

Agricultural and Food Science - abstract



Vol. 14 (2005), No. 2, p. 189-201

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Weed flora and weed management of field peas in Finland

Keywords biodiversity, bentazone, herbicides, metribuzin, organic farming, *Pisum sativum*, Redundancy Analysis, variation partitioning, weeds, weed control,

Abstract

The composition of the weed flora of dry pea (*Pisum sativum* L.) fields and cropping practices were investigated in southwestern Finland. Surveys were done in 2002–2003 in 119 conventionally cropped fields and 64 fields under organic cropping. Herbicides were applied to 92% of conventionally cropped fields where they provided relatively good control but were costly. Weeds were controlled mechanically only in five fields under organic production. A total of 76 weed species were recorded, of which 29 exceeded the 10% frequency level of occurrence. The average number of weed species per field was 10 under conventional cropping and 18 under organic cropping. The most frequent weed species in both cropping practices were *Chenopodium album*, *Stellaria media* and *Viola arvensis*. *Elymus repens* was the most frequent grass species. The difference in species composition under conventional and organic cropping was detected with Redundancy Analysis. Under conventional cropping, features of crop stand and weed control explained 38.7% and 37.6% of the variation respectively. Under organic cropping the age of crop stand and field location (y co-ordinate) respectively explained best the variation. Weeds could be efficiently managed with herbicides under conventional cropping, but they represented a significant problem for organic production. Mixed cultivation of pea with cereals is recommended, particularly for organic cropping, as it favours crop competition against weeds.

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Update 28.10.2005.

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