**Problematic weed species in organic arable agriculture around the Baltic Sea**

**An expert database**

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**Introduction**

Weeds remain the main constrain for organic crop production. However, the study of Turner et al. (2007) showed, this increased weed cover, within manageable limits, is not considered a major concern to the organic farmers and can prove positive for ecosystem services. What tends to pose a challenge is the build-up of certain highly competitive weed species which require high input control measures. Therefore we consider these species to be problematic. Especially perennial can be a real challenge in organic arable systems (van Elsen, 2000).

**Methods**

The CORE Organic PRODIVA project, a collaboration between northern European weed research institutions, aims to improve utilization of crop diversification strategies for weed management and still maintain a diverse weed flora. To kick-start the research an expert database was compiled to create an understanding on local problematic weed species, in organic cereal production in the Baltic Sea region.

A literature review was conducted in the national literature from all countries involved in the PRODIVA project (DE, DK, SE, FI, LV and PL). Sources considered were scientific literature, specialized literature, grey literature and the knowledge of even services and specialist in the field. Studied was which species were considered ‘problematic’ considering crop-weed competition, weed cover and controllability. This focussed on organically grown spring sown cereals. From this, information on weed species lists were composed based on the frequency of a weed species mentioned and how problematic they are. The weed species were divided into five types (Table 1) based on the categorization of character trades from Holzner and Glauinninger (2005), so to make identification more comprehensive.

The results and information have been prepared as a flyer that will be made accessible to stakeholders, such as extension services and farmers in their local languages.

**Results and Discussion**

After analysing the data and listing the weed species (Table 1), the species were divided in five groups, based on competition trades. Although the types are based on the system proposed by Holzner and Glauinninger (2005) in the more southern continental region of Austria, the types described here are corrected for the more northern boreal- maritime climate found in the Baltic Sea region.

Most of the most problematic weeds stem from the categories of Bodybuilders and Indestructibles, this most likely due to their high competitiveness and amount of control measures required. Species belonging to these weed types are mentioned to be problematic in the majority of countries. The country specific species are more often member of the Early Birds or Plebeians or even Grassland species. This is probably caused by the distribution of weed species and their specific adaption to their local environment, such as climatic conditions and soils. We have to consider that the competitiveness of weeds relies heavily on local conditions as well, but the similarities are noteworthy.

For more information on the project PRODIVA please visit the website: http://coreorganicplus.org/research-projects/prodiva/. The project runs from 2015-2018.

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