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FLEX-TINE WEED HARROWING IN SPRING CEREALS

DID YOU KNOW?

Soil tillage with flex-tine weed harrow can control, with correct timing, up to 80% of annual weeds

PREREQUISITES FOR SUCCESSFUL APPLICATION

- Well levelled soils with few stones and crop residues
- Well prepared seedbed
- Workable soils, heavy clay soils may become too cloddy
- Uniform crop sowing at a constant depth of ca. 3-4 cm
- Good growing conditions stimulating fast and vigorous crop growth
- Preferably sunny and dry weather during and after application
- Moderate weed pressure
- Preferably low numbers of tall-growing weed species, notably
  - Cruciferous weed species
  - Hemp-nettle (*Galeopsis tetrahit)*
  - Annual grasses

Figure 1 - Flex tines create soil disturbance which causes lethal uprooting and/or soil coverage of weeds. (Photo by Jesper Rasmussen)

IMPLEMENTATION

- Pre-emergence harrowing at max. 2 cm soil depth shortly before crop emergence. Controls weed seedlings until the first leave stage.
- Post-emergence harrowing at the 3-4 crop leave stage (BBCH stage 13-14) but with the majority of weeds at the cotyledonous stage. Avoid covering more than 20% of the crop leaves with soil.
- Selective harrowing at the beginning of crop stem elongation (BBCH stage 30-31). Controls shallow and weakly rooted species with prostrate (e.g. Common Field-speedwell - *Veronica persica*), tufted (e.g. Common Chickweed - *Stellaria media*) or decumbent (e.g. Cleavers - *Galium aparine*) growth habits.
- Harrowing strategy. The three harrowing principles (pre, post and selective) can be combined for improving effectiveness against troublesome species such as Charlock (*Sinapis arvensis*) and annual grasses. Weed control effects reaching 80% against annual weeds is possible.

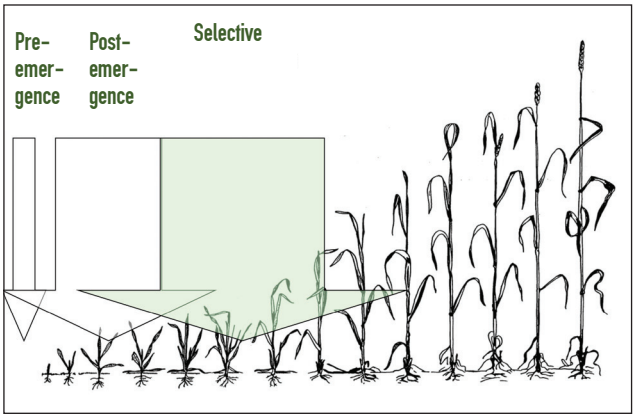

Figure 2 - The three principles of weed harrowing in spring cereals

Figure 3 - A marked size difference between crop and weed plants is needed for successful conduction of weed harrowing: control of small weeds only requires low to moderate aggressiveness of harrowing which spares the crop. (Photo by Jesper Rasmussen)

Figure 4 - A large Charlock (*Sinapis arvensis*) requires aggressive harrowing settings for control – inevitably resulting in crop injuries. (Photo by Jesper Rasmussen)

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