UNDERSOWN EFFECT IN WEED MANAGEMENT IN ORGANIC CROPPING SYSTEMS

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Abstract

The main reason for controlling weed abundance in agricultural crops is the risk for qualitative and quantitative reductions in crop yields. Although there are no simple standard solutions available for weed control in organic agriculture, however, some cultural practices—in particular, undersow in spring cereals—can be critical components of weed management. To study this thesis, specific research has been carried out in the CORE Organic Plus PRODIVA project in six northern European countries—Denmark, Finland, Germany, Latvia, Poland & Sweden. Density of weed species were assessed in 109 organic fields situated in different agro–ecological conditions of region. The highest number of weed species fixed in surveyed fields was 93 (in Denmark). The most challenging weed species in organic spring sown cereals in the geographical area of the Baltic sea fixed in all project partner countries were *Chenopodium* spp., *Polygonum* spp., *Elymus repens, Cirsium arvense.*, *Centaurea cyanus, Galeopsis* spp. and *Eguisetum arvense*. *Galium* spp. were associated with cropping of wheat. It was found that cover crops undersown in spring cereals effectively suppress post-harvest weed growth, if properly established, and provide that a dense and fast growing canopy can be achieved. Especially, cover crop mixtures with clover species undersown in cereals in spring produce dense and suppressive canopies. Crop species mixtures, such as cereals + grain legumes change the growth rate and architecture of crop canopies. Noxious weed species were better suppressed as compared to sole crops.

Keywords: *weed management, spring cereals, organic farming.*