing of the graminicide spray was very critical, because of the higher seeding density and the resulting barley/onion competition that resulted.