



EUROPEAN WEED RESEARCH SOCIETY

Proceedings

**6th EWRS Workshop on
Physical and Cultural Weed Control**

Lillehammer, Norway



**Hedmark University
College**



8-10 March 2004

Lay-down working cart improves efficacy of hand weeding

P. Leinonen¹ & V. Närkki²

¹Elomestari Ltd, Partala, FIN-51900 Juva, Finland

Email: petri.leinonen@elomestari.fi

²Häme Polytechnic, Lepaa, FIN-14620 Lepaa, Finland

Hand work on (organically managed) horticultural fields is often unavoidable. Hand planting, hand weeding, and harvesting of strawberries and cucumbers are examples of tasks which are hard, if not impossible, to mechanize. Manual weed control is often the major limiting factor for organic vegetable production on a farm level.

We have developed a Crawler, a wagon designed to support and transport a worker on the field. Our construction is a three-wheel, electrically powered transporter. We aim to quantify labour-saving and labour-easing effects of the Crawler.

During the summer 2000, we did different hand works on horticultural fields in different farms. In each time, work output of 30 min periods with and without Crawler were recorded. Several people, varying from experienced Crawler users to beginners, have been measured. Measurements include transplanting, hand weeding and picking of strawberries. Only data on hand weeding is presented.

The familiarity of the worker with the Crawler had a major effect on the efficiency of the Crawler. Whereas the experienced Crawler users improved their work performance on an average by 32 %, no effect was noticed when beginners worked with the Crawler.

Although many farmers argued, that with a low weed density (and therefore fast weeding) the Crawler helps more than with slow moving on the field (connected to high weed density), measurements did not support their observations. However, the variation between the measurements was large.

Most of the farmers who have used the Crawler considered the 30 min measurement as too short. According to their opinion, lower exertion to knees and back enable longer working days and weeks, thus improving the working capacity and well-being in a long run. This is difficult to measure and hard to calculate in economical terms.