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2004 Wisconsin Corn Conferences

Monroe, Eau Claire, and Ripon
January 26, 29 and 30

Joe Lauer

University of Wisconsin

http://corn.agronomy.wisc.edu/Extension/CC04

Calculating Grower Return

Grower return = (Yield x Price) - Costs
- Handling ($0.02 per bushel)
- Hauling ($0.04 per bushel)
- Trucking ($0.11 per bushel)
- Drying ($0.02 per bushel-point above 15.5%)
- Storage ($0.02 per 30 day)
- **Marketing plan**: 50% sold at harvest, 25% at 4 months, and 25% at 8 months.

gr250: Price per bushel = $2.50

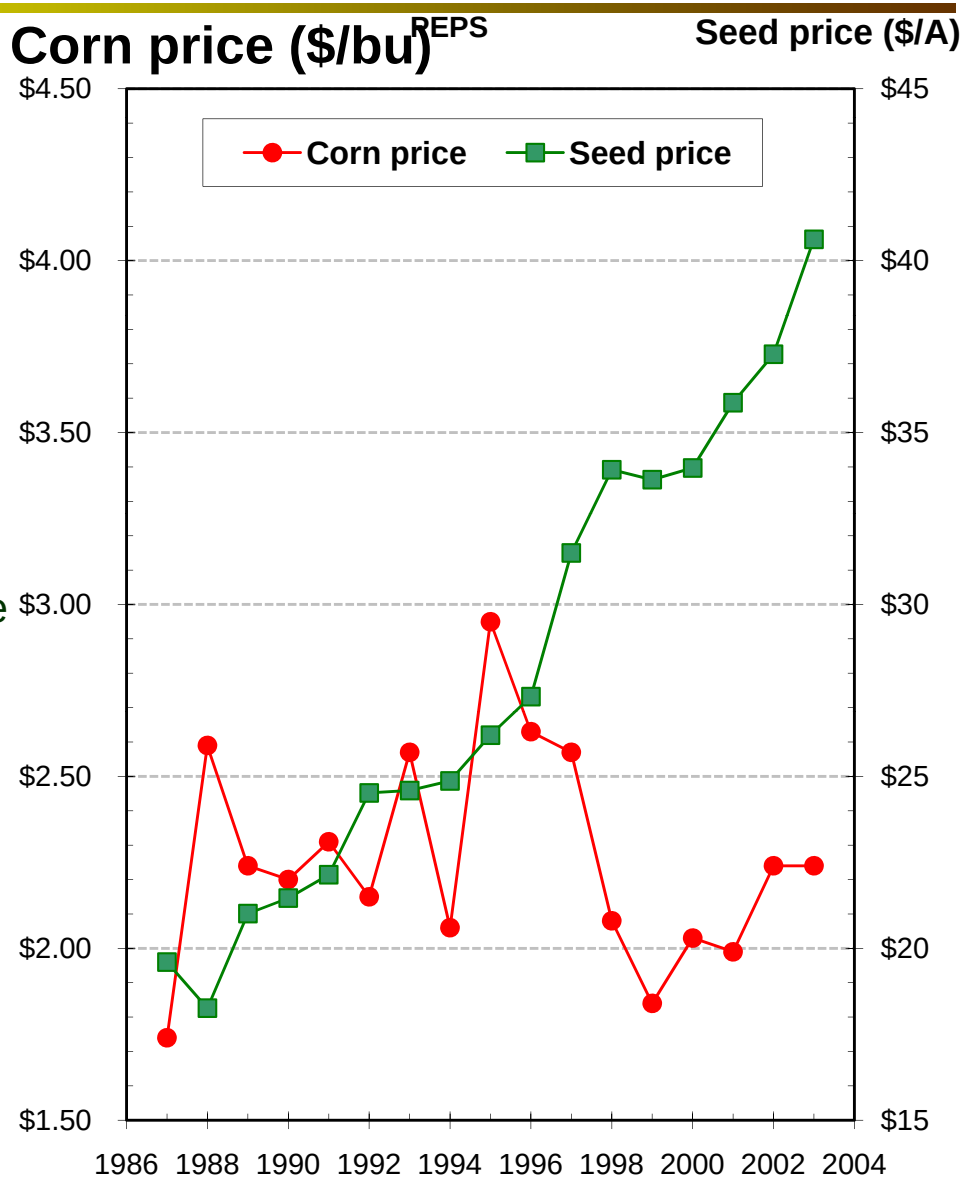
Livestock: $0.00 drying, $0.00 trucking, $0.01 storage

On-farm: $0.02 drying, $0.02 storage

Commercial: $0.04 drying, $0.03 storage

grPEPS: Weighted Price per bushel =
50% November Average Cash price
+ 25% March CBOT Futures ($0.15 basis)
+ 25% July CBOT Futures ($0.10 basis)

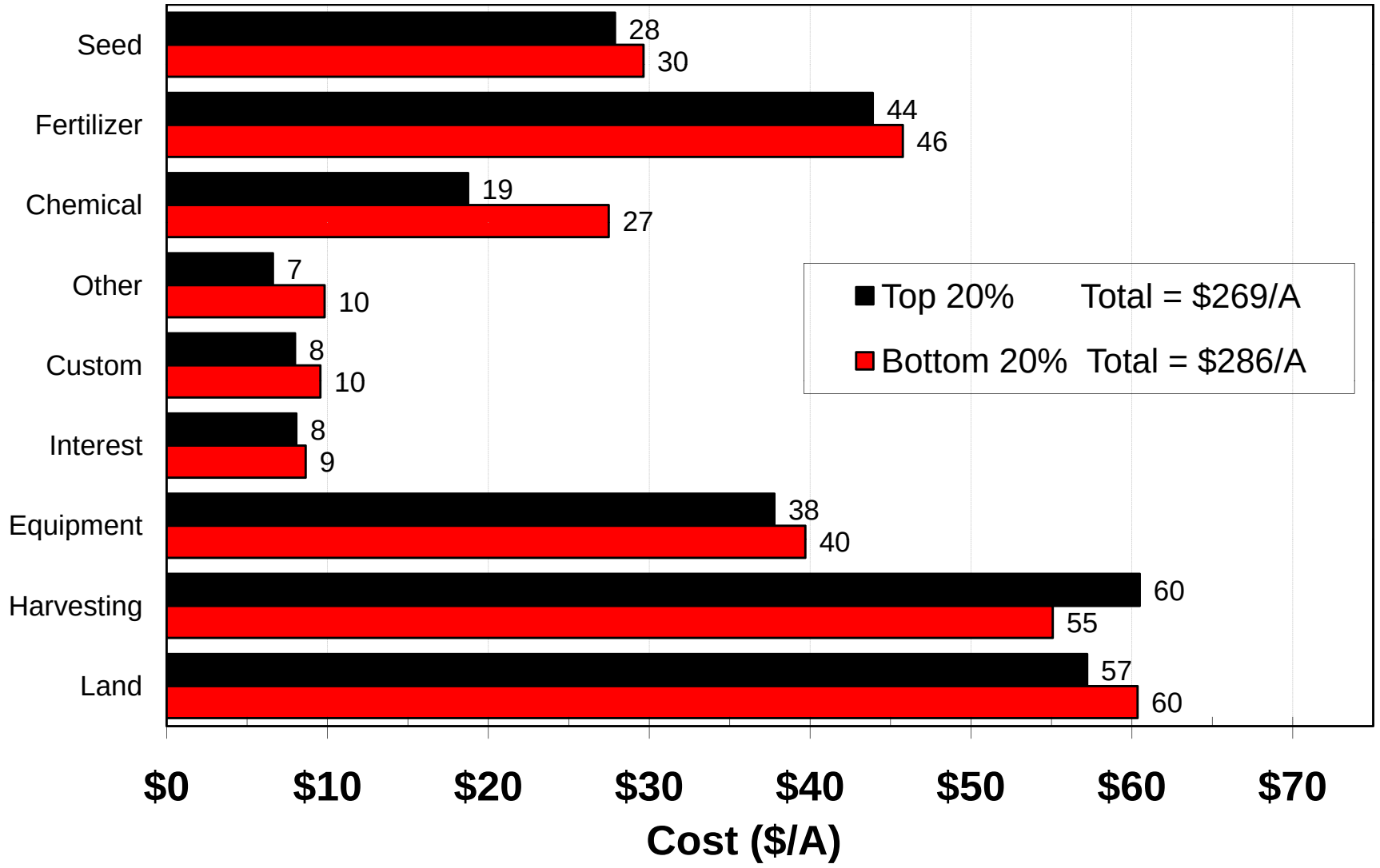
November Average Cash price derived from WI Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.



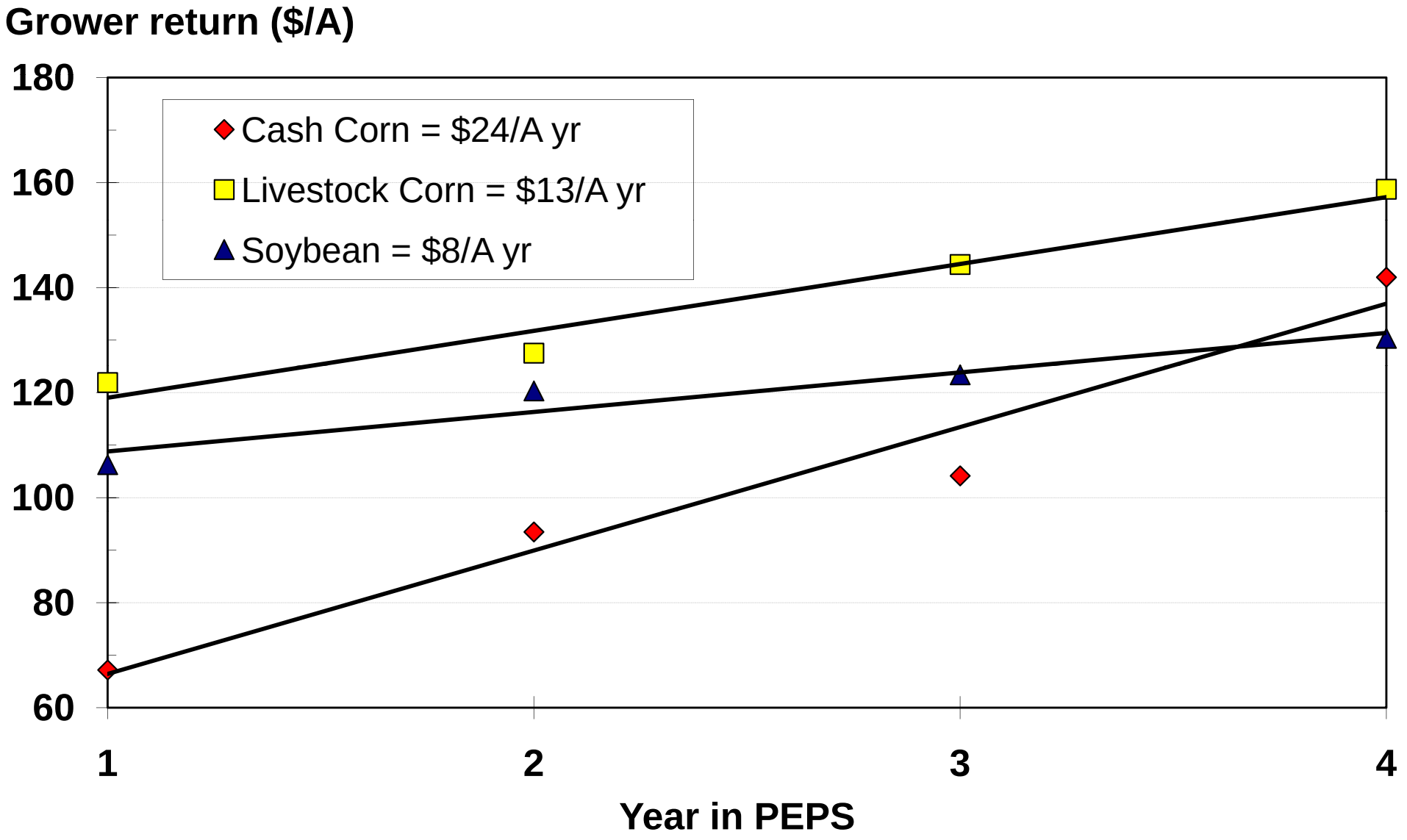
Differences between Top 20% and Bottom 20% profit groups in PEPS (1987-2003)

	Cash Corn		Livestock Corn		Soybean	
	Top 20%	Bottom 20%	Top 20%	Bottom 20%	Top 20%	Bottom 20%
Grain yield (bu/A)	189	149	182	136	62	44
Grain moisture (%)	20.1	22.6	22.7	24.3	12.6	12.9
Acre Cost ($/A)	$267	$286	$217	$231	$183	$198
Bushel cost ($/bu)	$1.44	$1.98	$1.21	$1.75	$2.98	$4.57
Grower return ($/A)	$151	$42	$191	$74	$178	$60

Cash Corn Production Costs for Profit Groups in PEPS (1987-2003)



Grower Return Increases With PEPS Participation (1987-2003, n=128)



Cost Changes of Growers After 4 Years in PEPS (1997-2003, n=128)

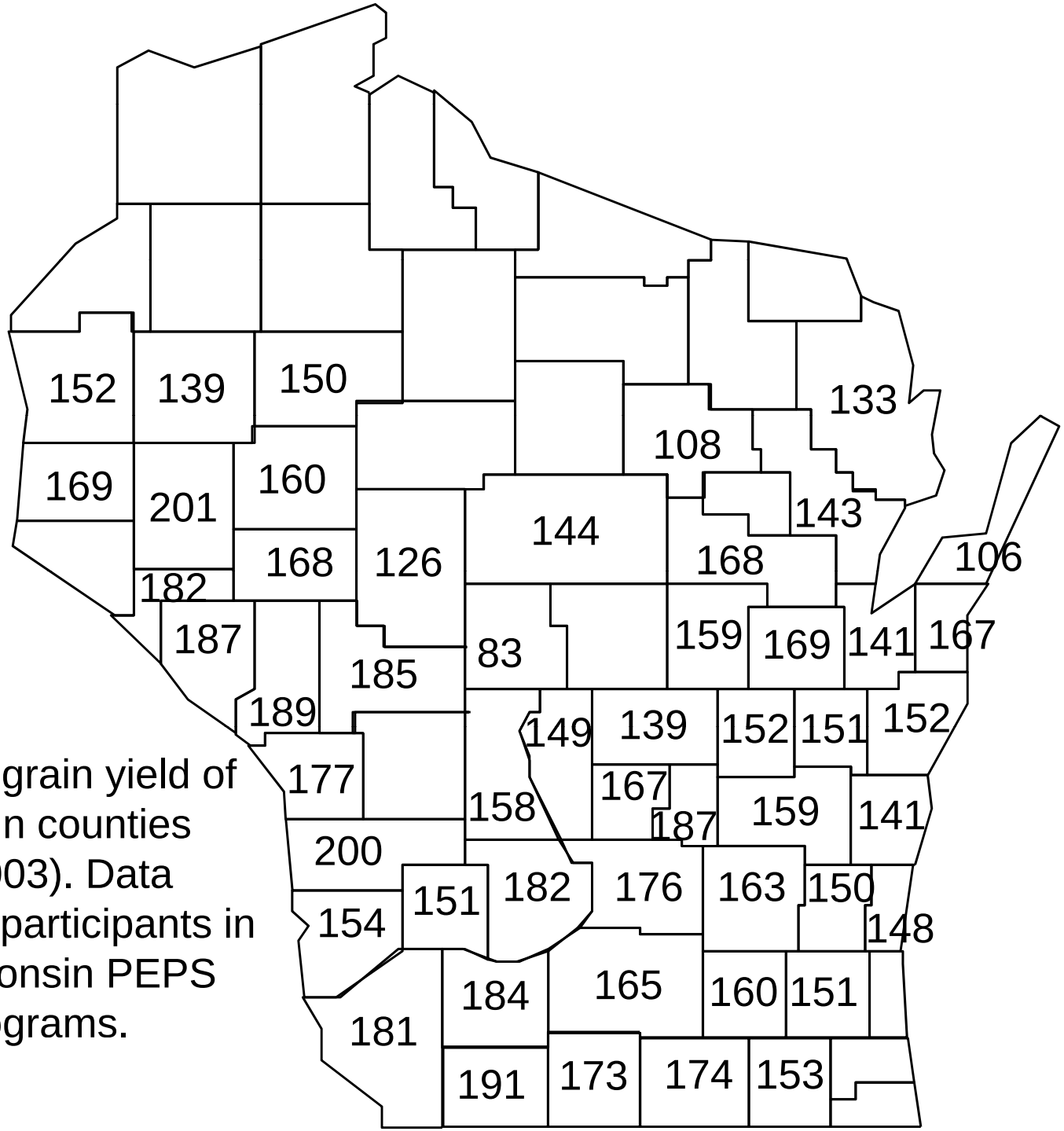
	Cash Corn				Livestock Corn			
Costs	1	2	3	4	1	2	3	4
Grain yield (bu/A)	162	155	172	170	155	155	156	161
Grain moisture (%)	21.1	21.5	21.7	20.6	22.2	23.5	23.2	23.4
Acre Cost ($/A)	269	264	271	266	220	213	217	216
Bushel Cost ($/bu)	1.69	1.74	1.61	1.61	1.46	1.40	1.42	1.38
Grower return ($/A)	68	94	100	144	119	132	142	159
Relative ranking (%)	52	68	69	73	69	70	64	70

Management Changes of Growers After 4 Years in PEPS (1997-2003, n=128)

	Cash Corn				Livestock Corn			
Practice	1	2	3	4	1	2	3	4
Hybrid maturity (days RM)	102	101	101	100	100	99	98	98
Seed density (number/A)	28500	28900	29400	30000	28100	28900	29100	29200
Field trips (number)	5.6	5.7	5.7	5.4	6.9	6.6	6.3	6.4
N Fertilizer cost ($/A)	23	21	23	19	14	12	11	12

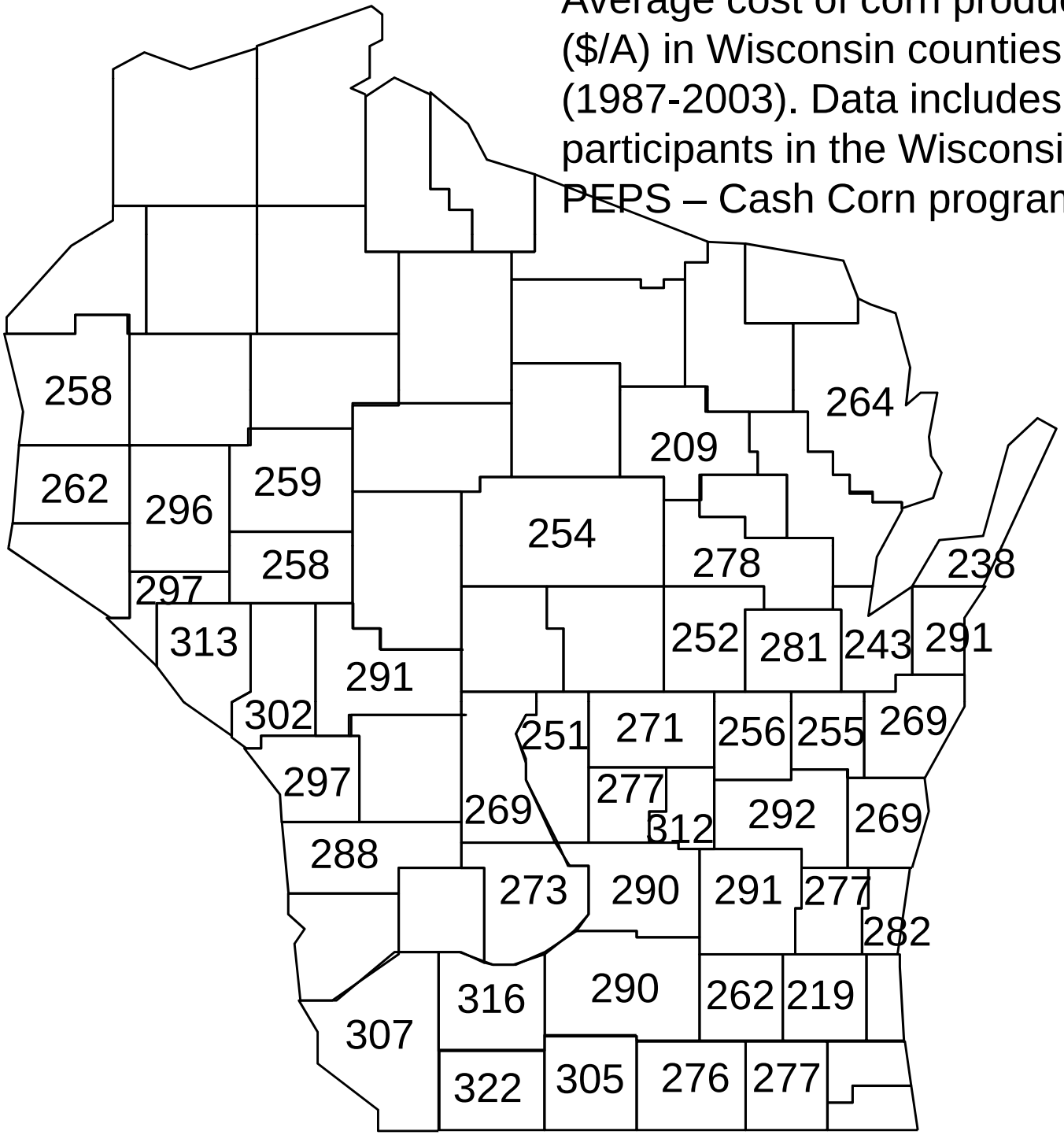
Establish Realistic Yield Performance Goals

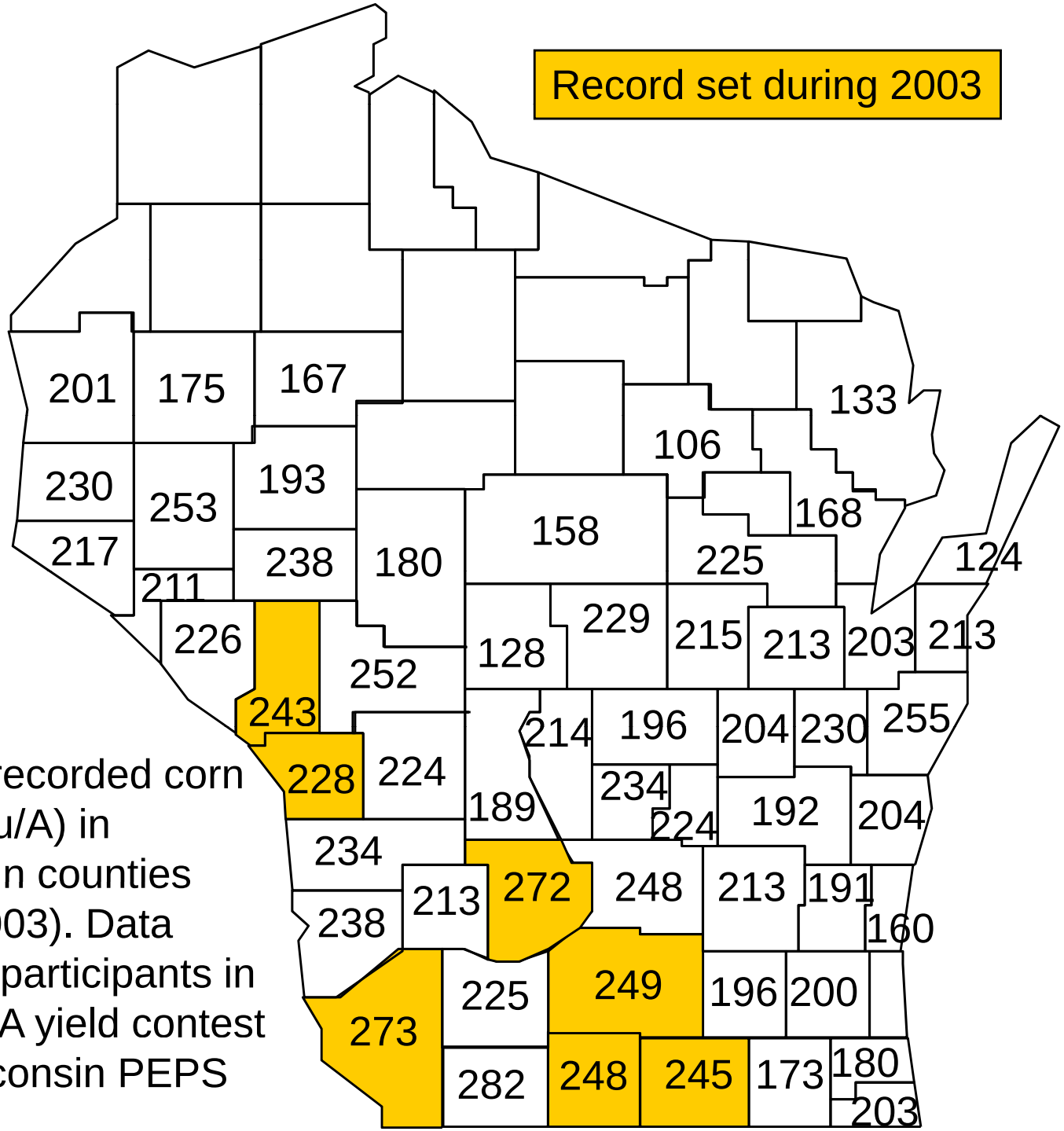
- Yield Potential of Soil
- Type of Season and Growing Degree Days
- Sub-soil Moisture
- Management Ability and Philosophy
- Attitude Toward Risk
- Willingness to Be Timely



Average grain yield of Wisconsin counties (1987-2003). Data includes participants in the Wisconsin PEPS Corn Programs.

Average cost of corn production ($/A) in Wisconsin counties (1987-2003). Data includes participants in the Wisconsin PEPS – Cash Corn program.





Highest recorded corn yields (bu/A) in Wisconsin counties (1983-2003). Data includes participants in the NCGA yield contest and Wisconsin PEPS program.

Hybrid Selection

- Your approach to picking hybrids makes all the difference
  - ✓ Don't be "sold" hybrids
  - ✓ Make a short list of potential hybrids and stick with it
- Use care when selecting "normal" corn hybrids
- Buy the specialty traits you need
  - ✓ Not all traits perform equally

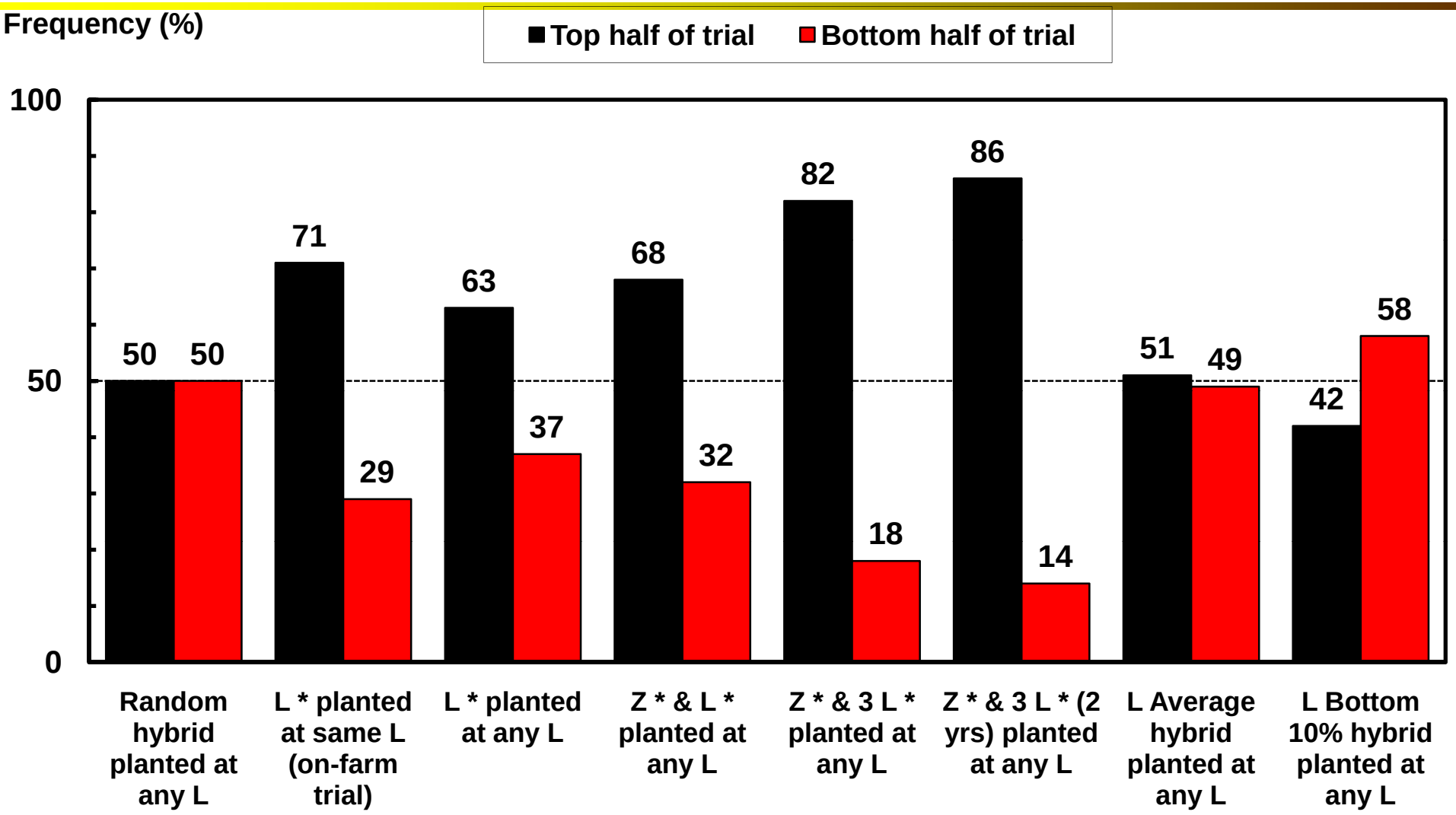
Examples of Hybrids Selected Using Various Strategies

Table 4. Southern Zone - Early Maturity Grain Trial (page 2 of 2)

105 DAY RELATIVE MATURITY OR EARLIER, BASED ON COMPANY RATING (ARLINGTON = ARL, JANESVILLE = JAN,

	1998								1997							
	AVERAGE					ARL	JAN	LAN	AVERAGE					ARL	JAN	LAN
Hybrid	Yield bu/A	Moist %	Test Wt.	Lodged %	P.I.#	Yield bu/A	Yield bu/A	Yield bu/A	Yield bu/A	Moist %	Test Wt.	Lodged %	P.I.#	Yield bu/A	Yield bu/A	Yield bu/A
A	219	22.8	55	1.6	100	236	196	225	167	28.9	55	3.5	98	169	161	169
B	228	23.3	52	7.8	101	243	225 *	217								
C	185	23.9	54	1.1	92	205	169	180								
D	238 *	23.9	54	2.1	104 *	259	225 *	231 *	198 *	28.2	55	3.3	108 *	201 *	196 *	197 *
E	236 *	24.3	53	0.8	103 *	266 *	213 *	229 *	185 *	27.6	55	1.5	105 *	169	191 *	195 *
F	245 *	26.1	55	2.8	104 *	259	234 *	242 *								
MEAN	219	22.3	54	3.2	100	239	202	217	170	27.4	54	3.4	100	171	169	169
LSD(0.10)**	13	1.7	1	5.6	3	18	22	18	13	1.7	1	3.0	4	16	20	18

Hybrid Selection Strategies Using WI Results 1973-1998 (L=Location, Z=Zone)



The Economic Consequences of Corn Hybrid Selection Schemes (1973 to 1998)

Selection scheme	Relative yield	Grain yield difference	Grower return difference
	percent	bu/A	$/A
1 L* (on-farm)	104	6	14
Z* & ≥ 3L*	107	11	25
Z* & ≥ 3L* (2 yrs)	108	12	28
1 L average	100	0	0
1 L bottom 10%	98	-3	-7

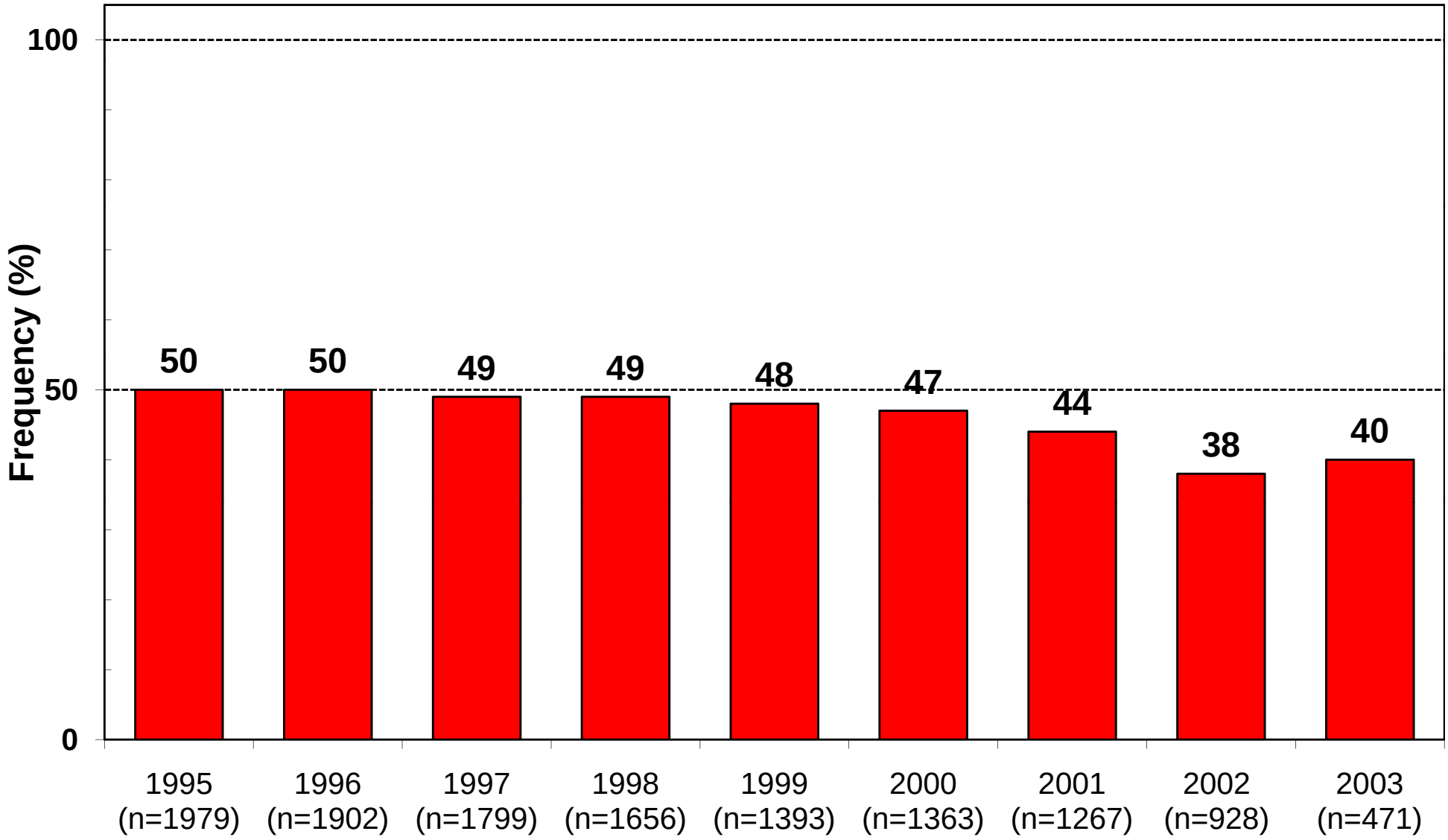
Grower return difference = grower return of selected hybrids - trial average

The Economic Consequences Over Time of Corn Hybrid Selection Schemes (1973-98)

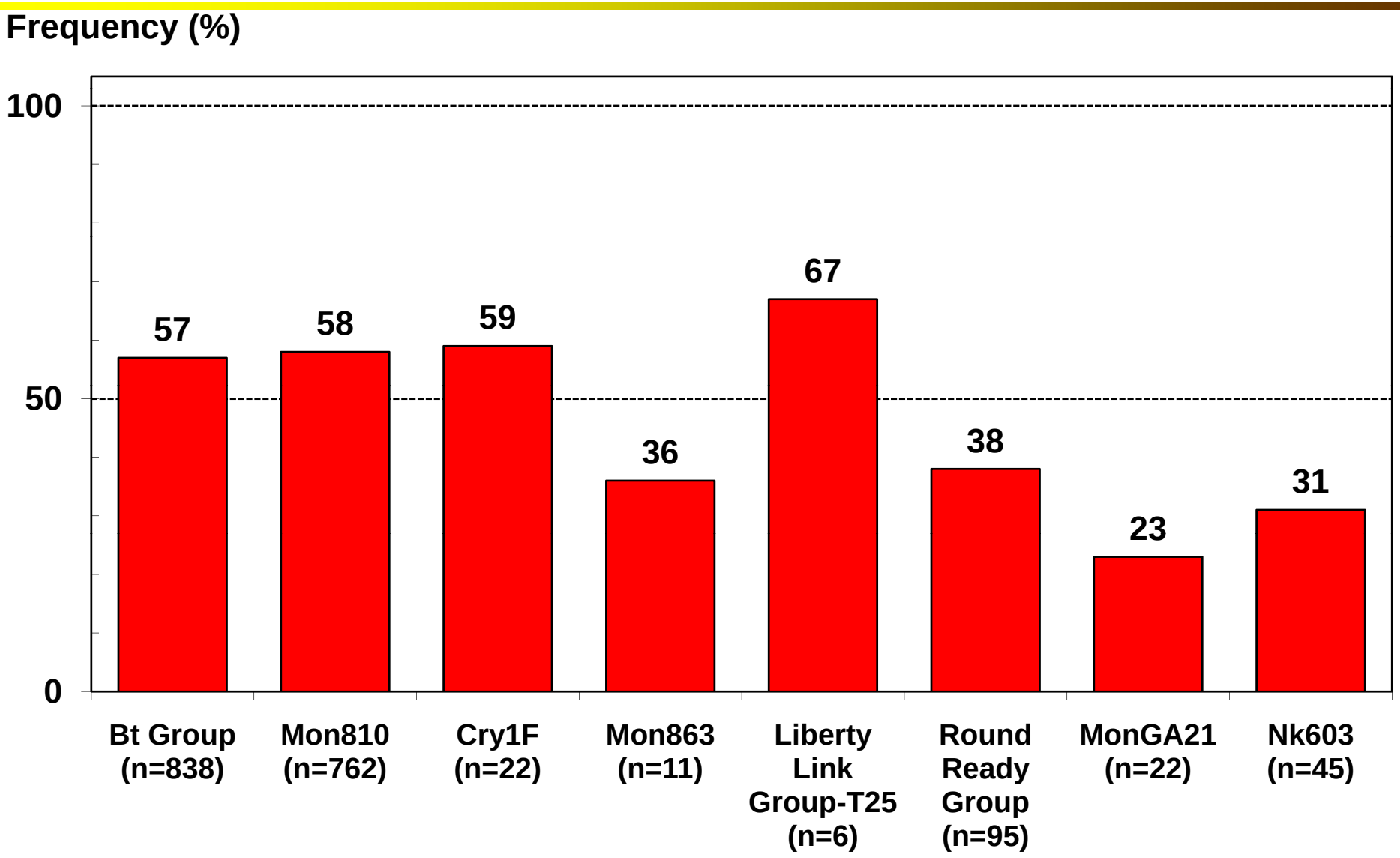
	Previous years		Selected year	Future years			
Selection scheme	-2	-1	0	1	2	3	4
	dollars per acre difference						
1 L* (on-farm)	22	21	51	14	11	11	7
Z* & > 3L*	32	32	51	25	20	20	17
Z* & > 3L* (2 yrs)	39	39	52	28	22	24	16
1 L average	9	7	0	0	-1	-2	-4
1 L bottom 10%	5	0	-56	-7	-7	-8	-8

Dollars per acre difference = grower return of selected hybrids - trial average

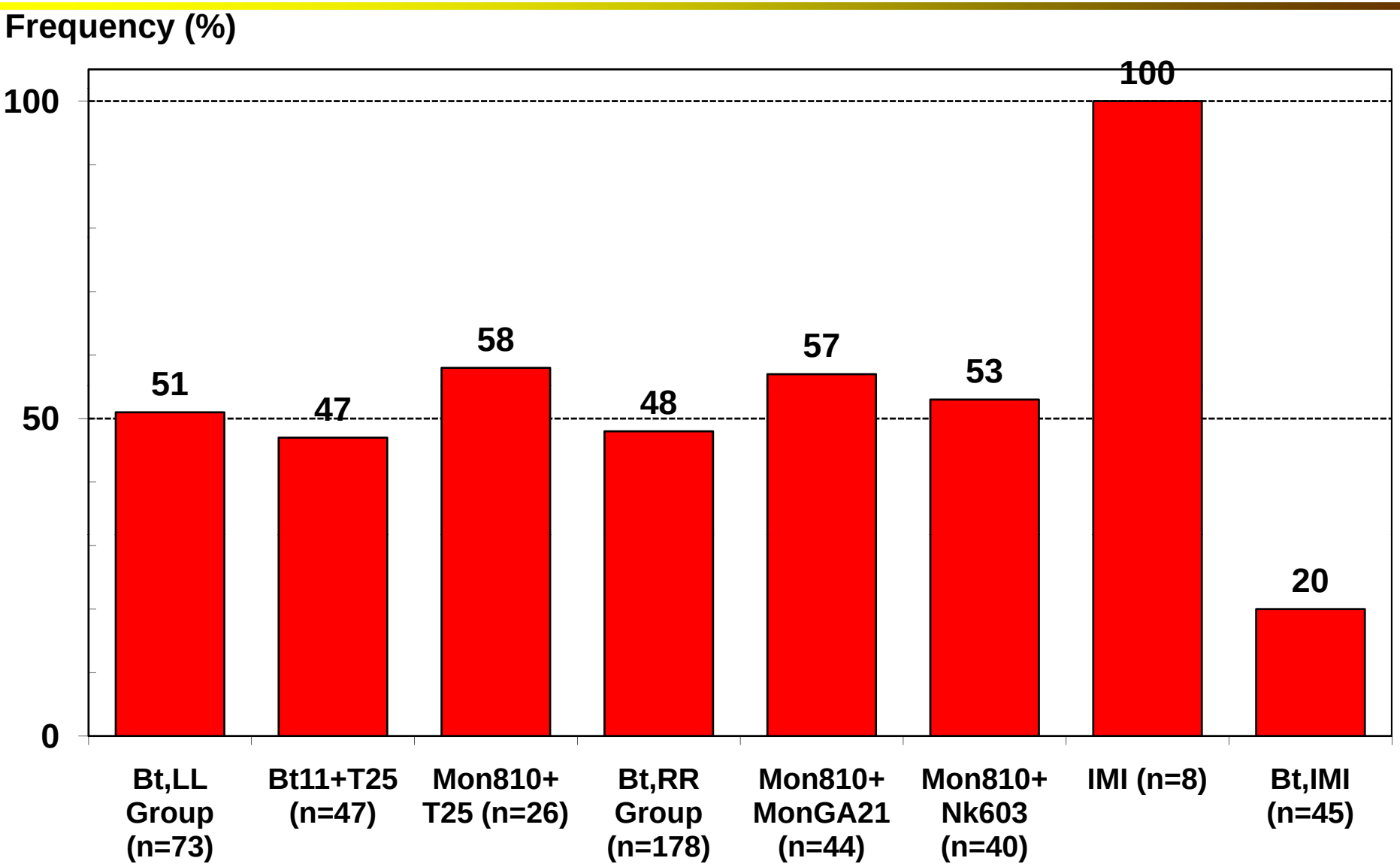
Frequency of 'Normal' Corn Hybrids Yielding Above Average in the WI Hybrid Trials



Frequency of Transgenic Hybrids Yielding Above Average in the 2003 WI Hybrid Trials



Frequency of “Stacked” Transgenic Hybrids Yielding Above Average in the 2003 WI Hybrid Trials



Using Corn Hybrid Performance Trial Results

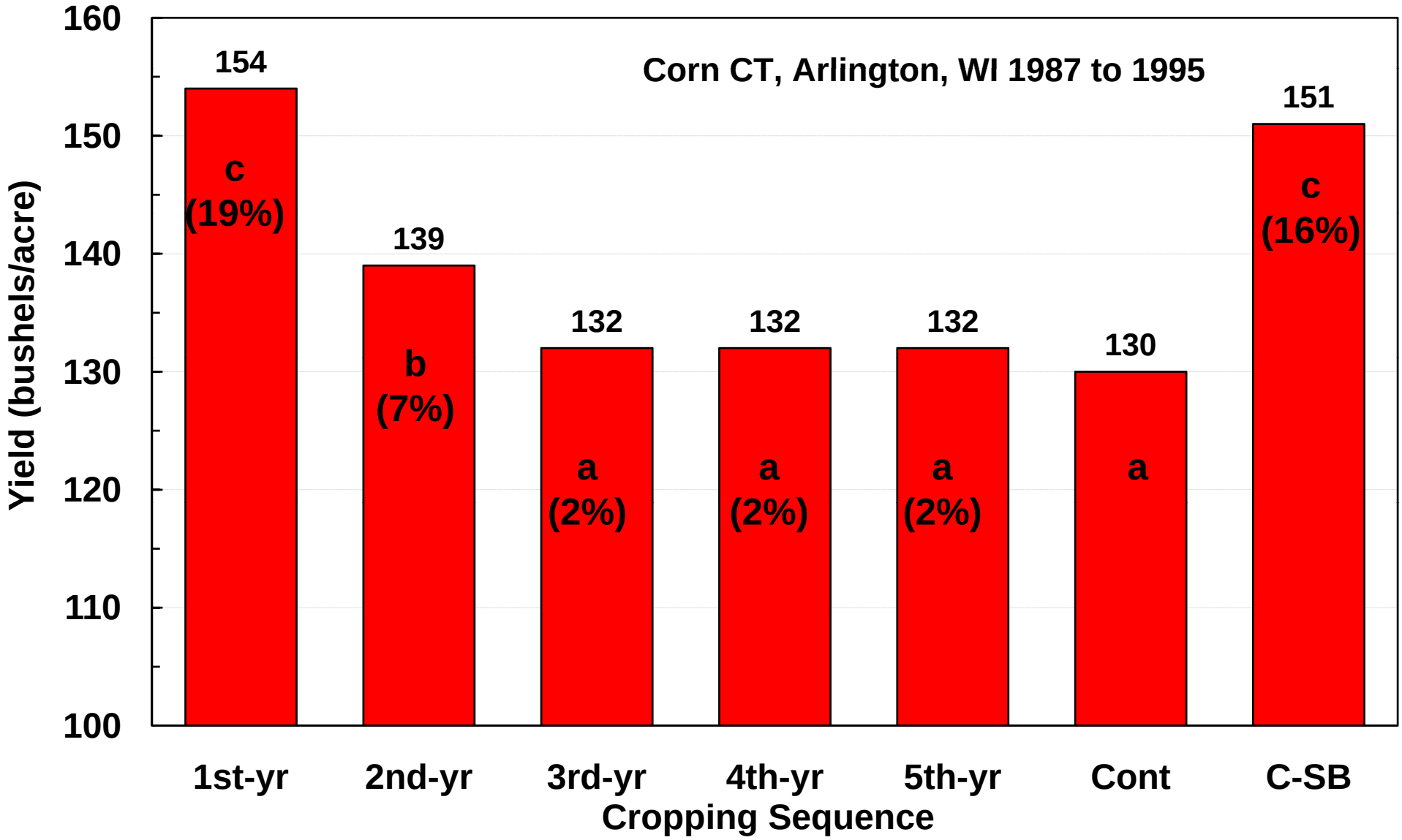
- Use multi-environment average data
  - ✓ Begin with trials in zone(s) nearest you
  - ✓ Compare hybrids with similar maturities
  - ✓ Use many years and locations
- Evaluate consistency of performance
  - ✓ Check performance in other zones and locations
  - ✓ Check other reliable unbiased trials
  - ✓ Be wary of inconsistent performance.

You are taking a tremendous gamble if basing your hybrid selection decisions on 1 or 2 local test plots

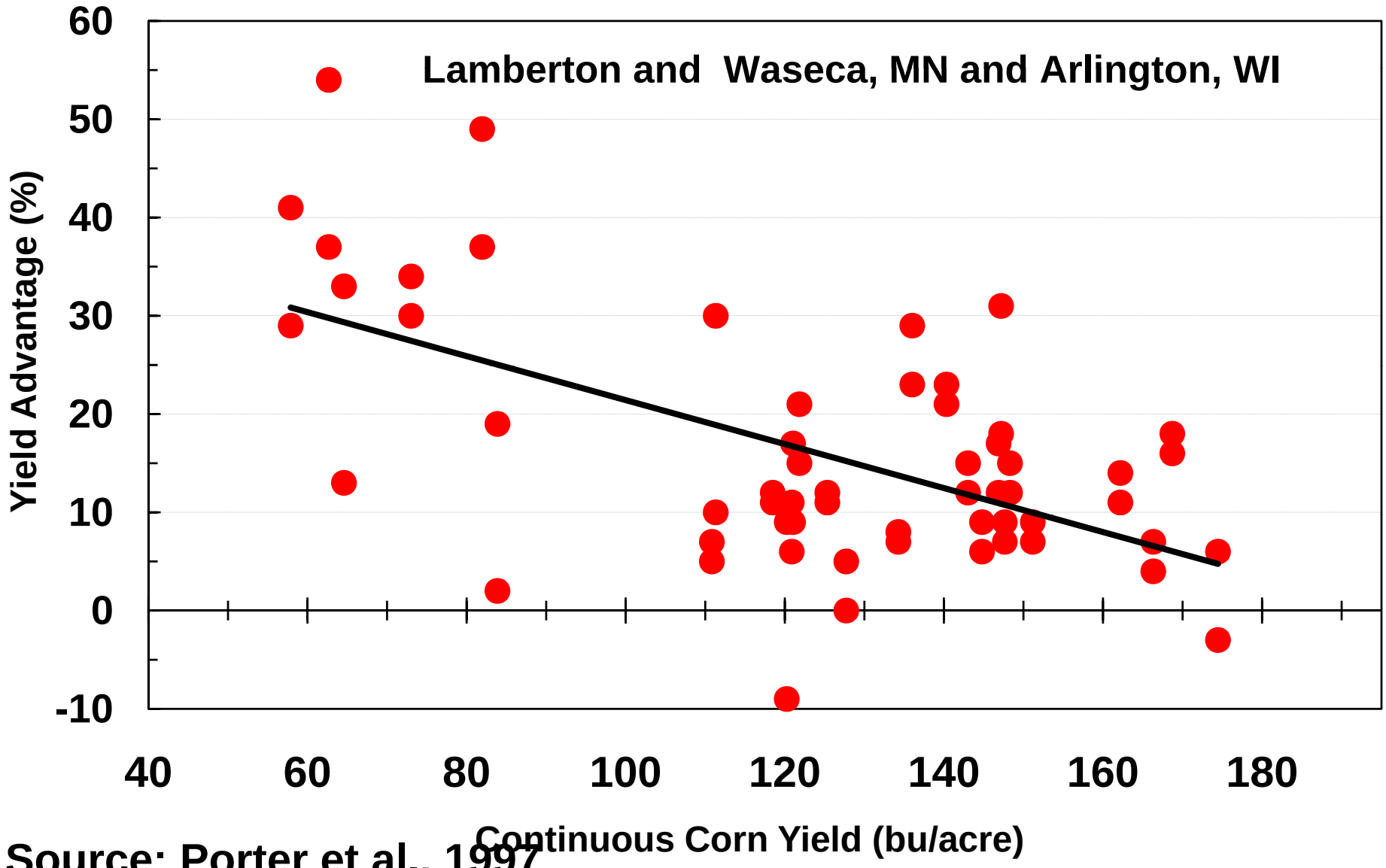
Trends and Changes in the UW Corn Hybrid Performance Trials

- Previously tested corn hybrids (last 4 years).
  - ✓ "You never test any hybrids I am interested in."
- Number of hybrids being tested.
- Transgenic genes listed (all tables).
  - ✓ Select hybrids by performance rather than by trait.
- Silage Relative Maturity

Corn Yield Response Following Five Years of Soybean in a Corn-Soybean Rotation



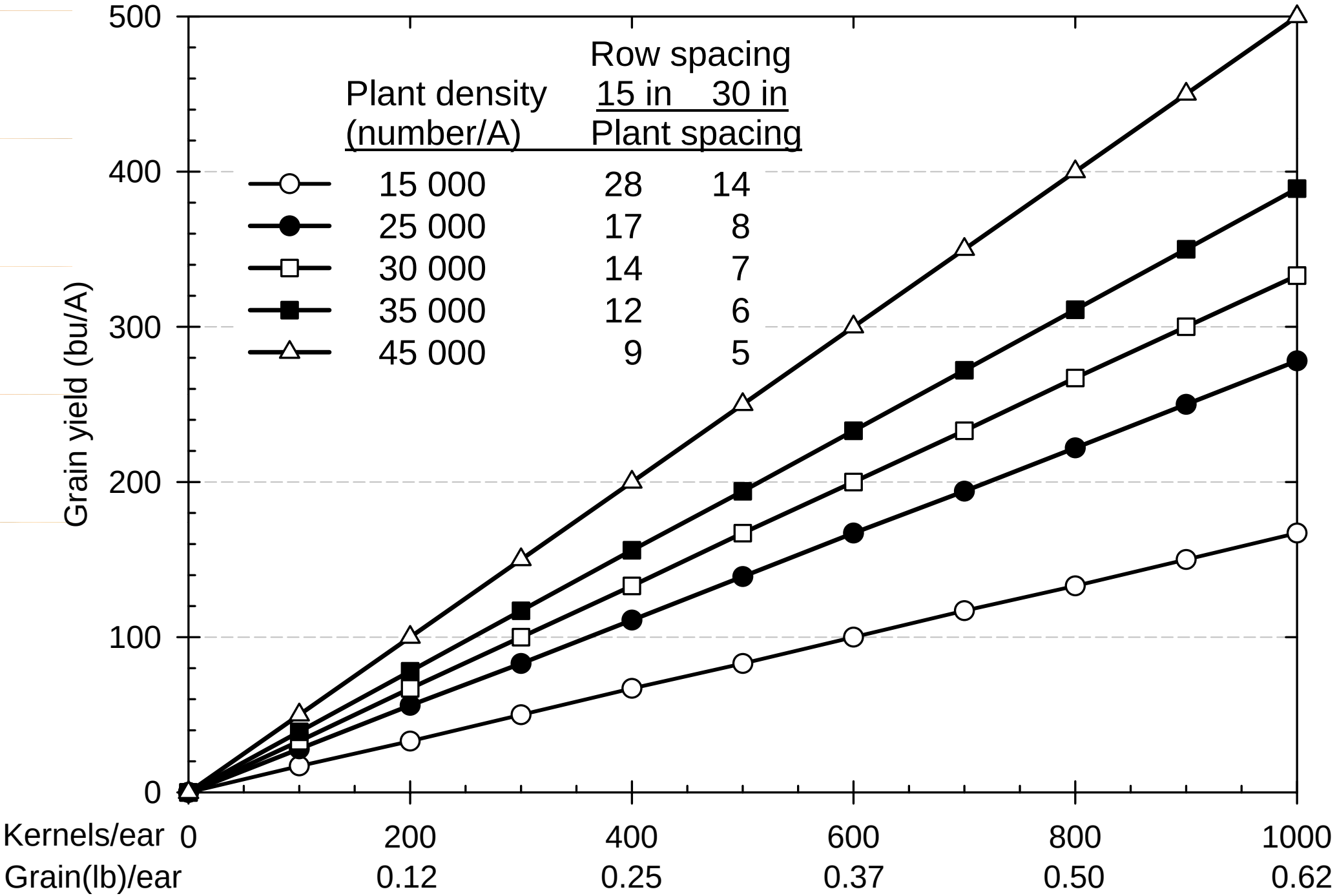
Relationship Between Rotated Corn Yield and Continuous Corn Yield Environments



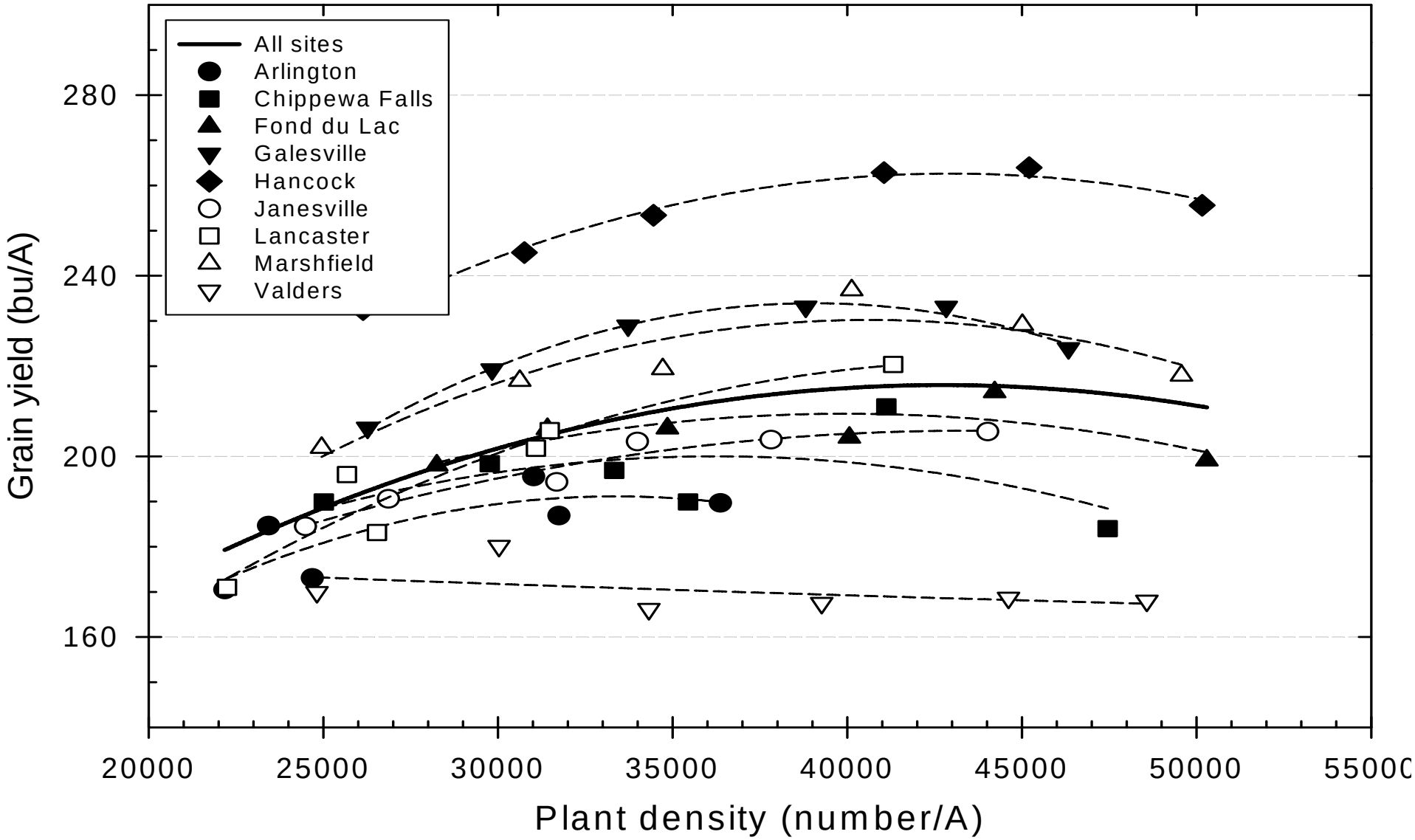
Source: Porter et al., 1997

Potential Grain Yield Using Calculated Components

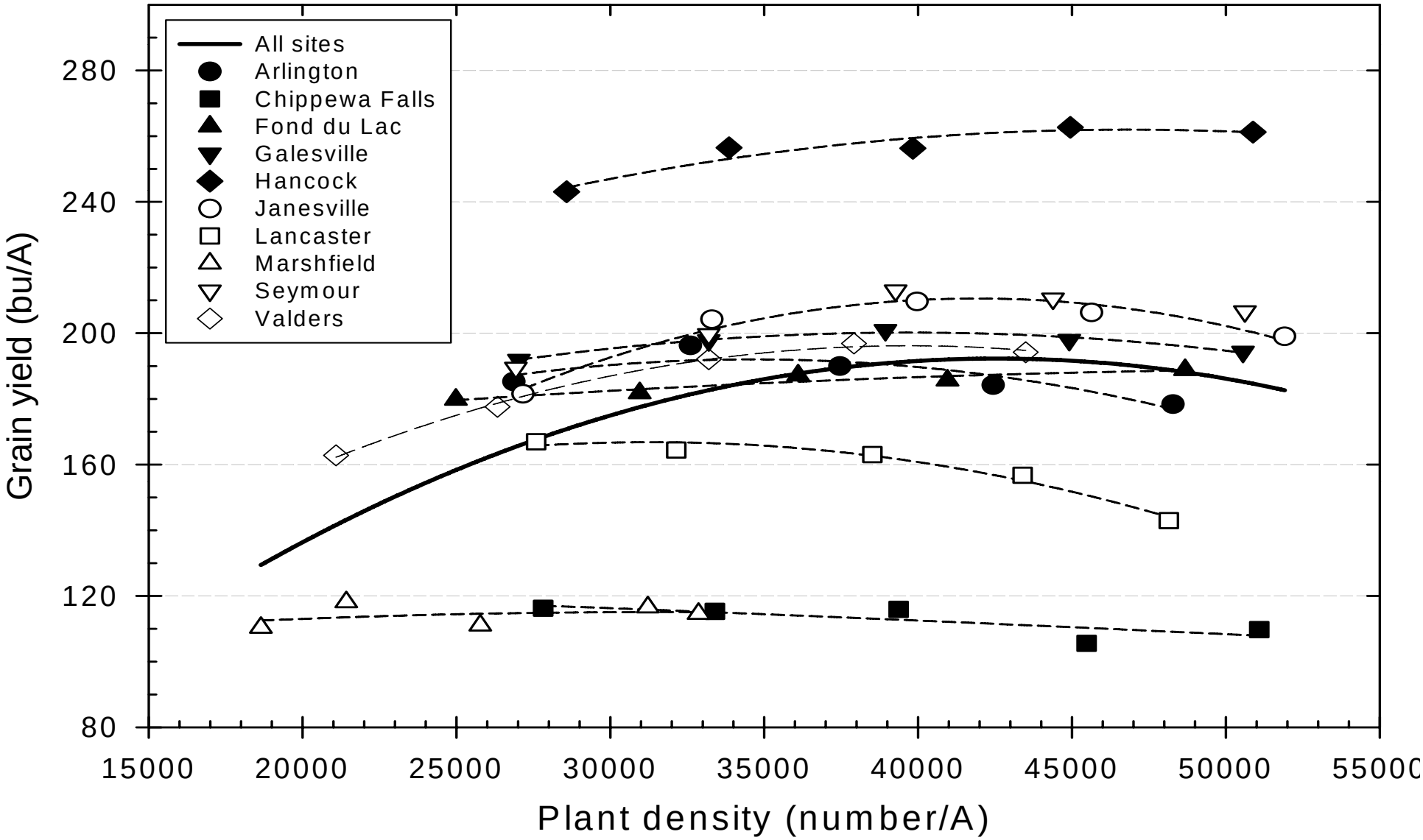
Assume 90,000 kernels/bu and 56 lb/bu; kernel mass = 282 mg



Corn response to plant density in Wisconsin during 2002



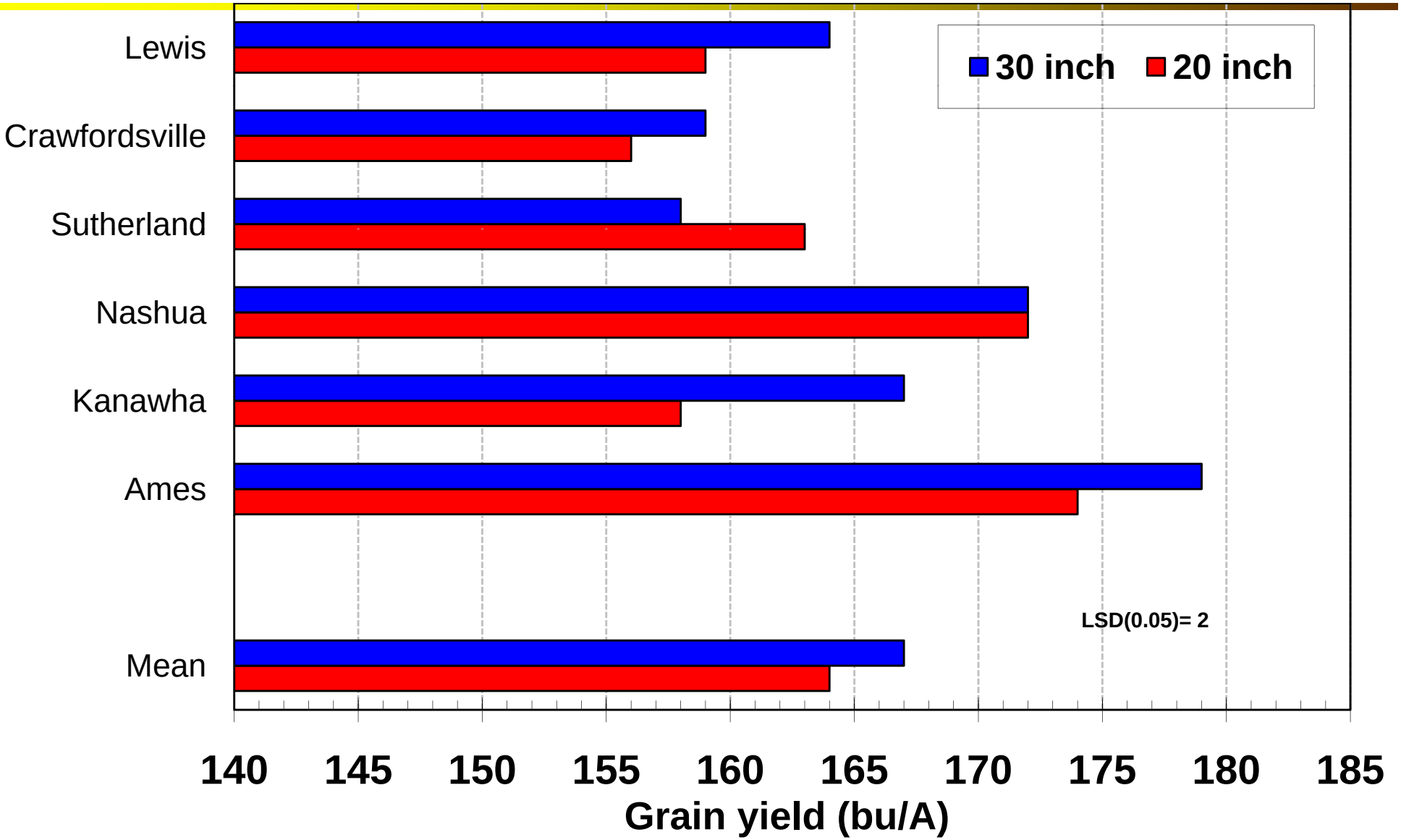
Corn response to plant density in Wisconsin during 2003



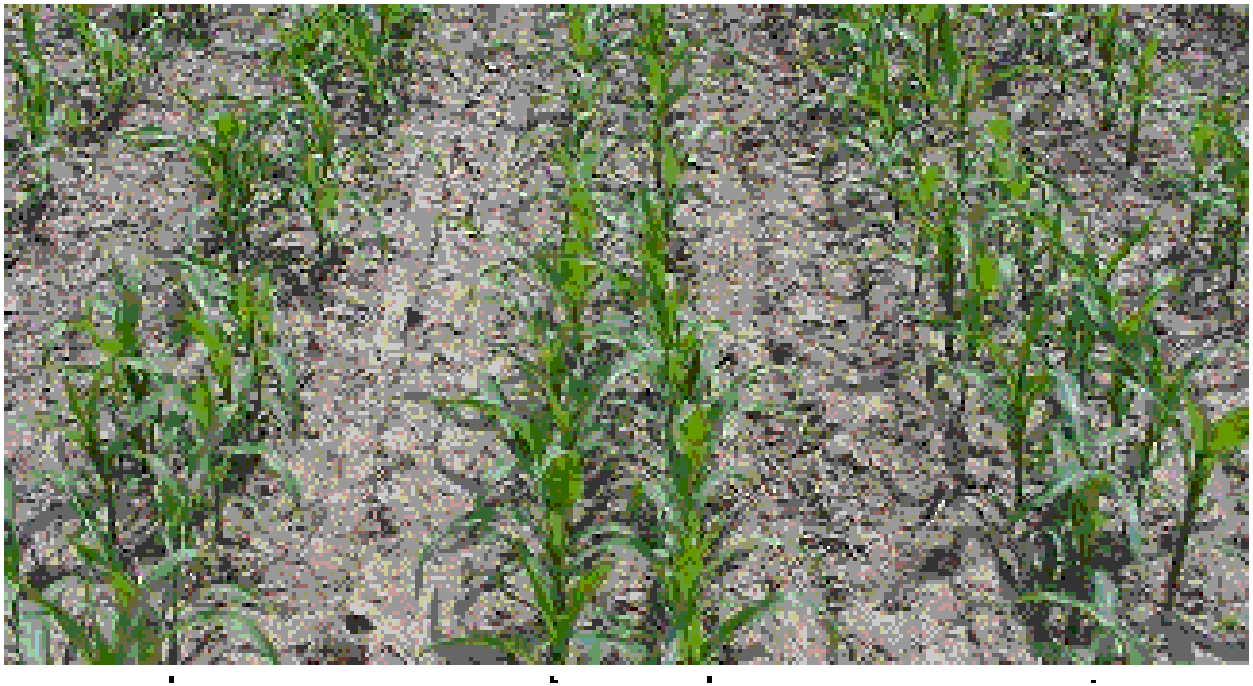
Corn response to row width in Michigan 1998-1999. Each value is the mean of 880 plots.

Row width	Yield	Moisture	Stalk Lodging
(in)	(bu/A)	(%)	(%)
30	177 c	19.6 a	1.60 b
22	181 b	19.2 b	1.92 a
15	184 a	19.2 b	1.65 b

Narrow Row Comparisons in Iowa 1997-1999 (Farnham, 2001 AJ 93:1049)

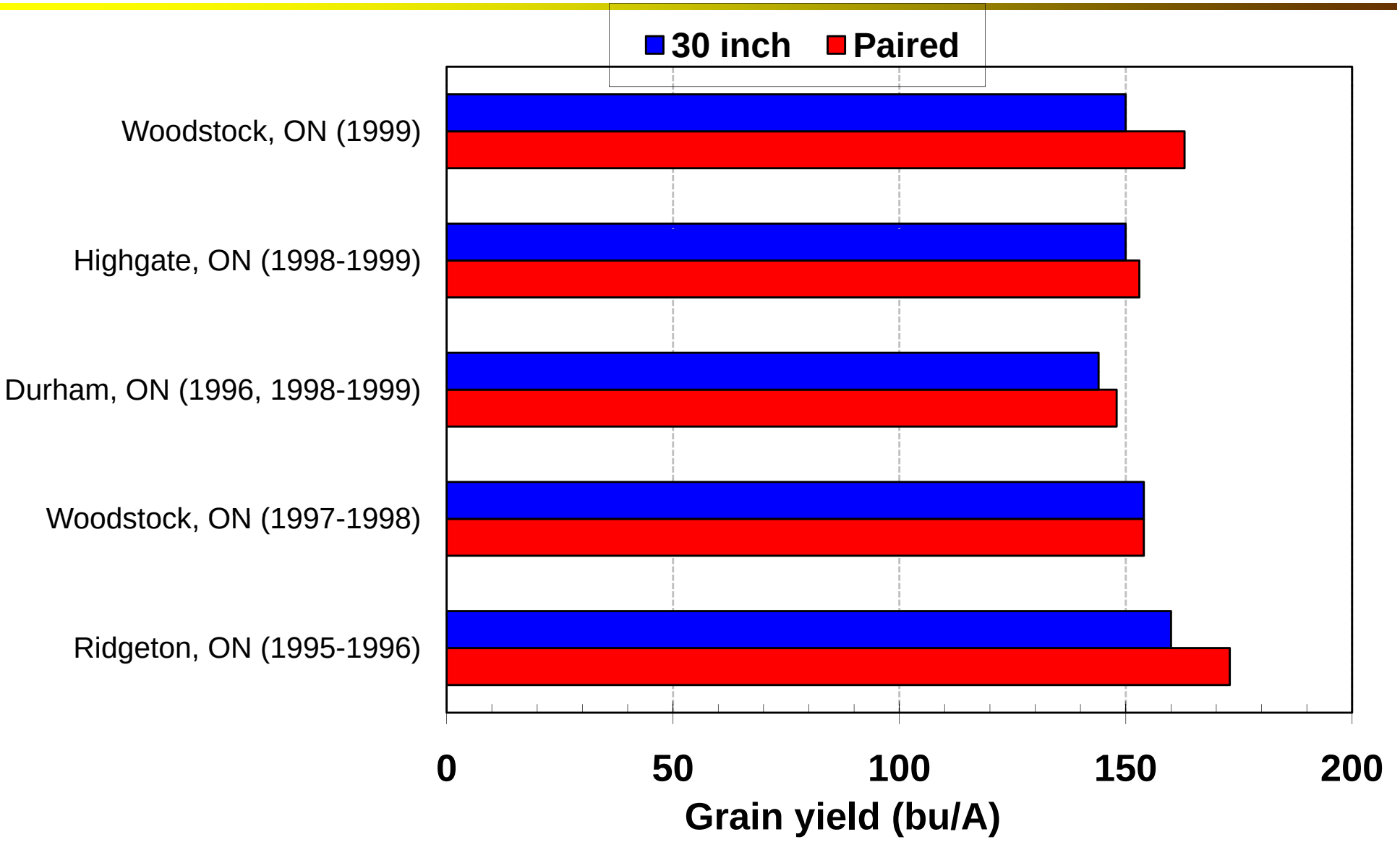


Paired (“Twin”) Row Corn

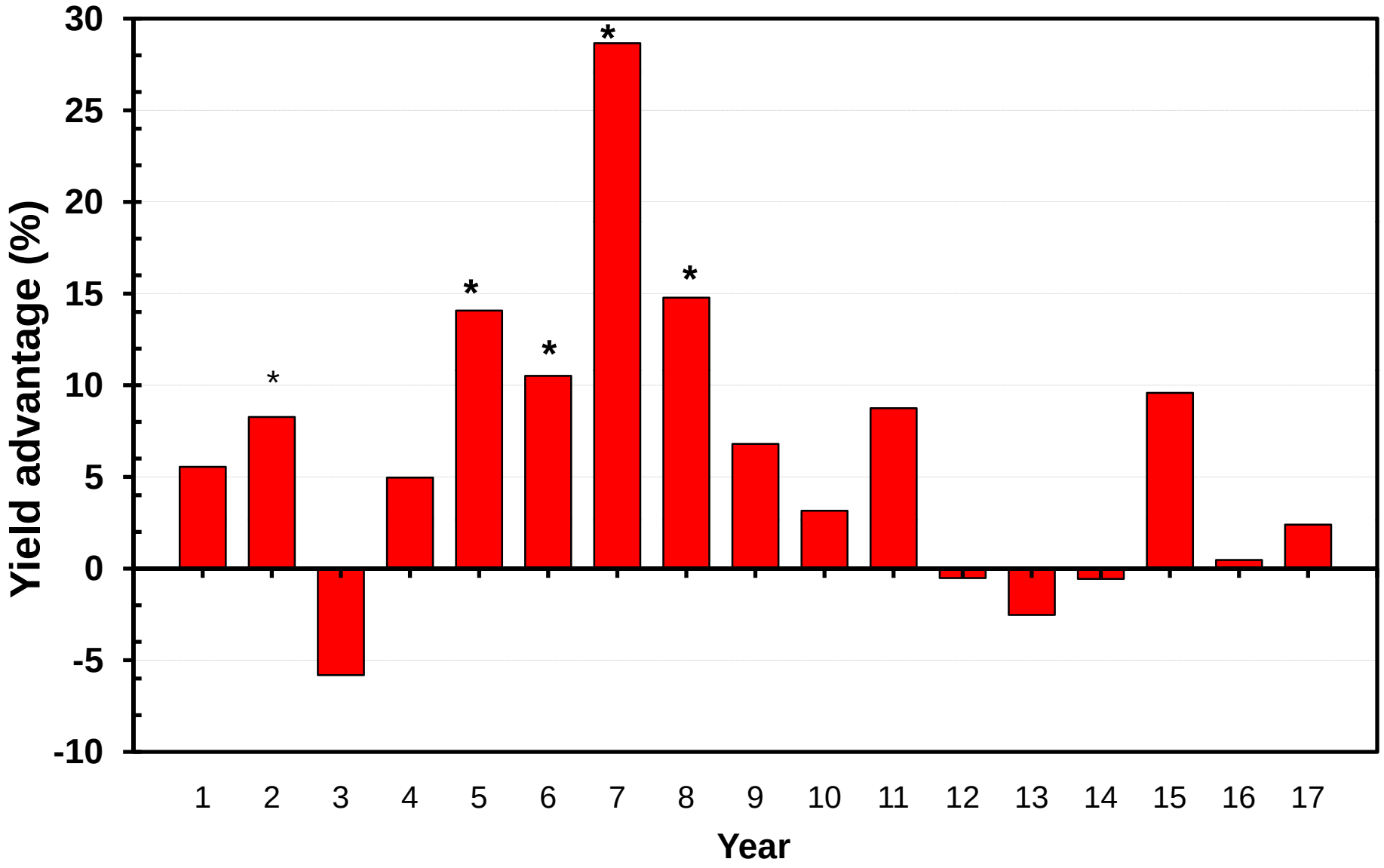


- Karlen and Kasperbauer (1989) reported a 9% decrease in corn yield in the SE USA from twin rows compared to 30 in single rows.
- Ottman and Welch (1989) reported no differences between single 30 in rows and twin rows on 30 in centers (- 2% difference).

Paired Row Comparisons in Ontario (Stewart)



Yield advantage of chisel plow tillage over no-till 1986-2002 ("Long" Rotation trial, n= 6608 plots)



2004

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February 3-4
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