Dormancy of vegetative reproduction in some perennial weeds

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In a joint experiment between Norway, Denmark, Finland and Sweden the dormancy of vegetative reproduction in *Cirsium arvense*, *Sonchus arvensis* and *Elymus repens* was studied during the latter part of the vegetation period. The aim of the study was to achieve a more efficient control of these weed species by knowing their reproduction behaviour in the autumn.

In each country, two clones of each species were collected from fields and then propagated in buckets during 2001. The propagated material was kept in a storage during the winter under a constant temperature of +1–2 °C from October 2001 to April 2002. After that each clone was divided and replanted into buckets for reproduction. The roots/rhizomes were cut into 10 cm pieces and planted at a depth of 1–2 cm, eight pieces/bucket. The buckets were placed outdoors and nutrients and water were given as needed for normal development.

The dormancy tests were conducted in small pots. The test started 2nd July 2002. Roots/rhizomes from two buckets of each clone were replanted in small pots every fortnight. Roots/rhizomes from each bucket were cut into 5 cm pieces and planted in six small pots, ten pieces in each pot, at a depth of 1 cm. After replanting, 3 pots were placed in a dark room with a constant temperature of +2 °C for 4 weeks and thereafter for 4 weeks in +18 °C (cold-warm treatment) illuminated room. The other 3 pots were taken directly into a constant temperature of +18 °C for 4 weeks (warm treatment).

During the dormancy test, the number emerged shoots was counted once a week in the +18 room and after 4 weeks at least following assessments were done: number of shoots (living and dead), number of emerged shoots for each root and rhizome fragment and dry weight of shoots. Some species-specific characteristics were found:

Cirsium arvense:
- Warm and cold-warm treatments: minor differences within and between the clones
- Differences between the clones in starting of dormancy
- Some dormancy was found in September-October

Sonchus arvensis:
- Dormancy increased gradually in August - late September but decreased in October
- Cold-warm treatment seemed to break dormancy in some clones
- Differences in the extent of dormancy between the clones

Elymus repens (tested only in Finland and Sweden):
No dormancy was found and no differences between warm and cold-warm treatments

The three perennial weeds had different dormancy behaviour in the autumn. Consequently, the vegetative reproduction after weed control measures will depend on species. Mechanical control is most feasible against *E. repens* as it was fully active throughout the latter part of growing season, producing new shoots whenever disturbed.

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