

Spring lupins in UK agriculture – experiences and challenges

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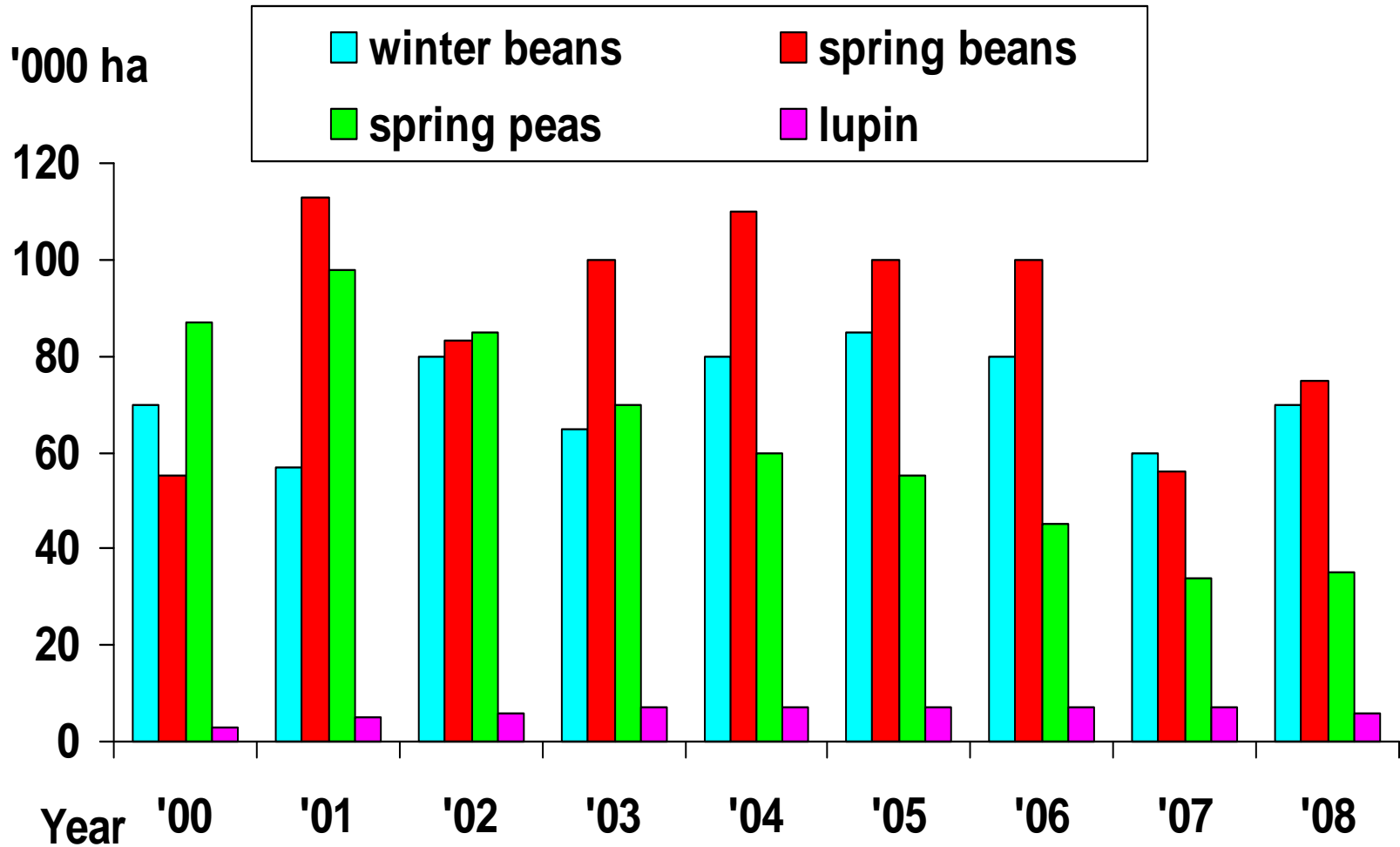
Processors and Growers
Research Organisation



Pulse crops in the UK

- Combining peas
 - Human consumption
 - Animal feed
 - Pet food
- Field beans
 - Export human consumption
 - animal/fish feed
- Lupins
 - On farm feeding – grain/forage

UK Pulse Area



Limitations to crop are increase

- pH tolerance – most arable land in UK is alkaline
- Late maturity – need to clear field to establish winter wheat crop
- Variable yield
- Inadequate weed control

advantages

- On farm high protein feed
- GM free
- Competitive crop with imported soya cost
- No nitrogen fertiliser requirement

Lupin types in the UK

- Albus
- Luteus
- Angustifolius

- All spring varieties because of poor experiences with winter sown lupins

Variety trialling

- Spring trials carried out since 2002 to included all species
- Three sites each year
- West East and Southern England
- Yield maturity date and protein assessments
- Results published in Pulse Agronomy Guide
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UK Comparative yields

- Peas
 - 4.8 – 5.0 t/ha
- Field beans
 - 4.0 – 4.5 t/ha
- L albus
 - 3.3 t/ha
- L luteus
 - 2.4 t/ha
- L angustifolius
 - 2.5 t/ha

Alkaline tolerance: Boregine

Bora



Alkaline tolerance : Boregine

Volos



Weed control

- Herbicides limited to those approved for use in peas and beans
- Post emergence products are not crop safe
- EU is reviewing all pesticides – will reduce number of actives for all crops

Herbicides available for lupins

- Pre-emergence
 - Skirmish (isoxaben + terbuthylazine)
 - Stomp (pendimethalin)
 - Centium (clomazone)
- Post emergence
 - graminicides

L albus untreated



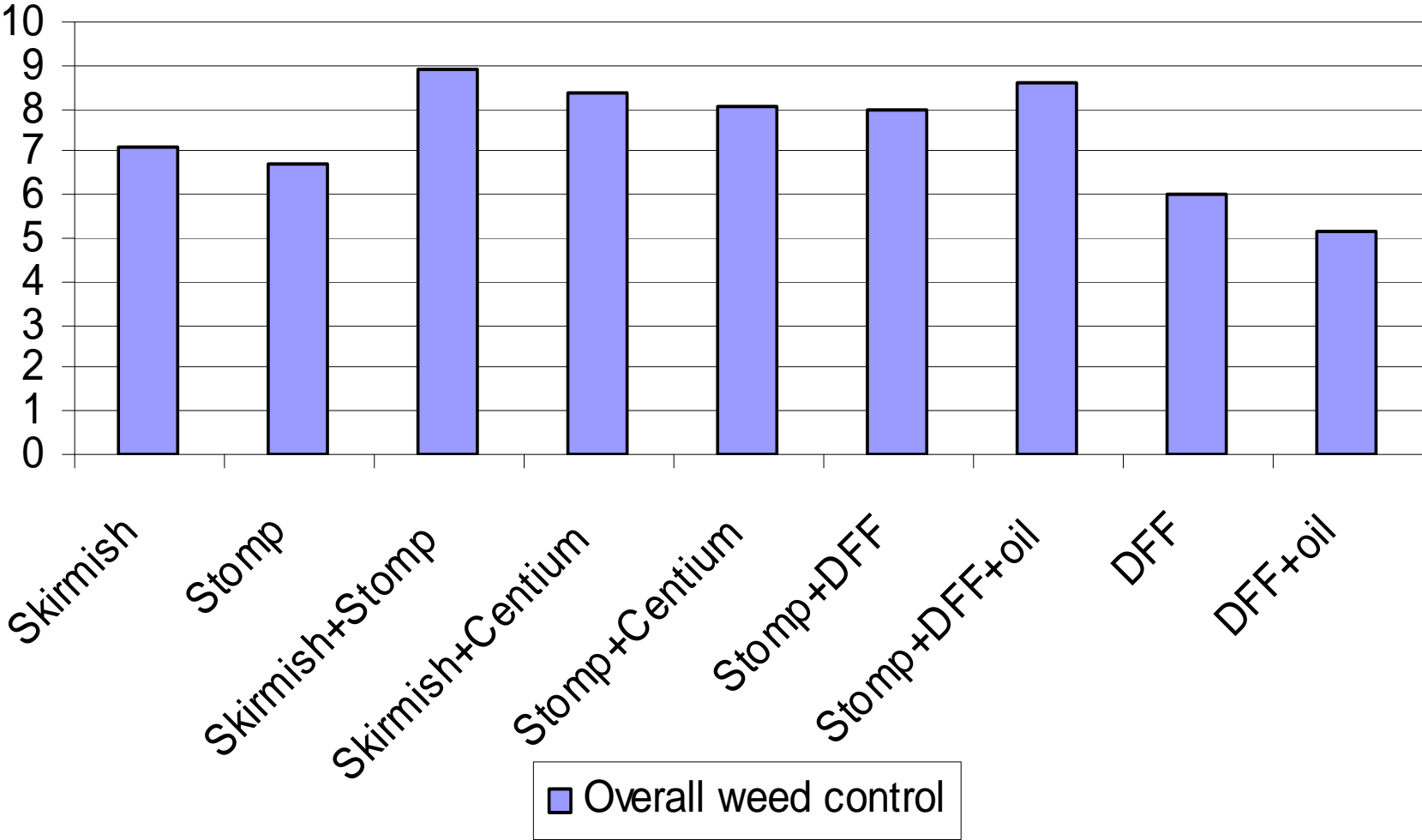
L albus Skirmish



L albus Skirmish + Centium



L albus Landbeach 2008



L. angustifolius untreated



L. angustifolius Skirmish



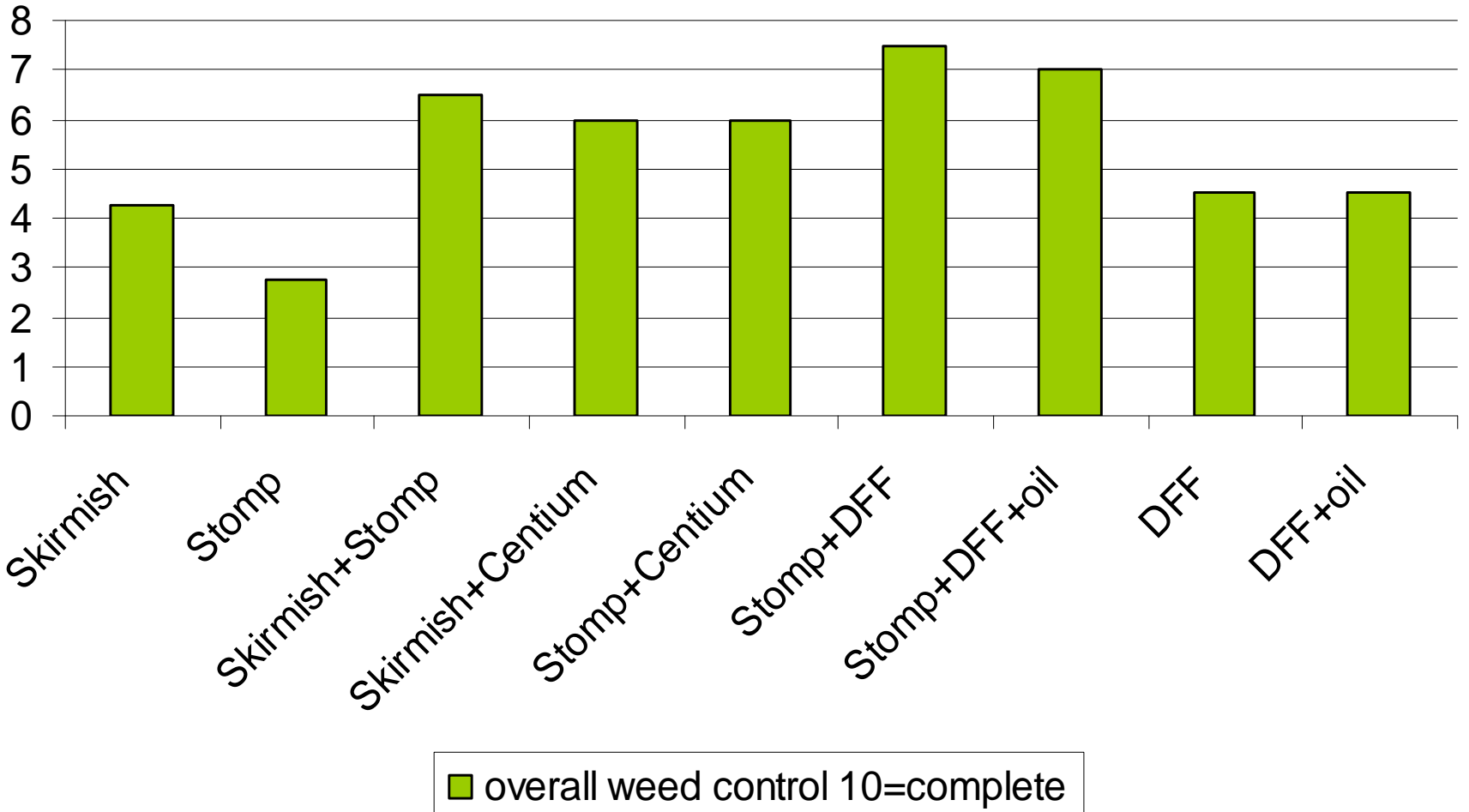
DFF bleaching in narrow leaf variety



L. angustifolius DFF



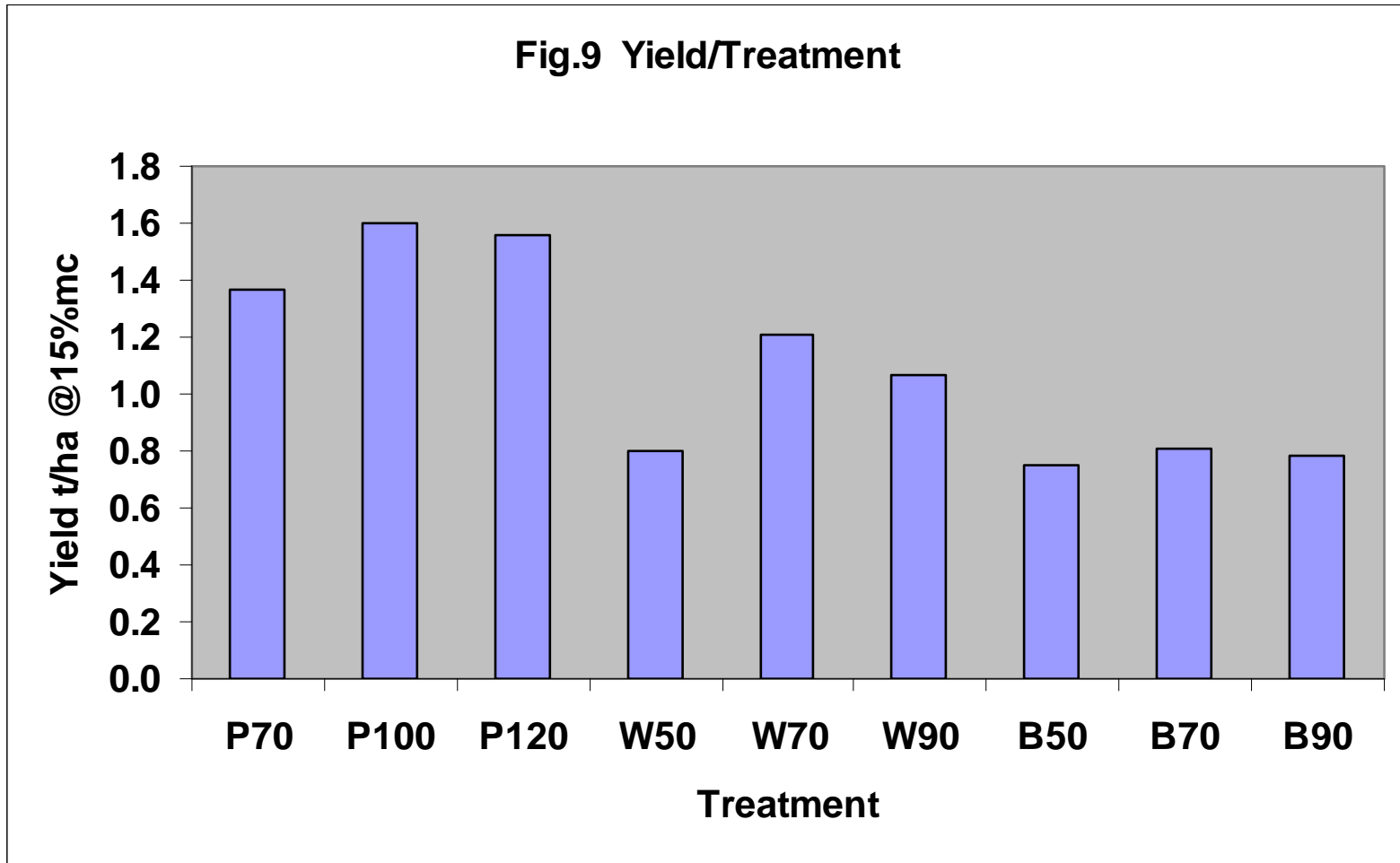
L angustifolius Stafford 2008



Problem weeds

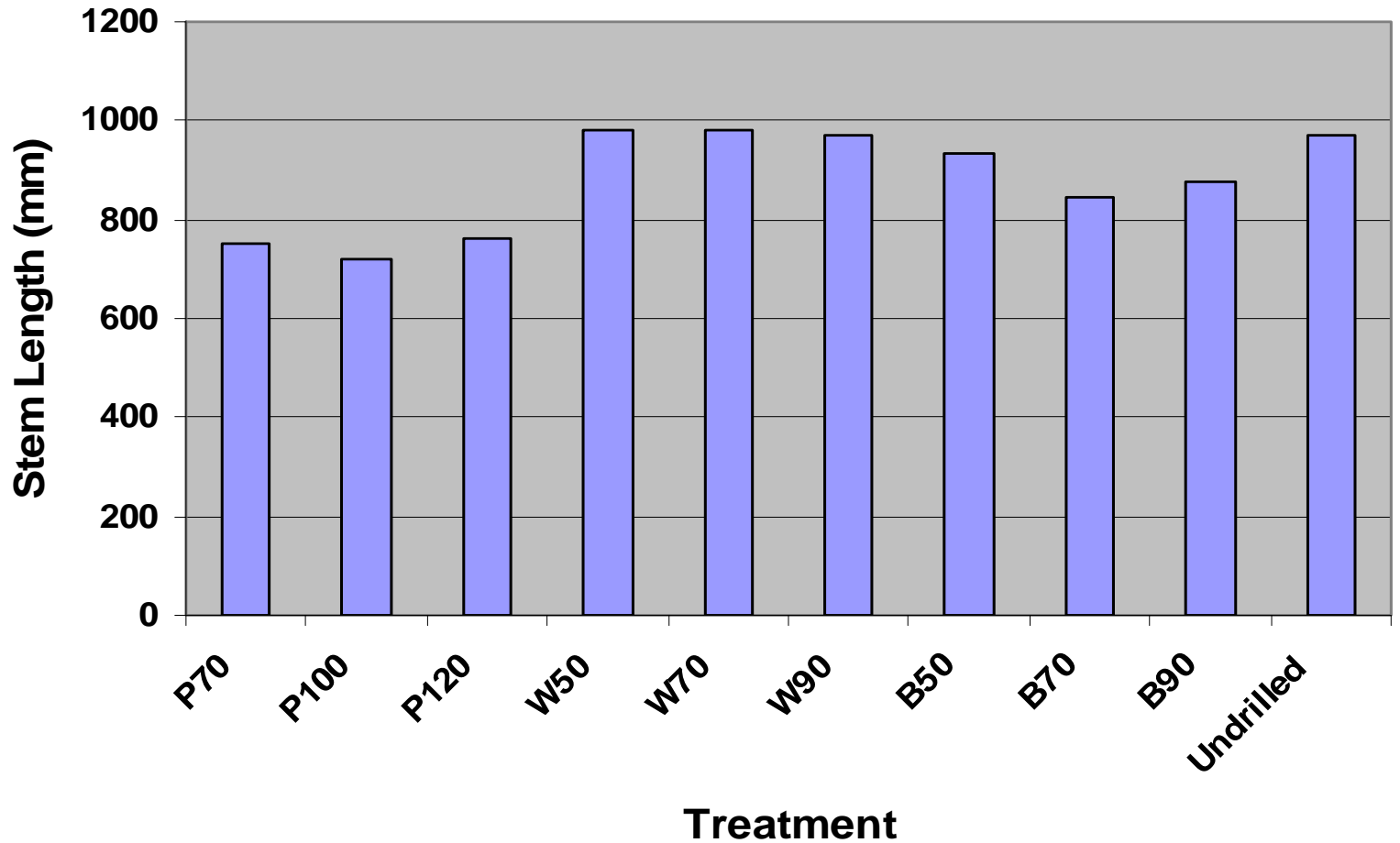
- Black bindweed
- Brassicas
- Overall Skirmish or Skirmish plus Centium provided good spectrum of control
- Stomp effective on polygonums
- DFF was crop damaging with or without oil

Effect of population on weed competition



Population/competition interaction

Fig. 7 Mean Fat Hen stem length



Mechanical weed control



Inter row hoeing



Non -hoed



Video guided inter row weeder in cereals



Conclusions

- In order to improve the uptake of lupins in the UK:-
 - greater yield stability
 - pH alkaline tolerance
 - Earlier maturity of L albus types
 - Wider choice of herbicides
 - More knowledge of mechanical weed management

Acknowledgements

- LISA Project team
 - Ron Stobart
 - Paul Armitage
 - Shirley Landrock-White
 - Seedsmen
 - Defra
- PGRO Pulse Levy
 - Simon Kightley