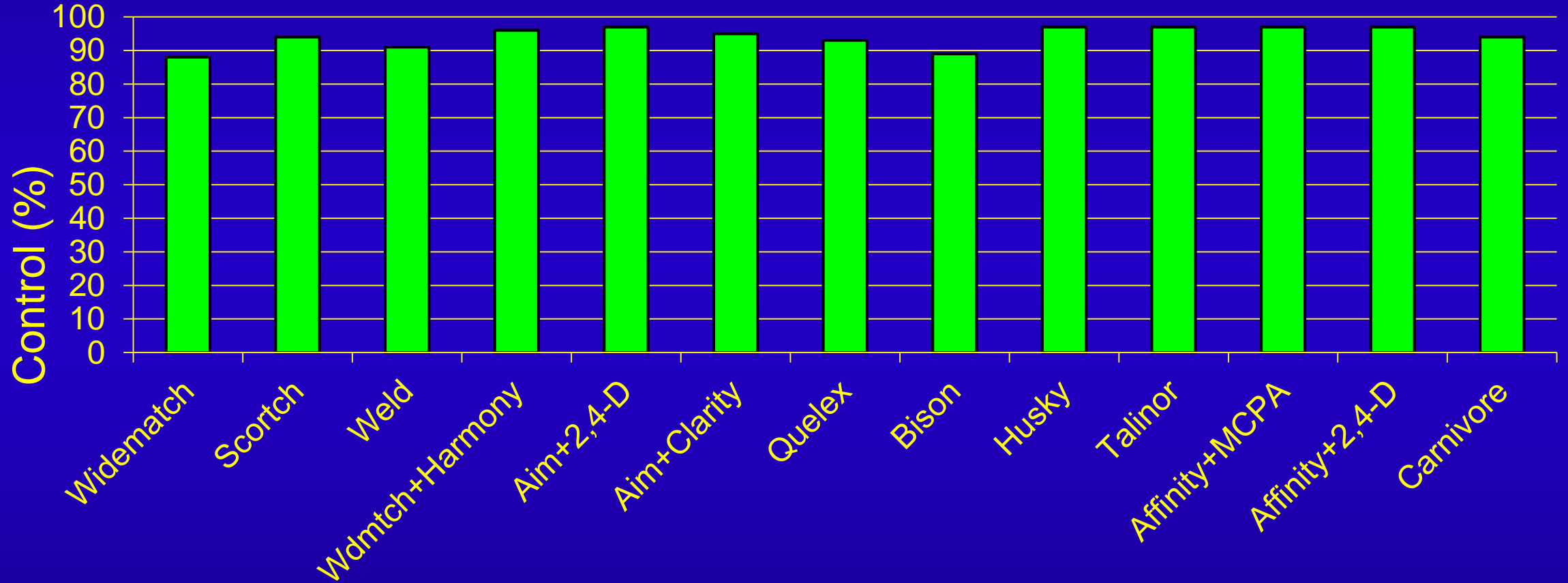
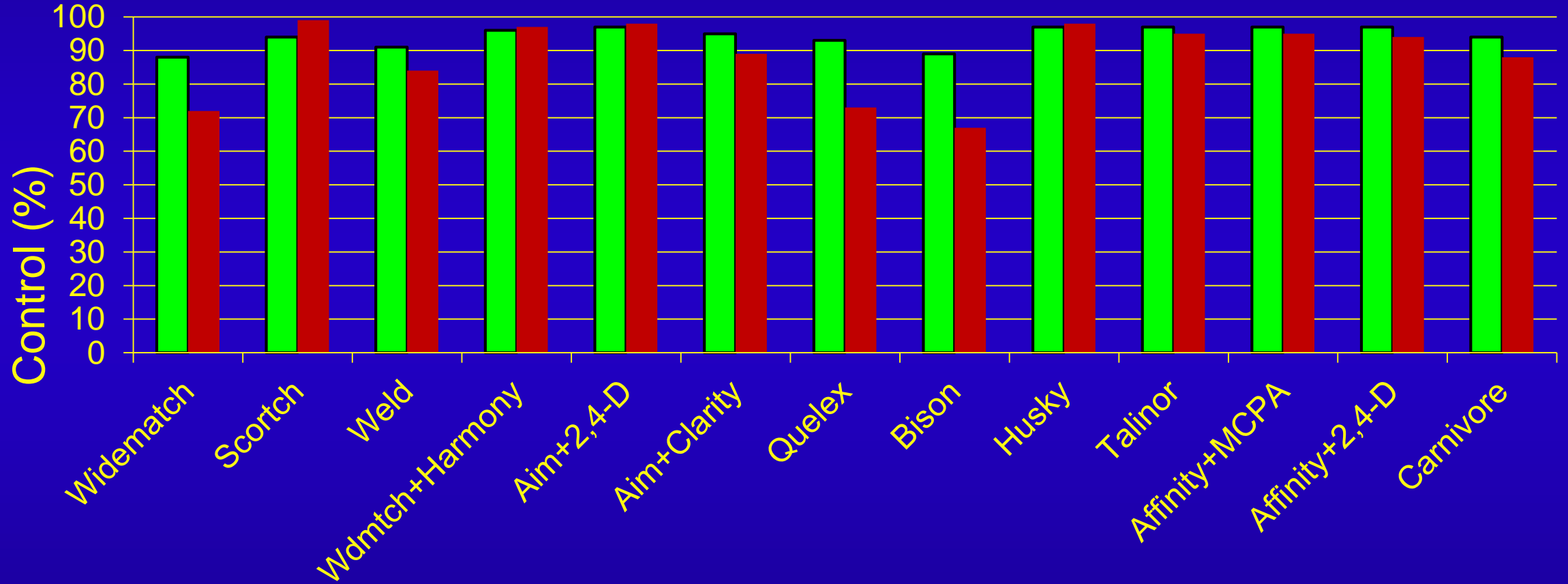


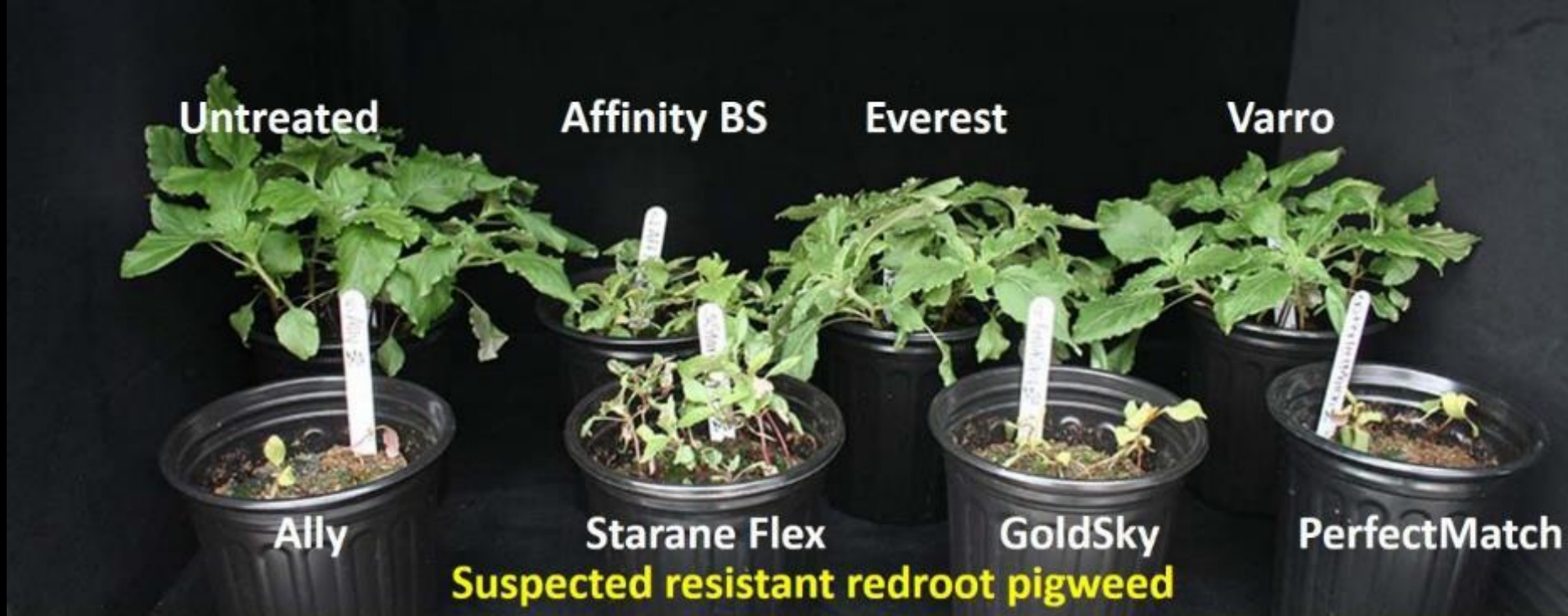


Waterhemp Control

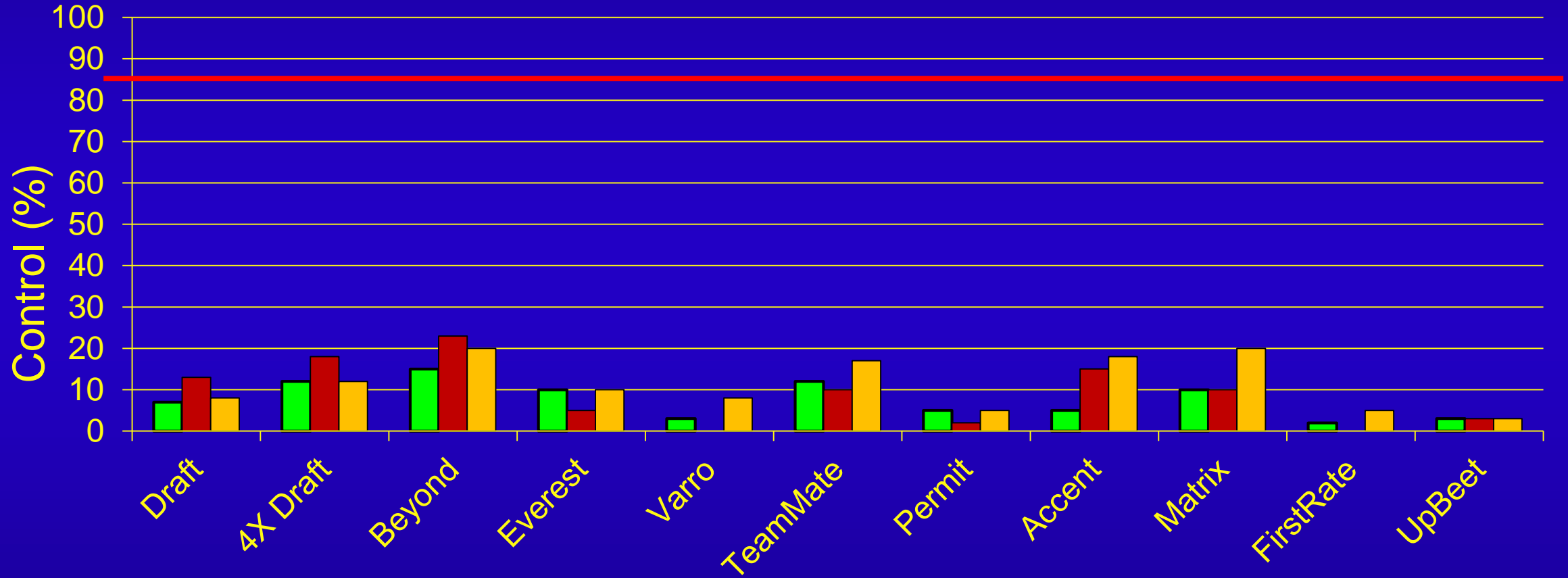


Waterhemp Control





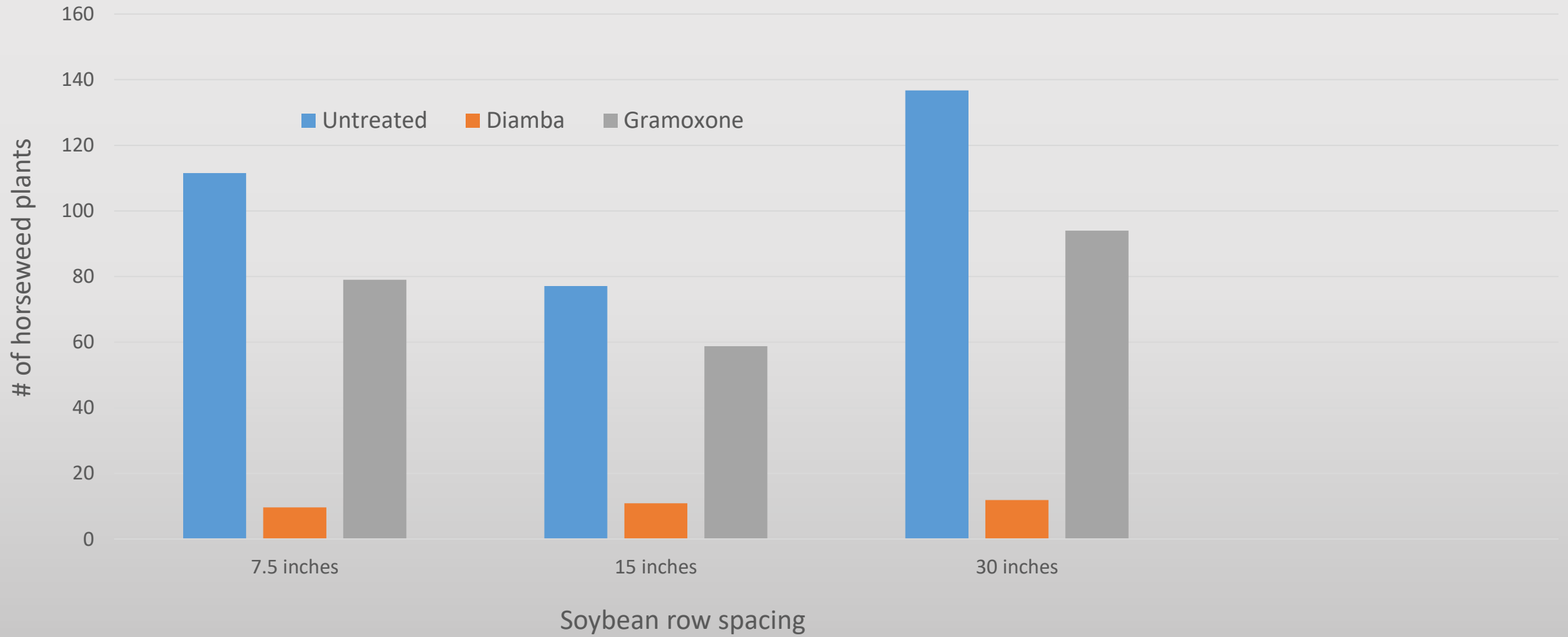
ALS-Resistant Redroot Pigweed



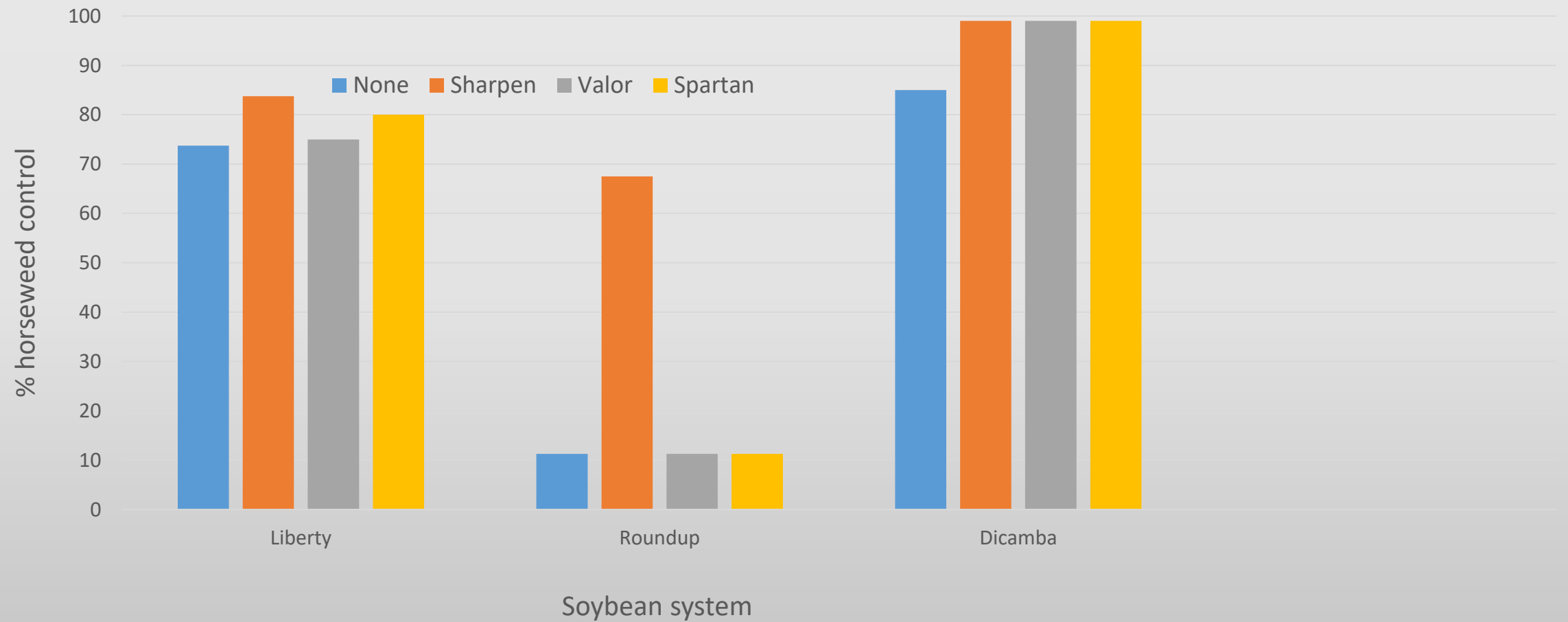
Horseweed



Horsweed stand counts 6 weeks after PRE in ½ m quadrats



3 weeks after POST % horseweed control



PRE – Roundup
POST – Roundup + Basagran

PRE – Roundup + Sharpen
POST – Roundup + Basagran

PRE – Roundup + Valor
POST – Roundup + Basagran



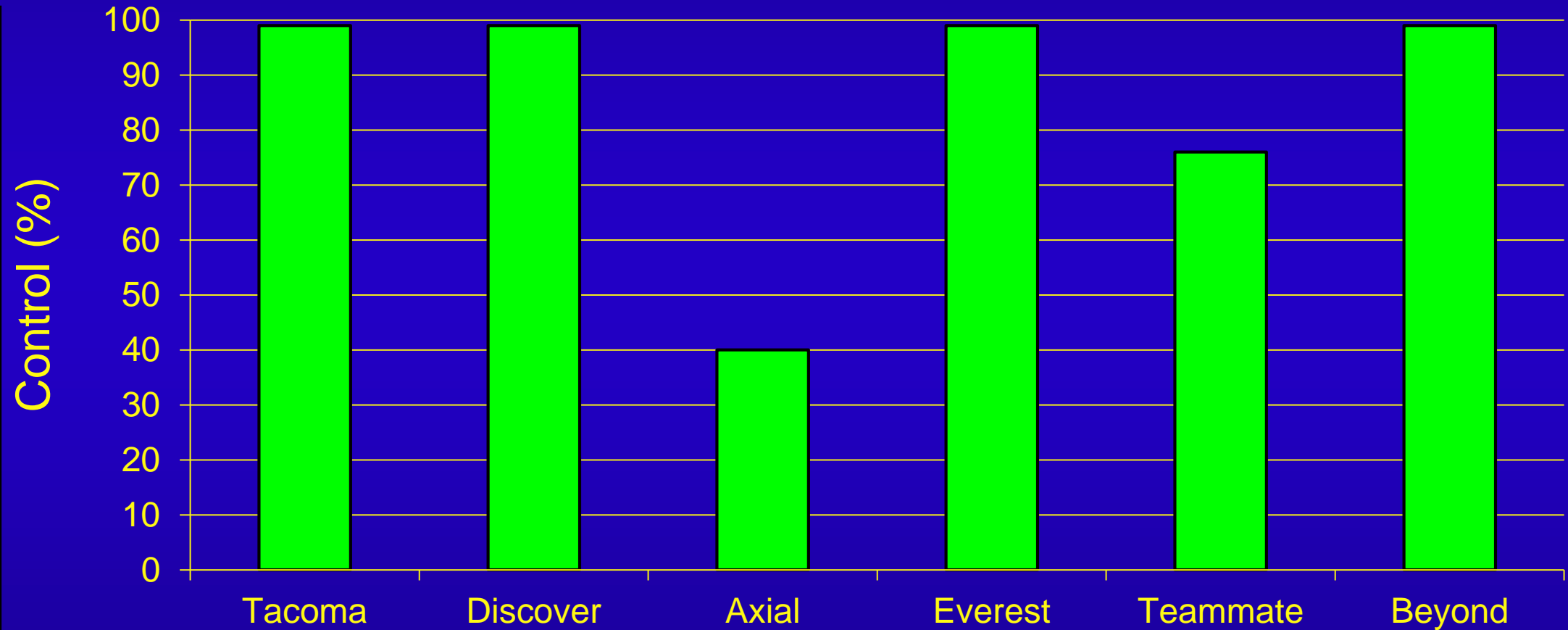
PRE – Roundup + Sharpen
POST – Roundup + Basagran

PRE – Xtendimax + Sharpen
POST – Xtendimax + Roundup

PRE – Gramoxone + Sharpen
POST – Liberty



Control of Volunteer Corn in Wheat





Axial Bold

- Registered for wheat and barley
- 15 fl oz/A
 - Full rate of Axial
 - Yellow foxtail rate of Tacoma/Parity
- Application window
 - Wheat, emergence to pre-boot
 - Barley, emergence until jointing

Woolly Cupgrass

- Observed in North Dakota at two locations
 - Fargo
 - Hankinson
- Screening







- Treflan
- Dual
- Zidua
- Outlook



- Far-go
- atrazine
- Warrant (half-rate?)
- Callisto



Worked

- glyphosate
- Liberty
- Axial
- Assure II*
- clethodim*

Working

- Impact/Armezon
- Beyond/Raptor
- Accent
- Tacoma/Parity
- Discover

Didn't Work

- Everest
- Varro
- TeamMate
- Facet

Travel Speed Affected Control more than Droplet Size (Aim+2,4-D+Everest)



4.5 mph, across size



12 mph, medium



12 mph, ultra coarse

Broadleaf Weed Control with PWM Technology

- Determine if there is an interaction between droplet size and travel speed
- Four droplet sizes (250, 400, 600, 750 μm) and three speeds (5, 10, 15 mph)
- Two crops, two chemical programs each
 - Soybean
 - Glyphosate + dicamba (Xtend system)
 - Glufosinate + fomesafen (Liberty + Flexstar)
 - Wheat
 - Bromoxynil & pyrasulfotole (Huskie)
 - 2,4-D + thifensulfuron + tribenuron (2,4-D + Affinity TM)
- All trials will be repeated in 2019



Broadleaf Weed Control with PWM Technology

- Soybean trials

- Excellent control for both Xtend and Liberty systems
- No apparent interaction between droplet size and speed



2,4-D + Affinity

- Overall, control was better 4 weeks after treatment
- Common lambsquarters
 - Good to excellent control 14 DAT
 - Near complete control 28 DAT
- Common ragweed
 - Good control when sprayed with handboom
 - Poor control 14 DAT with PWM sprayer
 - Marginally acceptable control 28 DAT with PWM sprayer

Treatment		Lambsquarters		C. ragweed	
Droplet Size	Speed	14DAT	28DAT	14DAT	28DAT
µm	mph	%	%	%	%
Handboom		99	99	80	90
250	5	99	98	50	82
250	10	95	97	53	75
250	15	99	98	43	79
400	5	93	99	62	87
400	10	91	99	52	80
400	15	96	98	48	80
600	5	93	98	53	80
600	10	99	97	43	82
600	15	83	95	53	83
750	5	96	98	53	82
750	10	88	98	65	82
750	15	94	99	58	84
LSD P=0.05		9	3	25	11

Huskie

- Fair to good control 14 DAT
- Control good to excellent by 28 DAT
- PWM sprayer generally allowed similar control to handboom
 - Trend for less control with very large droplets
 - Variable speed trends

Treatment		Lambsquarters		C. ragweed	
Droplet Size	Speed	14DAT	28DAT	14DAT	28DAT
µm	mph	%	%	%	%
Handboom		63	87	65	87
250	5	72	87	57	82
250	10	75	88	68	88
250	15	65	95	58	87
400	5	91	98	89	86
400	10	77	85	65	80
400	15	76	92	68	92
600	5	86	90	71	85
600	10	83	83	63	83
600	15	71	93	55	83
750	5	73	78	67	73
750	10	78	77	63	77
750	15	63	70	50	78
LSD P=0.05		27	16	24	16