Background on Plant Spacing Variability

- **Recent interest in the grain yield response of corn to plant spacing variability.**
  - ✓Planter "tuning" services offered
- **Pioneer agronomists estimate yield losses of between 5 and 10 bushels/A in corn stands with non-uniform spacing.**
- **Some advertisements in popular press claim up to 20% yield increases with properly tuned planters.**

Uniform Stand:

- **Plants emerged in adequate numbers, with uniform spacing and emergence time**

(Hoeft, R.G., E.D. Nafziger, R.R. Johnson, and S.R. Aldrich)

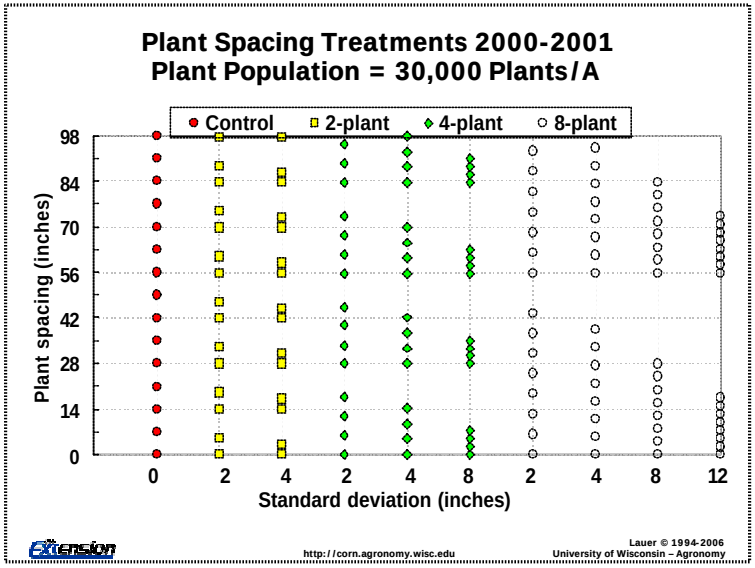
Stand Establishment Variability

- **Big gaps**
- **Multiple plants**
- **Late emergers**

Stand Characteristics of Wisconsin Corn Fields Evaluated for Stand Uniformity (n= 127)

	Average	Minimum - Maximum
Standard deviation (inches)	3.3	1.9 – 6.8
Doubles per 50 ft. (≤2")	5.4	0.1 – 25.9
Gaps per 50 ft. (≥12")	7.0	1.0 – 16.9
Average spacing (inches)	7.2	4.7 – 14.8
Planting rate (plants/A)	30,553	21,000 – 42,000
Actual plant density (plants/A)	29,727	21,916 – 44,605
Stand as % planted	97	78 - 121

Rankin, 2000


Plant Spacing Treatments 2000-2001
Plant Population = 30,000 Plants/A
Control
2-plant
4-plant
8-plant
Plant spacing (inches)
98
84
70
56
42
28
14
0
0 2 4 2 4 8 2 4 8 12
Standard deviation (inches)
Extension
http://corn.agronomy.wisc.edu
Lauer © 1994-2006
University of Wisconsin – Agronomy

Summary of variance analysis

Factor	Plant height	LAI	Forage yield	Grain yield
Emergence	**	**	**	**
Spacing	NS	NS	NS	NS
E X S	NS	NS	NS	NS

** Significant at P ≤ 0.05, NS = Non significant