



NON-CHEMICAL MANAGEMENT OF COUCH GRASS (*ELYMUS REPENS*) AND OTHER PERENNIAL WEEDS

Björn Ringselle (bjorn.ringselle@ri.se)

Research Institutes of Sweden
Agriculture and Food



Photo: Björn Ringselle



agronomy



Review

A Review of Non-Chemical Management of Couch Grass (*Elymus repens*)

Björn Ringselle ^{1,2,*}, Benny De Cauwer ³, Jukka Salonen ⁴ and Josef Soukup ⁵

The perennial problem

- Belowground storage organs
 - Vegetative and seed reproduction
- Post-harvest growth
- Highly competitive



Photo: Björn Ringselle

Current control

- Systemic herbicides (e.g., glyphosate)
 - Fewer and fewer herbicides in the EU - glyphosate under scrutiny
- Intensive repeated tillage
 - Energy and time intensive, increased risk to soil
 - Alternatives under development (e.g., root-cutters, Kvikfinn)
- Repeated defoliation in competitive crops such as leys
 - Effective against some perennial species (e.g., creeping thistle, but not against others such as docks)
 - Need to include ley in rotation, or precision treatments in other crops

Root cutters



Photo: Erik Ekre



Photo: Lars Olav Brandsæter

New project: SUSWECO

Current control

- Alternatives that destroy aboveground biomass (e.g., flaming, air-propelled grit)
 - Need to be precision-applied and be repeated -> work-intensive and expensive
- Alternatives that can destroy belowground biomass (e.g., electricity, microwaves, solarisation, hot water)
 - Slow
 - Energy-intensive and great risk to non-target organisms

Future of perennial weed control

- More precision-application
- New mechanical implements
- More conservative use of glyphosate
 - Precision-application
 - Only optimal conditions
 - Integrated strategies
- **Cropping system design + maintain a large tool-box**