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CONTROL EFFECTS ON CREEPING THISTLE (*CIRIUM ARVENSE* (L.) SCOP.) BY SELECTIVE MOWING IN SPRING CEREALS

Anneli Lundkvist, Theo Verwijst and Hugo Westlin, *Swedish University of Agricultural Sciences, Department of Crop Production Ecology, P.O. Box 7043, SE-75007 Uppsala, Sweden; anneli.lundkvist@slu.se*

Weed control of creeping thistle (*Cirsium arvense* (L.) Scop.) is a great challenge in organic farming. A balanced crop rotation is very important but direct weed control methods are often necessary to use. A selective mower (Weedcutter), which cuts *C. arvense* in growing cereals without damaging the crop, has been developed in Sweden, and is evaluated in an ongoing research project. The hypotheses are that selective weed mowing (i) decreases the ability of the weeds to compete and reproduce in a crop, (ii) decreases the long term development of the weed populations, and (iii) increases the crop yields. Two field experiments and two outdoor pot experiments have been performed 2008–2009 in Sweden. In the field experiments, the effects of selective mowing on *C. arvense* and spring wheat were determined by mowing at two different development stages of *C. arvense*. In pot experiment 1, effects of mowing two years in a row on *C. arvense* and spring barley were studied. In pot experiment 2, effects of different machine settings on spring barley were evaluated. Statistical analyses were done by ANOVA and comparisons were made by Student *t*-test. Preliminary results from the pot experiment 1 showed that growth of *C. arvense* was significantly reduced after mowing two years in a row (38–49%, $P=0.001$) compared with the control. When competition from spring barley was added, the reduction was even higher (66–79%, $P=0.001$). Also crop yields were significantly higher after mowing (76–94%, $P=0.03$) compared with the control. Machine settings had strong effects on the crop. A more aggressive setting caused stronger damage on the crop at later development stages. In the field experiments, no significant effects were obtained on the crop yield due to large amounts of *C. arvense*. We conclude that selective mowing combined with crop competition decreases the abundance of *C. arvense*.