

Control of Sclerotinia head rot in sunflower



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SCLEROTINIA WILT

- * *Sclerotinia sclerotiorum*
- * Very destructive
- * Most common.
- * wide host range
- * Sclerotia in soil
- * Mycelia infects roots
- * Root rot
- * Basal-stalk rot.
- * Complete wilt by flowering
- * Sclerotia produced at base

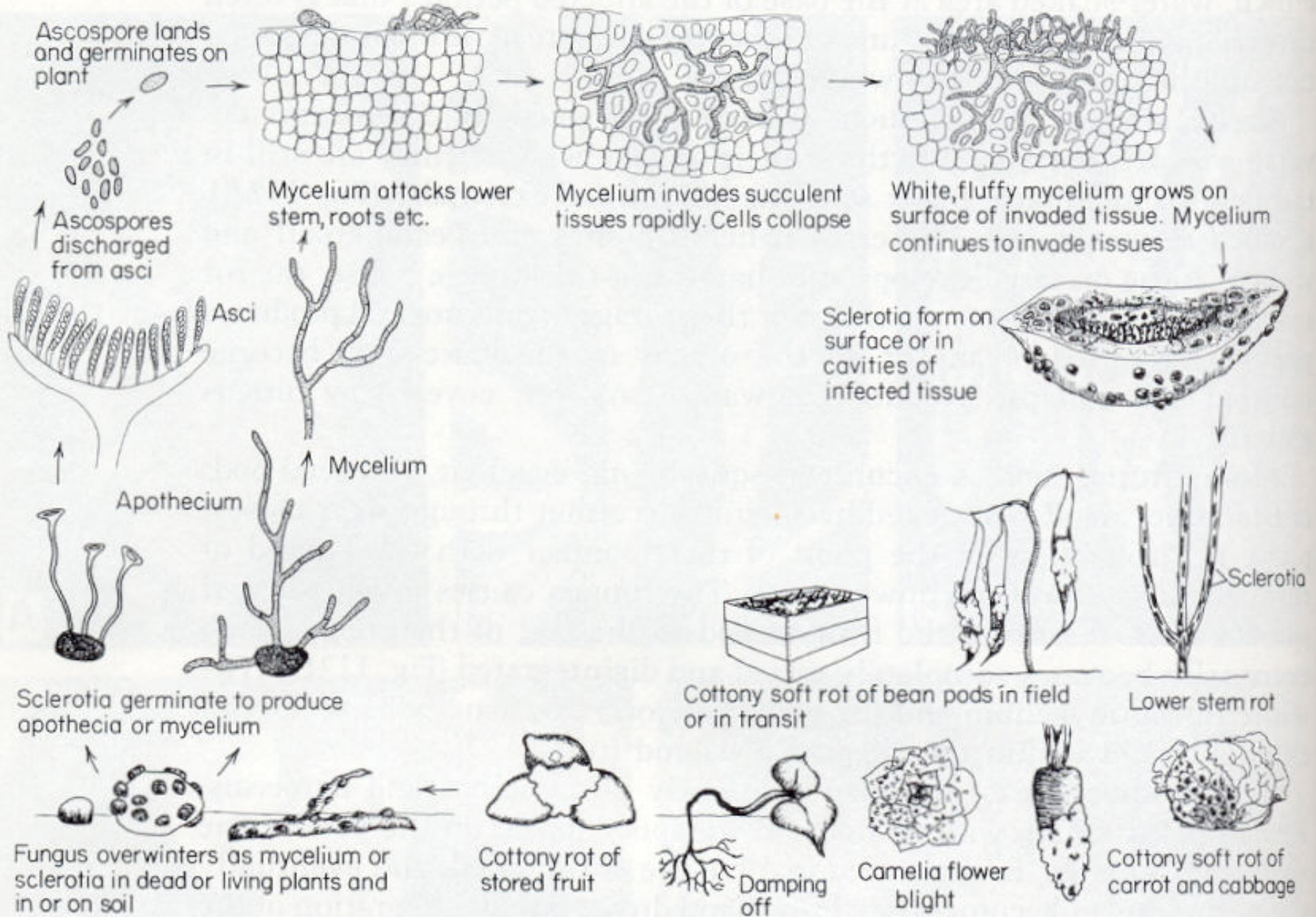




Sclerotinia Head Rot Epidemics 2004

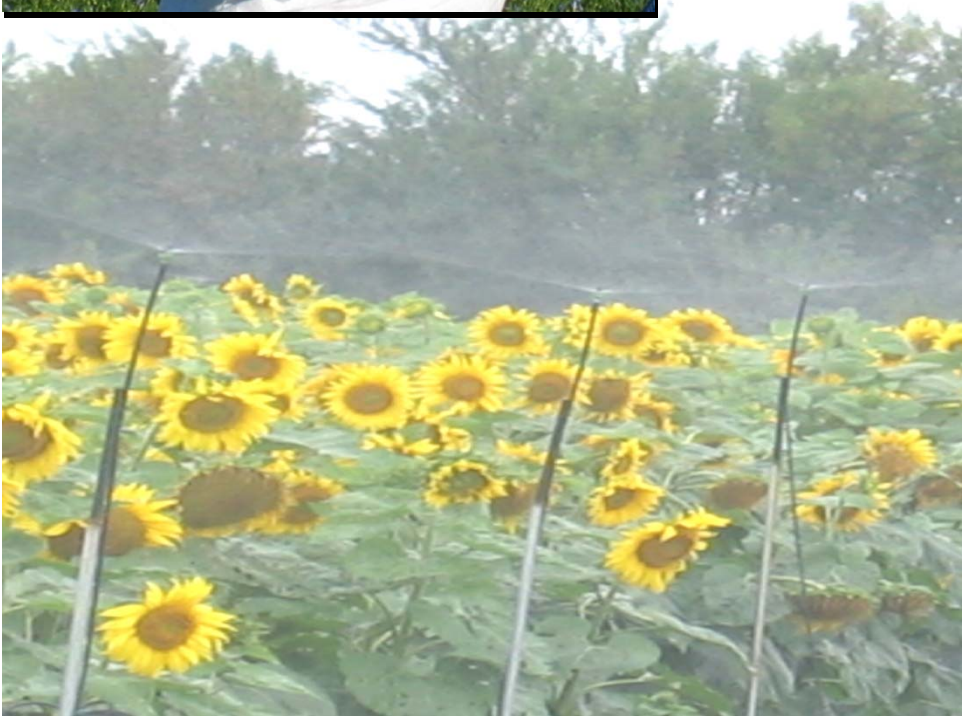


Sclerotinia Life cycle



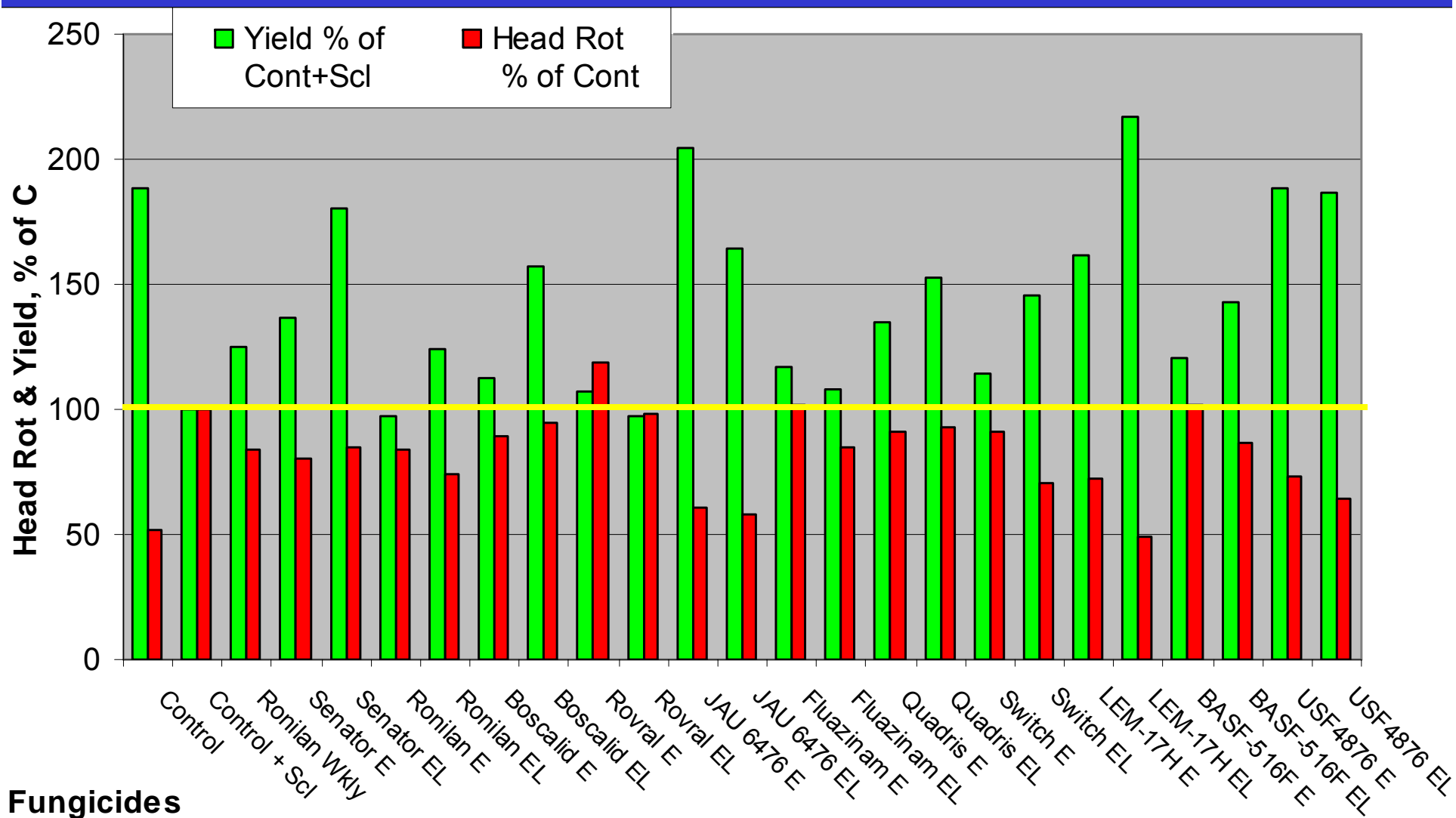
- **Short Term Objective:**

- **Lack of genetic resistance to Sclerotinia headrot**
- **Need to identify foliar fungicide applications to reduce the impact on sunflower yield & quality.**
- **Field trials at AAFC Morden Manitoba**
- **Susceptible oilseed hybrids**
- **Applications at Early and/or Late flowering**
- **Sclerotinia inoculation 24 h after fungicides**
- **Ascospores suspension supplemented with**
- **Ground sclerotinia-infection millet seed**
- **Head rot incidence weekly**
- **Head rot severity at the end of season**



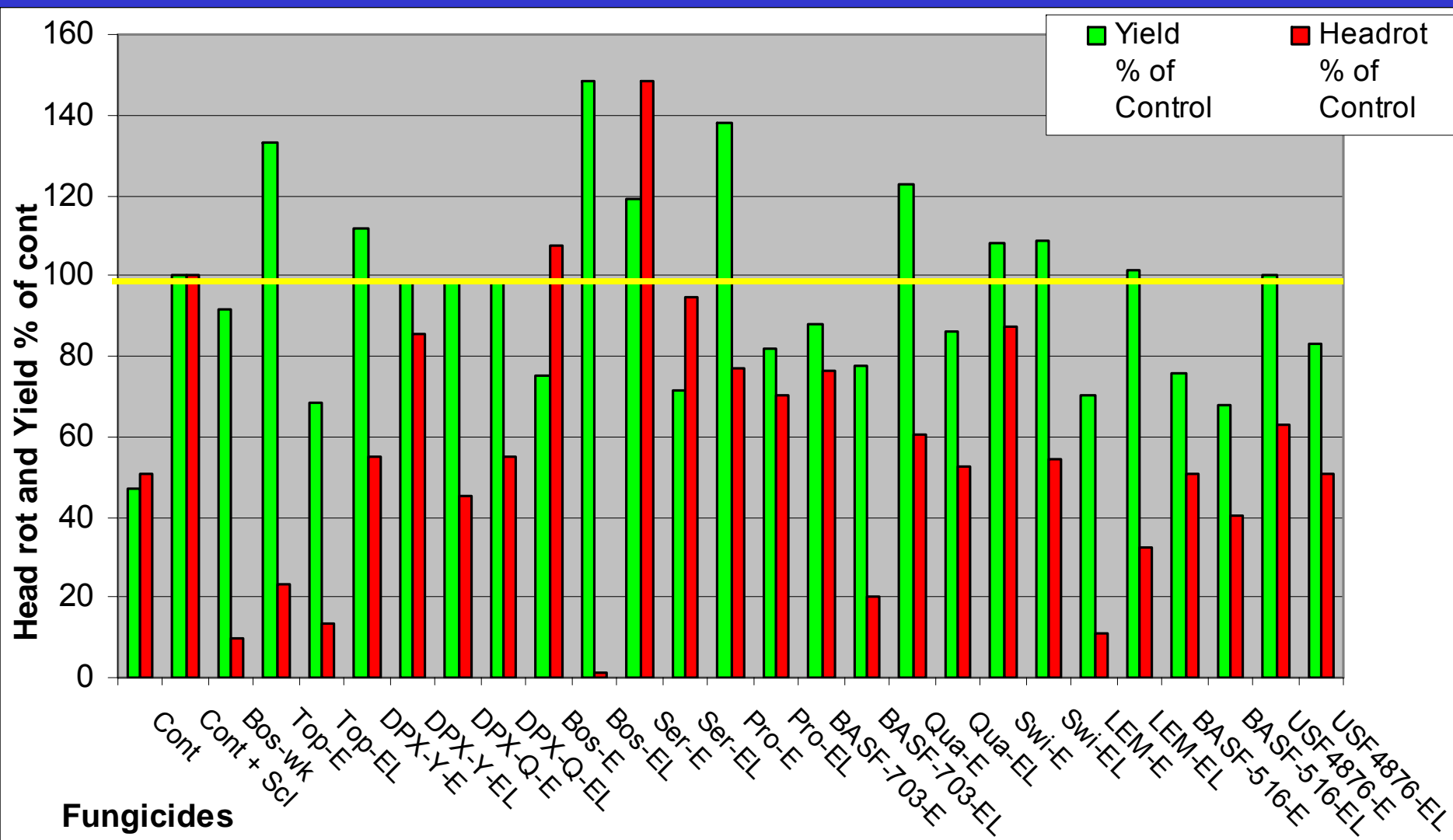
<u>Fungicides</u>	<u>Chemical % active</u>	<u>a.i / ha</u>	<u>Company</u>
Rovral	Iprodione 24	3 kg	BAYER
Fluazinam	Fluazinam 40	1 kg	Syngenta
Quadris	Azoxystrobin 25	0.25 kg	BASF
Lance	Boscalid 25	0.25 kg	BASF
Vertisan-LEM17	DPX-LEM17, Penthiopyrad 20	0.35 kg	DuPont
Proline	Prothioconazole 48	0.2 kg	BAYER
Prosaro	Prothioconazole12.5/Tebuconazole12.5	0.2 kg	BAYER
Ronilan	Viclozolin	2 kg	Syngenta
BASF-516	Experimental	0.8 kg	BASF
USF-4876	Experimental	0.3 kg	BAYER
DPX-YT669	Experimental	0.22 kg	DuPont
DPX-Q8X63	Experimental	0.35 kg	DuPont
Quash	Experimental (metconazole)	0.28 kg	VALENT
BASF-703	Experimental	0.25 Kg	BASF
Topsin(Senator)	Thiophanate-methyle	1.5kg	EngageAgro
Serenade	<i>Bacillus subtilis</i> (Biocontrol)	5 kg	AgraQuest
Switch	Cyprodinil / Fluxdioxonil	0.6 kg	Syngenta

Control of sclerotinia head rot in sunflower, 2009

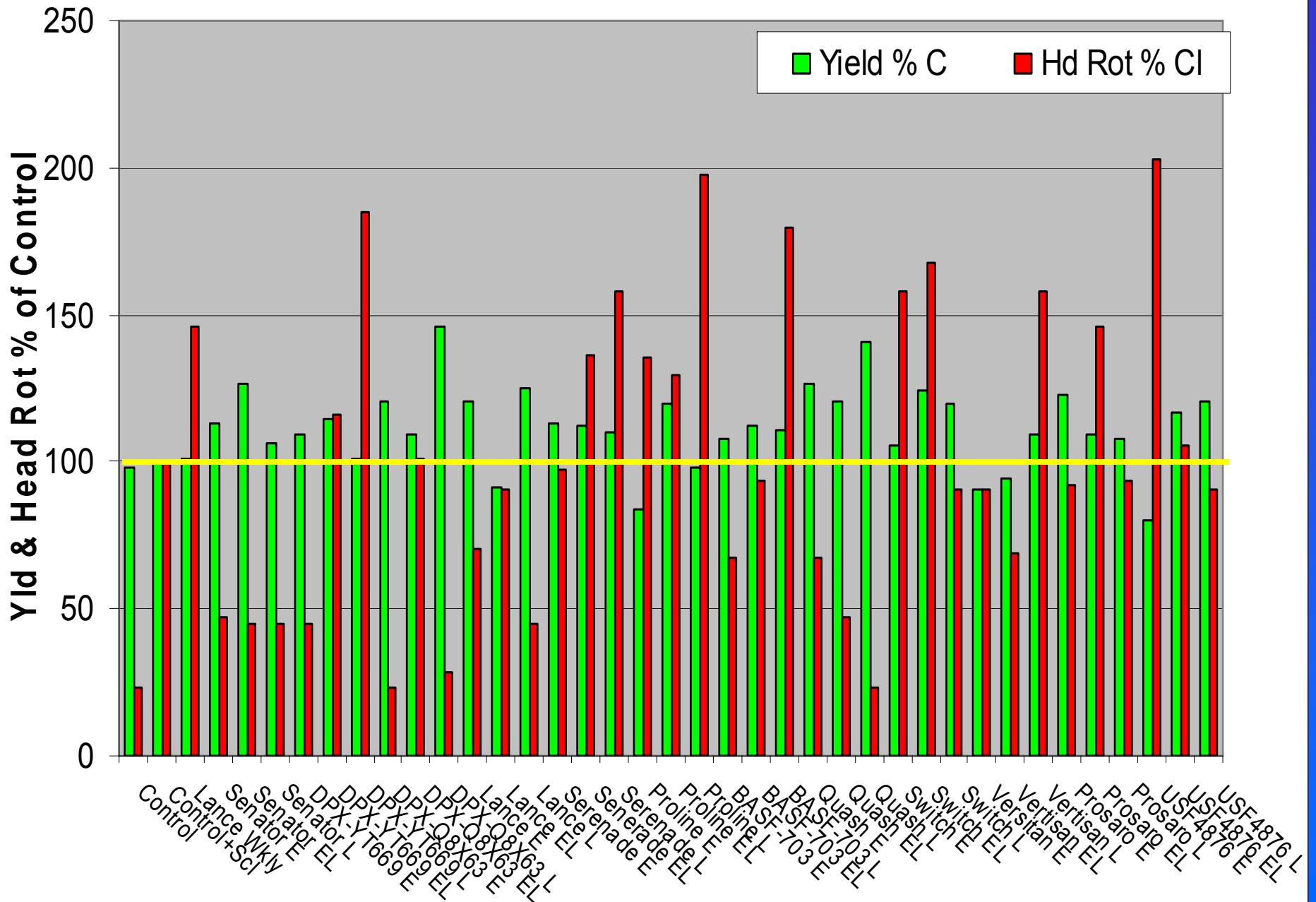


Fungicides

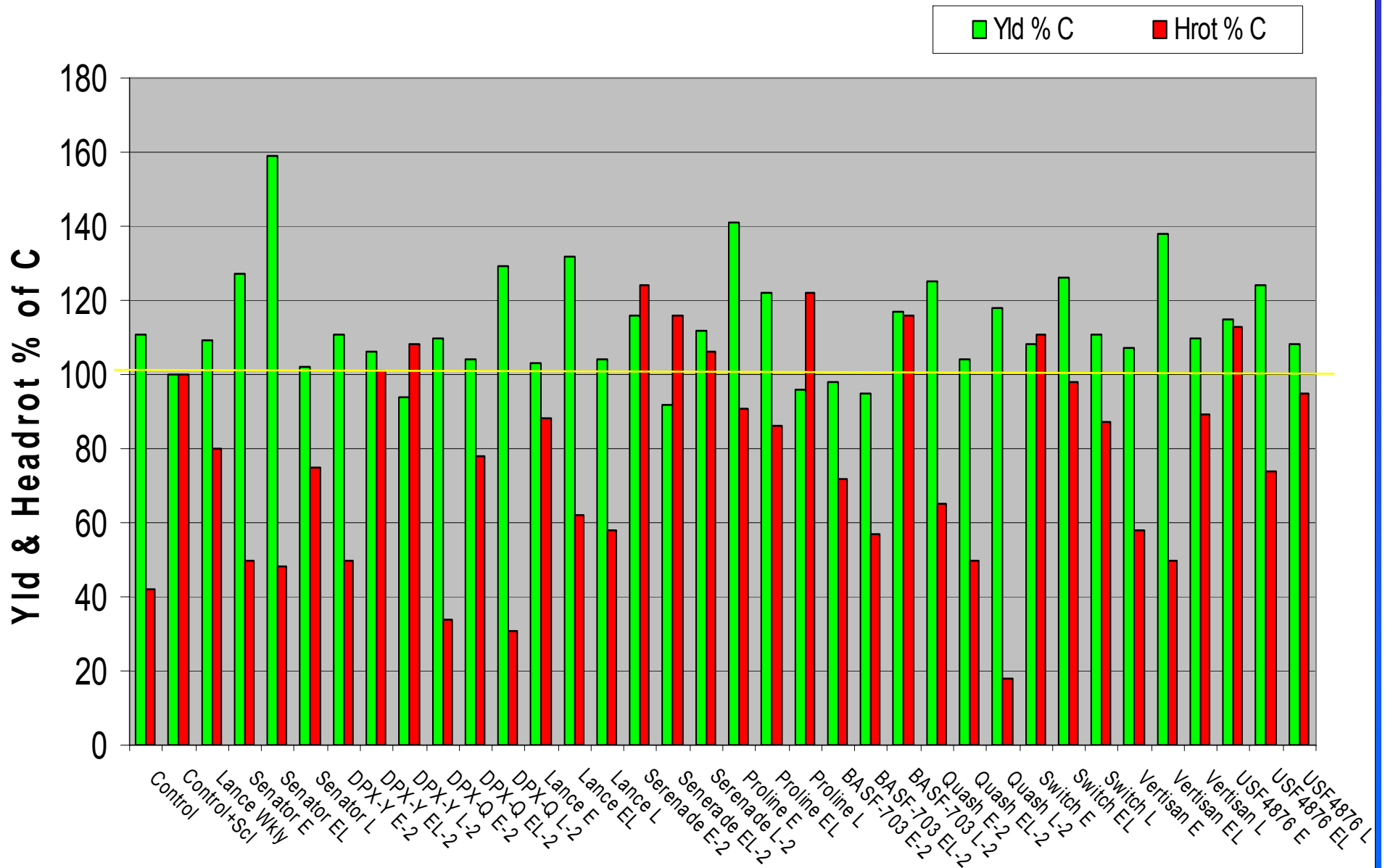
Control of sclerotinia head rot in sunflower, 2010



Control of sclerotinia head rot 2011

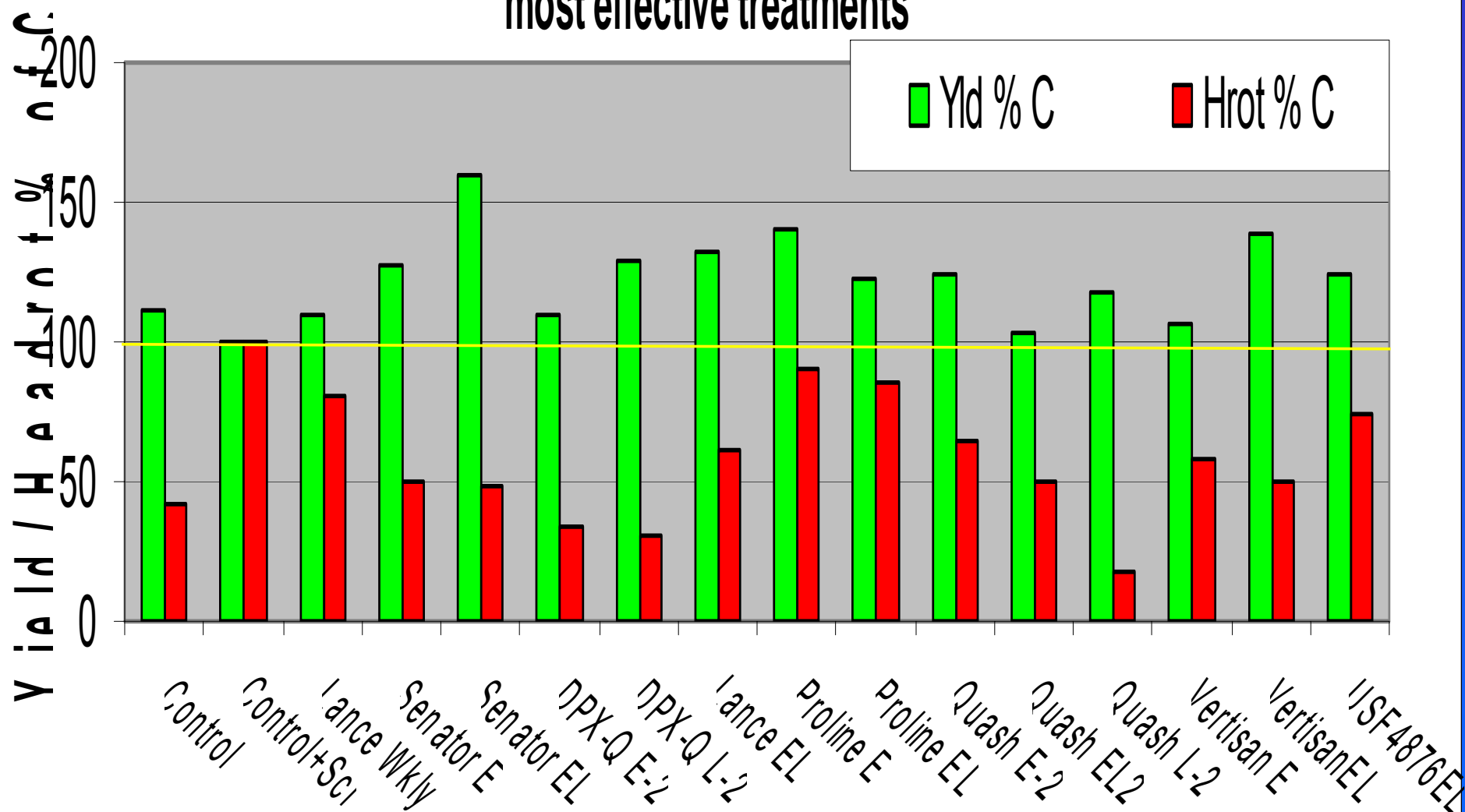


Control of Sclerotinia head rot in 2009-11



Control of sclerotinia head rot 2009-11

most effective treatments



CONCLUSIONS

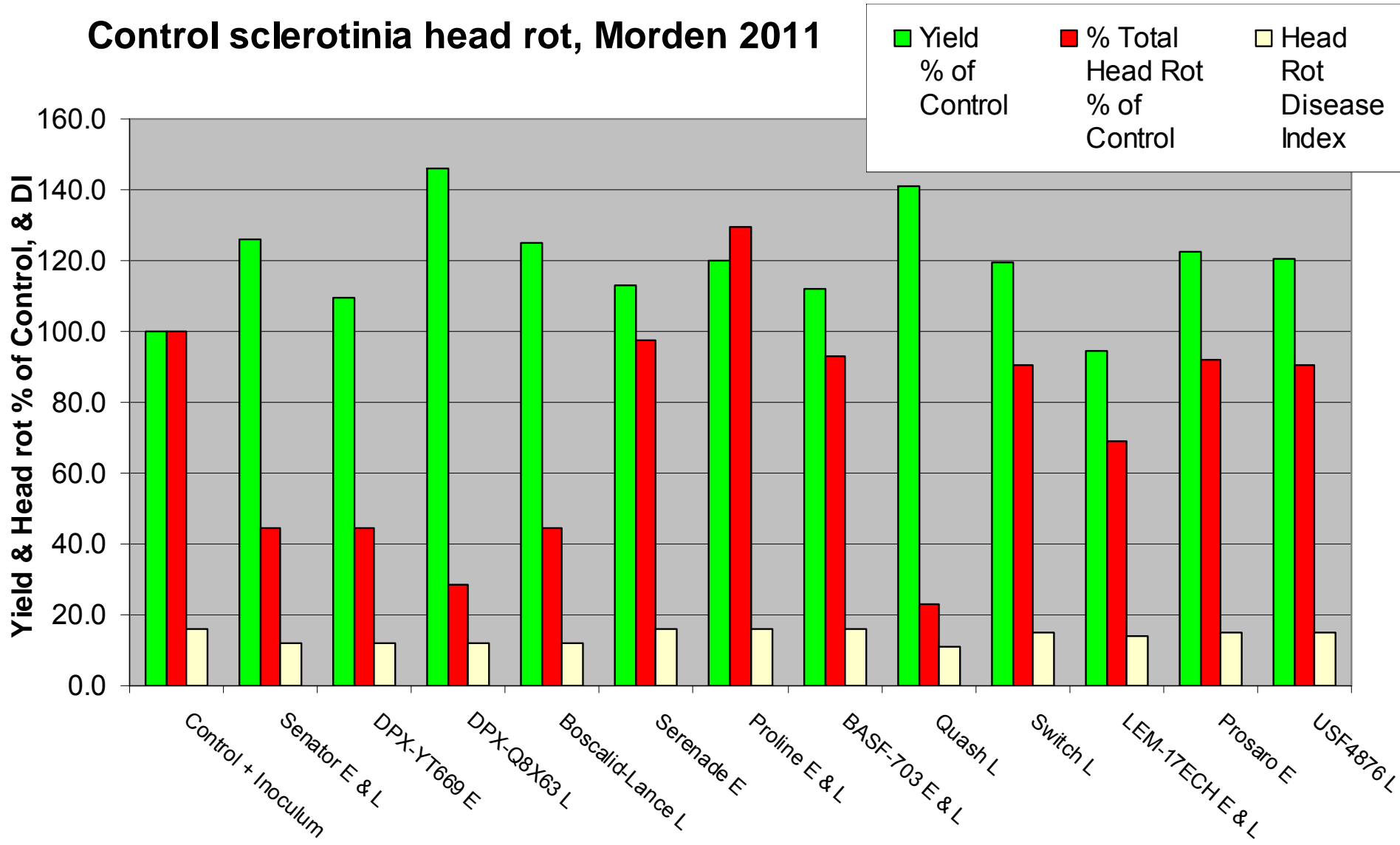
- ▶ Head rot epidemics vary from year to year.
- ▶ Misting system is essential for epidemics.
- ▶ Most fungicides reduced incidence and severity of head rot, and improved yield.
- ▶ 3-yr data showed some fungicides significantly reduced head rot and improved yield.
- ▶ Applications at early flowering were better than at late flowering.
- ▶ Two applications are better than one.
- ▶ Future research on application timing, and provide supportive data for registration of the most effective fungicides.

Thank you!
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for technical support

Control sclerotinia head rot, Morden 2011



Fungicide trials to reduce the impact of *Sclerotinia* head rot in sunflower



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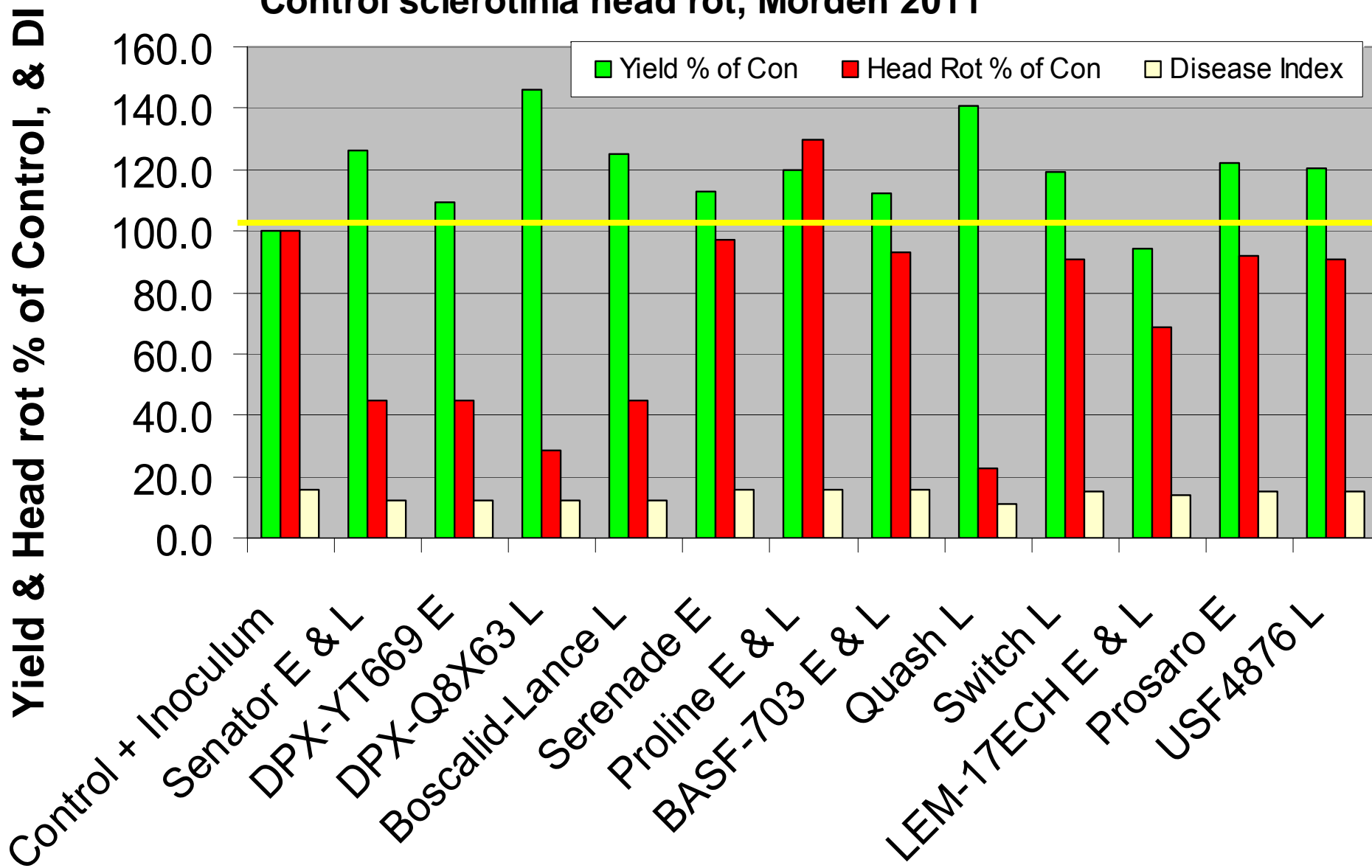
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Control sclerotinia head rot, Morden 2011



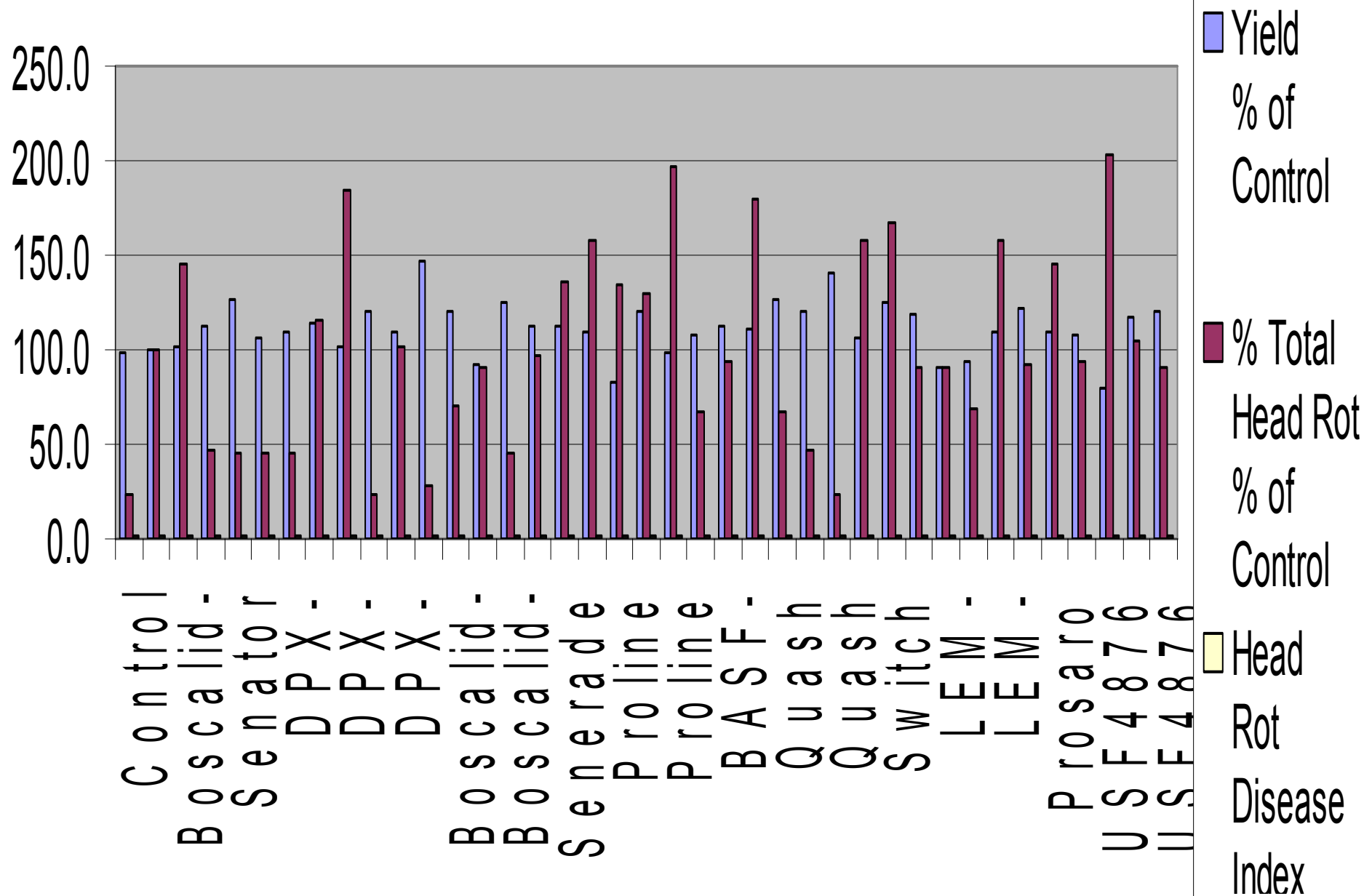


UNITED STATES

100° W



Control Sclerotinia Head rot, 2011

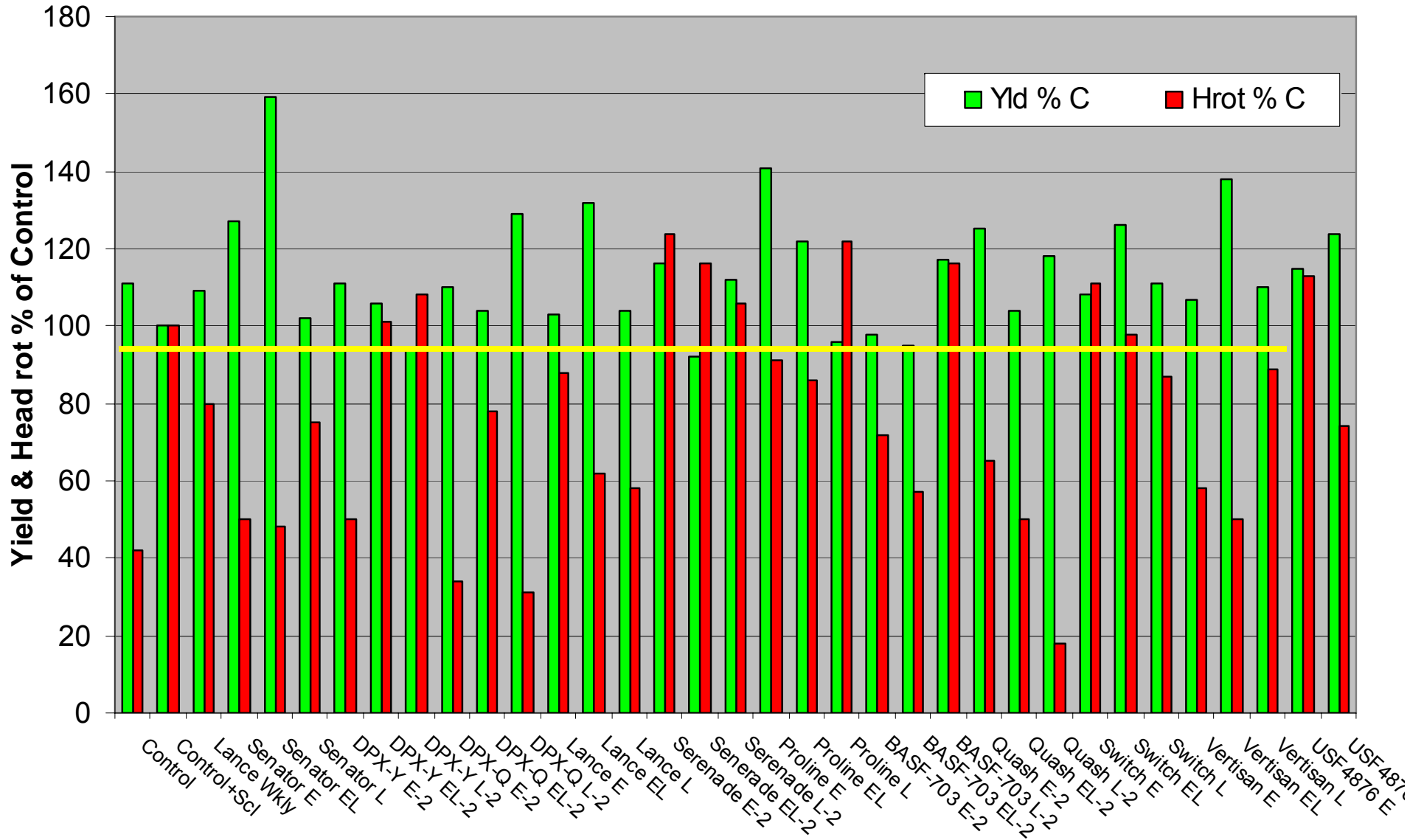




New Races of Sunflower Downy Mildew

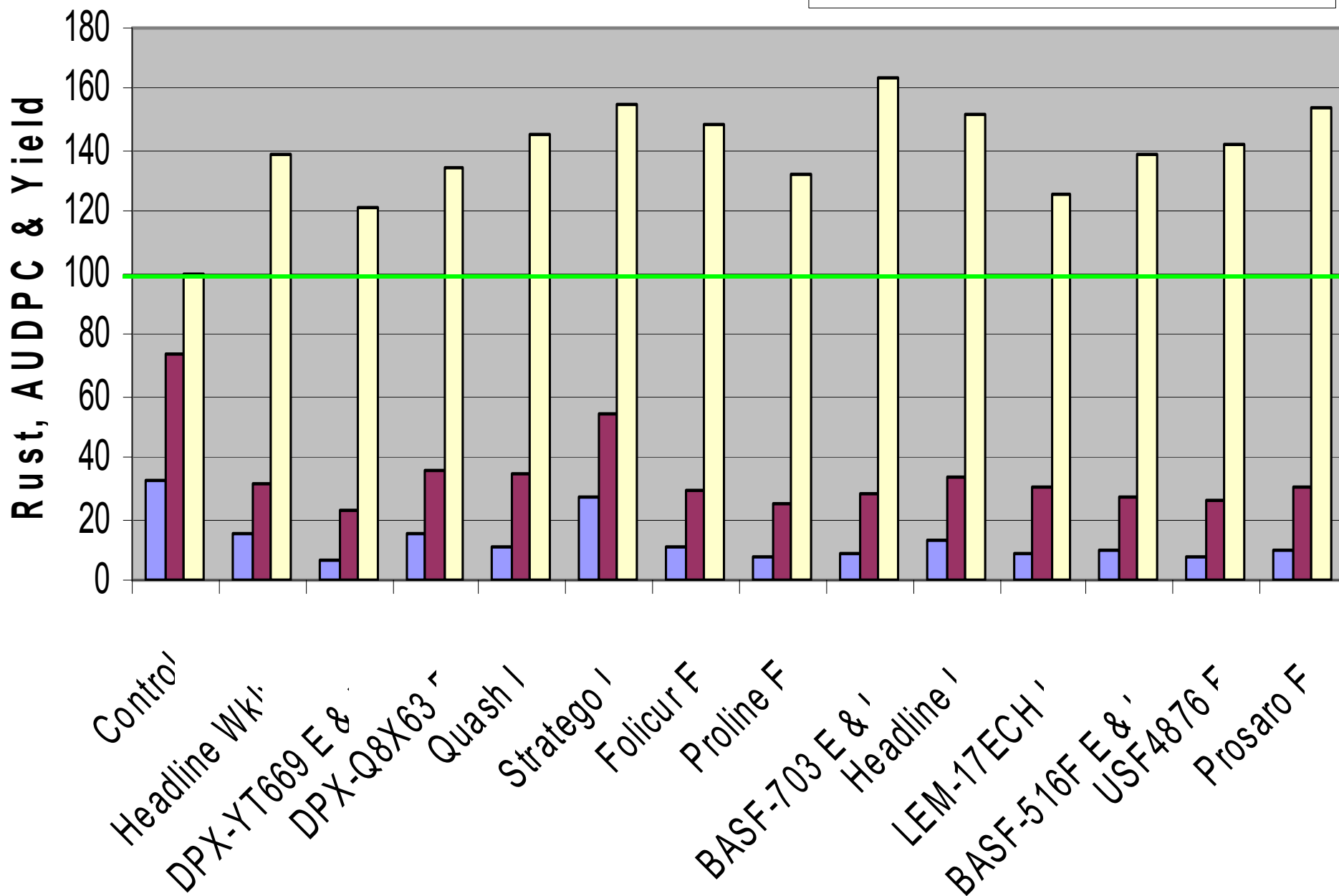
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Control of Sclerotinia head rot 2009-2011



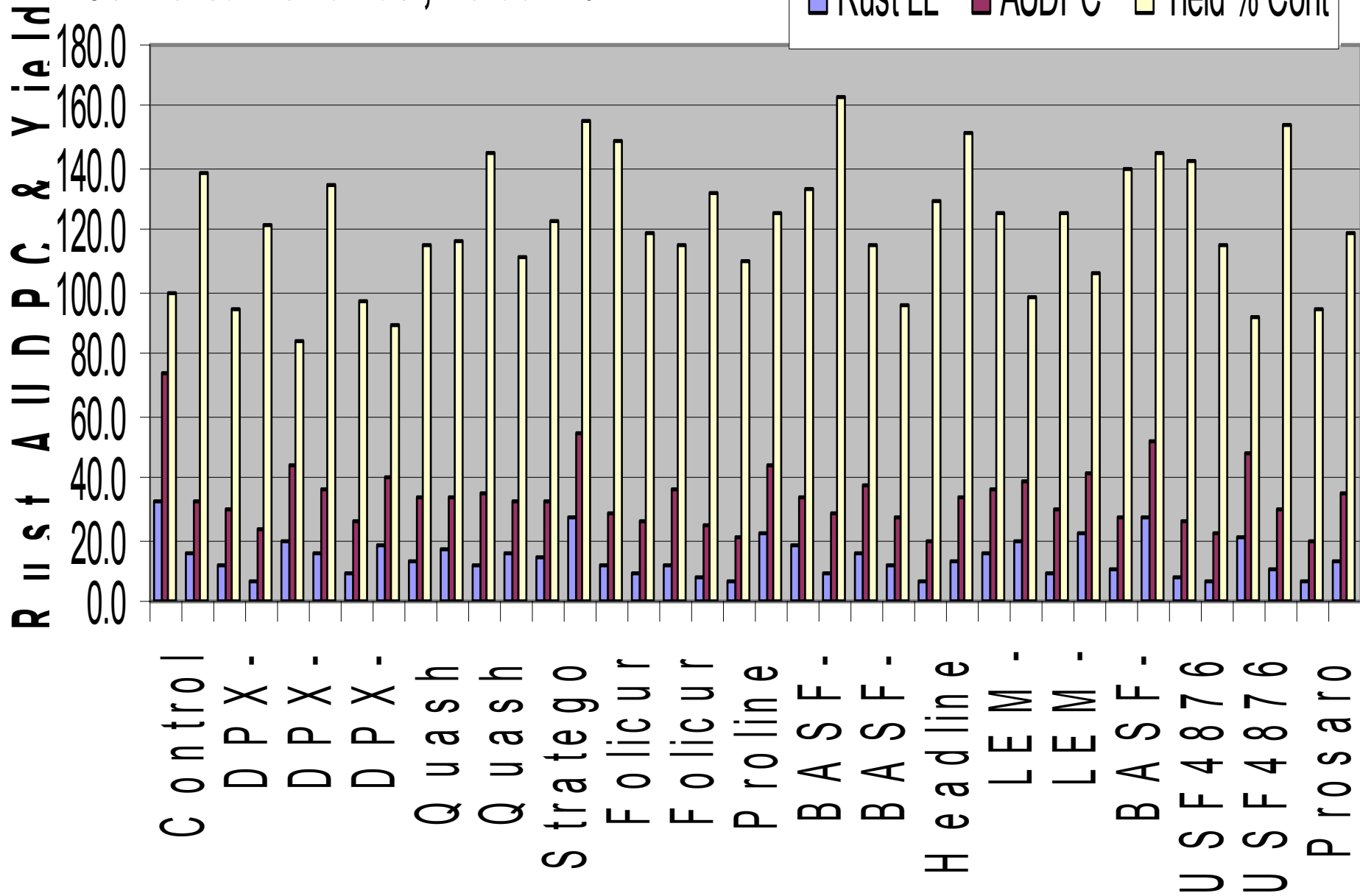
Control sunflower rust, Morden 2011

■ Rust LL
 ■ AUDPC
 ■ Yield % Cont



Control sunflower rust, Morden 2011

Rust LL AUDPC Yield % Cont



Early fungicide application at full flowering



<u>Fungicides</u>	<u>Chemical % active</u>	<u>a.i / ha</u>	<u>Company</u>
Bravo	Chlorothalonil 50	1 kg	Syngenta
Dithane	Mancozeb 80 Ethyl carbamate	2.25 kg	Dow Agro
Folicur	Tebuconazole 39	0.125 kg	BAYER
Headline	Pyraclostrobin 25	0.15 kg	BASF
Lance	Boscalid 25	0.25 kg	BASF
LEM Exp.	DPX-LEM17	0.35 kg	DuPont
Proline	Prothioconazole 48	0.2 kg	BAYER
Stratego	Propiconazole/Trifloxystrobin12.5E	0.18 kg	BAYER
Tilt	Propiconazole 25	0.125 kg	Syngenta
BASF-516	Experimental	0.2 kg	BASF
USF-4876	Experimental	0.3 kg	BAYER
DPX-YT669	Experimental	0.22 kg	DuPont
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