



EUROPEAN WEED RESEARCH SOCIETY

Proceedings

6th EWRS Workshop on Physical and Cultural Weed Control

Lillehammer, Norway



Hedmark University
College



8-10 March 2004

Finger weeder for cabbage and lettuce cultures

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Finger weeder has changed weed control strategy in many organic vegetable farms, where hand weeding or hand hoeing of planted vegetables has been nearly completely replaced by machine work. To replace herbicides in conventional farming, finger weeder must have acceptable efficacy compared to herbicides. For lettuce growers, however, no herbicides are registered in Finland. Still there has been doubts, whether plants get soiled through finger weeding, thus making the quality of the product commercially unacceptable.

Summer 2002 we compared finger weeder against net harrow and herbicides in cabbage. Field trial 2003 was dedicated to lettuce: we compared different intensities of finger weeding in two different lettuce cultivars. Trials were performed at Uusimaa Rural College as randomized block experiment with two replicates, plot size 1,6 x 20 m. Elomestari Weed Master was used as a tool carrier for goosefoot hoe and finger weeder.

Finger weeder, net harrow and herbicide treatments were compared in cabbage plots. For mechanical control, hoeing was done twice, using goosefoot hoe between the rows (inter-row) and either finger weeder or net harrow within the row (intra-row). Herbicide treatment program was planned and realized by Berner Oy, Helsinki and no hoeing was done. Measurements included plant density and yield, both crop and weeds.

All weed control treatments significantly increased the cabbage yield, whereas between mechanical and chemical control there was only small differences. Additional hand hoeing slightly improved the mechanical weed control, but was not necessary for acceptable result.

In lettuce experiment, two intensities for finger weeding was compared to simple inter-row hoeing: gentle, where fingers are appr. 1 cm distance from each other, and intensive, where they overlapped appr. 2 cm. Besides crop and weed yield, also soiling of the lettuce was scored.

Very few weeds emerged at lettuce plots and no differences between the treatments were observed. Finger weeder had no effect on lettuce quality, even intensive treatment left the crop undamaged.

Finger weeder proved to be an effective weed control tool for planted cabbage and lettuce. Even in conventional farming it is a realistic alternative to chemical control.