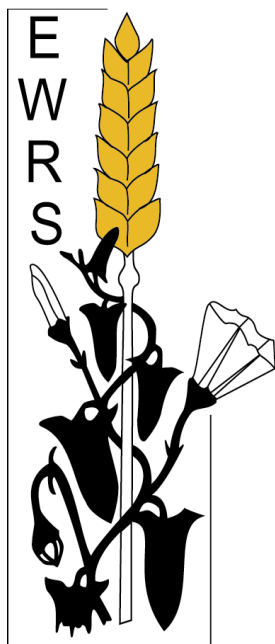


PERENNIAL WEEDS

A growing problem

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Key perennial weeds in arable crops in the Nordic countries

Jukka Salonen*, Lars Andersson, Christian Andreasen & Kirsten Semb Torresen

**MTT Agrifood Research Finland, FIN-31600 Jokioinen, Finland.*
e-mail: jukka.salonen@mtt.fi

Our review on the most common perennial weeds in the Nordic countries draws on 1) a Nordic/Baltic joint desk-top study done in 1997-99, 2) information from national weed surveys and 3) expert opinions from Denmark, Finland, Norway and Sweden.

Cereals are the predominant crops in the Nordic countries, where temperature represents a major constraint on types of cultivated crops and weed species associated with prevailing cropping systems. The relative importance of grassland increases towards the north in Norway, Sweden and Finland. Similarly, the dominance of spring-sown annual crops increases from south (DK) to north.

The weed species of greatest economic importance in the region is *Elymus repens* (syn. *Agropyron repens*, *Elytrigia repens*). Its relative importance has increased, as demonstrated e.g. in the national weed surveys of FI from the 1960s until today. *E. repens* is a problem weed also in NO and SE despite common use of glyphosate. In DK, however, the occurrence of *E. repens* has declined in the main crops since the 1960s, probably because of regular use of selective graminicides and the non-selective glyphosate, but it is still considered to be a noxious weed. In the countries north of DK the short period when glyphosate can be applied and the less favourable climatic conditions after harvest weaken the control effect.

Other troublesome perennial grasses are volunteers such as *Lolium perenne*, *Poa trivialis* and *Poa pratensis*. These species can pose serious problems in grass seed production (DK) by contaminating seed lots. In direct drilling, *Phleum pratense* also occurs as a volunteer weed (FI).

The most common broad-leaved perennials are *Cirsium arvense* and *Sonchus arvensis*. They thrive particularly well in organic cropping systems, but also in conventional cereal production because the early application time of the commonly used sulphonylureas is not optimal for their control. Moreover, the use of more effective phenoxy acid herbicides has been restricted (DK) because of the risk of leaching. The increasing area sown to winter crops results in less time between harvest and sowing, which in turn means less thorough soil cultivation. This favours perennial, vegetatively propagated species such as *Artemisia vulgaris*, which thrives also in fields with reduced or no-tillage.

The area of grassland has decreased and become restricted to particular regions in each country. The characteristic grassland weeds (e.g. *Achillea millefolium*, *Ranunculus repens*, *Taraxacum* spp.) have become less dominant in crop rotations. However, farms with livestock encounter problems with some perennial species like *Juncus* spp. (NO) and *Rumex* spp., which have increased substantially during recent decades (in SE).

The composition of the weed flora is slowly but continuously shifting, reflecting adaptation to climate changes as well as to alterations in cropping systems and cropping practices. Perennial weed species are likely to maintain their key status both in terms of their economic importance and their challenging control.

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Table 1. Ranking of some perennial weed species in the Nordic/Baltic region according to Salonen et al. (2001a). Species marked with 1 cause minor problems, but they have to be controlled sporadically. Species marked with 2 cause problems in most years and have to be controlled regularly. 0 indicates weeds of no economic importance or not found in the country. Based on expert opinions from each country and related to the situation at the end of the 1990s.

| Weed species | COUNTRY | | | | | | | |
|---|---------|----|----|----|----|----|----|-----|
| | EE | LT | LV | DK | FI | NO | SE | PL |
| <i>Achillea</i> spp. | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 1 |
| <i>Alopecurus geniculatus</i> | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 1 |
| <i>Anthriscus sylvestris</i> | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| <i>Artemisia vulgaris</i> | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 |
| <i>Cirsium</i> spp. | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1-2 |
| <i>Cerastium arvense</i> | | 2 | 1 | 1 | 0 | 1 | | 1 |
| <i>Elytrigia repens</i> = <i>Agropyron repens</i> | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1-2 |
| <i>Equisetum arvense</i> | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1-2 |
| <i>Mentha arvensis</i> | 2 | 2 | 1 | 1 | 0 | 1 | | 1 |
| <i>Plantago major</i> | | 2 | 1 | 0 | 1 | 1 | | 1 |
| <i>Ranunculus</i> spp. | 2 | 1 | 1 | 0 | 1 | 2 | 2 | 1 |
| <i>Rumex</i> spp. | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 |
| <i>Sonchus arvensis</i> | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| <i>Stachys palustris</i> | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 |
| <i>Taraxacum</i> spp. | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 1-2 |
| <i>Tussilago farfara</i> | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1-2 |
| <i>Urtica</i> spp. | | 2 | 1 | 1 | 0 | 1 | 1 | 1-2 |