Grass weed challenges in crop establishment systems

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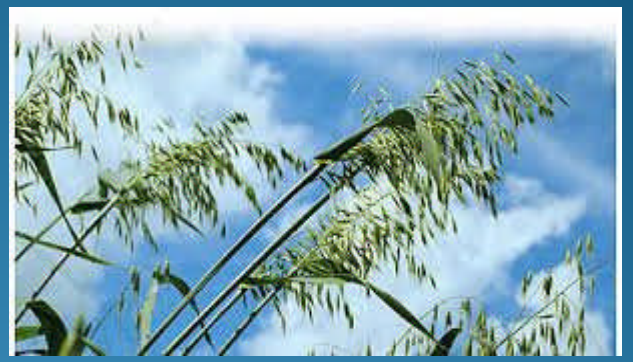
Introduction

- BSc (Hons) Agriculture with Mechanisation
- Arable growers and agricultural contractors
  - Winter and spring cereals
  - Break crops
  - Silage harvesting
  - Experimenting with catch and cover crops

Grass Weeds

- Wild oats; most prevalent
- Annual Meadow Grass
- Sterile Brome
- Canary Grass
- Scutch
- Blackgrass



Grass Weed Control

- Five methods:
  - Preventative
  - Cultural
  - Mechanical
  - Biological
  - Chemical

Different establishment systems

- Plough-based (inversion)
- Min-till / reduced-till (non-inversion)
- Strip-till
- Direct drilling, autocast and ultra low disturbance systems




Ploughing

- Single and double stale seedbeds, then plough
- Effective cultural control of grass weeds

- But, ploughing has its own disadvantages

Min-till

- Stale seed beds with chemical control
- Offers management and environmental benefits, but at a cost...
- Increased reliance on chemical control
- Risks and logistics of pre-emergence spraying
- Risks associated with sulfonylureas
- More suited to spring cropping?

Strip-till

- Straw harrow, glyphosate, sow, post-emergence spray
- Convenient for sowing OSR
- Paradox re: drilling date
- *But sterile brome is a threat*
- Increased reliance on chemical control
- Pre-emergence sprays - variable seeding depth/coverage
- Increased reliance on expensive sulfonylureas

Current thinking - Compromise?

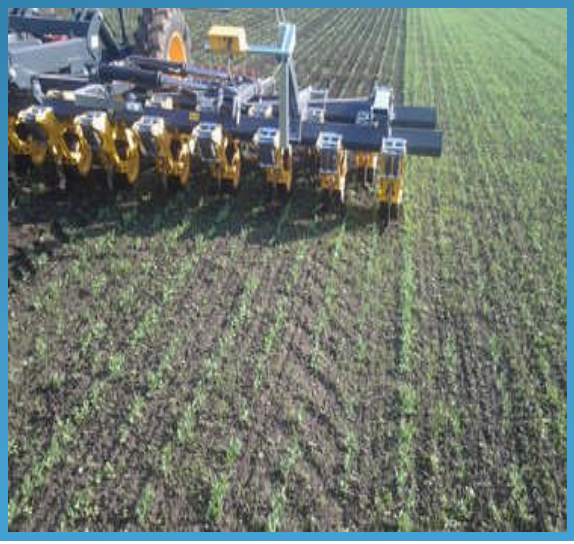
- Incorporating different philosophies
- Importing manures to help build OM and soil biological activity
- At least maintain or increase OM
- Rotations (complicated by three crop rule)
- Recognition of benefits of cover and spring cropping
- Optimise chemical control

The future

- Ploughing, as part of an appropriate cultivation regime and rotation, in conjunction with stale seedbeds, catch or cover cropping, with consequent spring drilling, should provide efficient cultural weed control which, augmented by judicious use of appropriate chemicals, should provide sustainable weed control into the future
- Potential for new crops with different harvesting dates; AD
- New markets for spring crops
- New chemistry and technology

System Cameleon

- Integrated seed drill & inter row hoe
- In crop cultural weed control
- Utilises RTK guidance with on-machine precision guidance (think Laser Pilot) to provide cultural in crop weed control
- Potential – virtually eliminate chemical weed control whilst offering potential to companion crop and place fertiliser



Conclusion

- Absolutism does not work – compromise where necessary
- Rotations must produce marketable crops
- Rotation must consider short-term finances as well as long-term goals
- Spring cropping – potential for cultural weed control but...

...must respect available markets and gross margins

- Legislation can be restrictive
- Every farm and situation is unique

Thank you

Any questions?