Charlock Management in Organic Systems

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Where does it occur and why is it a problem?

Charlock in cereal

- Charlock is a member of the mustard family and a common annual weed of spring sown crops
- It prefers clay and heavy soil and chalky loams but is very widespread
- In some situations charlock can cause serious infestation of winter arable crops
- The seed pods and seeds can be poisonous to livestock
- Charlock seeds that contaminate oilseed rape at harvest will increase the linolenic and erucic acid levels in extracted oil
- Charlock is a host of the turnip fly, turnip-gall weevil, turnip flea beetle, cabbage root fly, club root, diamond back moth and leather jackets

Biology, persistence and spread

- Seedling emergence takes place from October to July with a peak in March-April
- Rainfall events and soil temperature have a big influence on the timing of seedling emergence
- A deep tap rooted weed
- Plants are self-incompatible and cross-pollination is performed by a variety of insects
- Charlock produces bright yellow flowers as early as April through to July
- Charlock can produce seed for 3 months of the year
- Seed production varies with plant size, around 3000 for an average plant
- Scarification of the seed coat increases the level of germination
- Seed has been recorded as viable after 60 years in the soil

How can it be prevented?

- Avoid return of fresh seed at crop harvest and the subsequent re-introduction of charlock seed in crop seed, straw and farmyard manure
- The presence of an autumn or spring cereal crop will reduce seed production by charlock but some cultivars are more effective than others
- The weed is less of a problem in autumn than spring-sown crops
- In conditions of moisture stress charlock becomes less competitive against spring wheat. The seeds produced by the moisture stressed plants are small and have little dormancy
- Oats are more competitive than other cereals, peas and particularly lupins are very susceptible to charlock

Direct control options

A rotary hoe suitable for inter-row cultivation to control charlock

- Delay sowing and use a stale seedbed
- In some circumstances sowing a spring cereal earlier e.g. February or a winter crop later e.g. November will reduce the population of competitive charlock plants
- Use harrows before weed roots have established
- The harrowing of cereals and hoeing of root crops will help to reduce a bad infestation
- Early harrowing of fields being prepared for root crops will induce charlock germination allowing the mechanical destruction of seedlings during subsequent seedbed preparations
- Where land is infested with charlock the soil may be cultivated at regular intervals to stimulate and kill successive flushes of charlock seedlings
- Stubble cleaning is an effective way of dealing with freshly shed charlock seed. The surface soil is cultivated no deeper than 5 cm and the operation repeated at 14-day intervals

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Organic Weed Management OF 0315

For further information on weed management go to www.gardenorganic.org.uk/weed-management. There you will find the following:

- Advice on over 130 individual weeds, from Black Grass to Yarrow www.gardenorganic.org.uk/weeds-list
- Advice on cultivation controls, such as crop rotation, tillage and hygiene www.gardenorganic.org.uk/cultural-weed-controls
- Direct control methods, such as mulching and mechanical control www.gardenorganic.org.uk/direct-weed-controls
- Crop weeding strategies, in field vegetables, fruits and grasslands www.gardenorganic.org.uk/crop-weed-management-strategies
- Further reading in research papers.

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the national charity for organic growing

Formerly HDRA.

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