Impact of Cultural Practices on Soybean Aphid Incidence, Soybean Yield, and Virus Incidence

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Possible Cultural Practices for Aphid-Virus Control

- Date of Planting
- Seeding rate
- Row width comparisons
- Varietal selection
- Tillage practices
- Fertility and fertilization
- Rotations?
- Canopy Density
- Virus free seed

Cultural Practices for Soybean Aphid Control

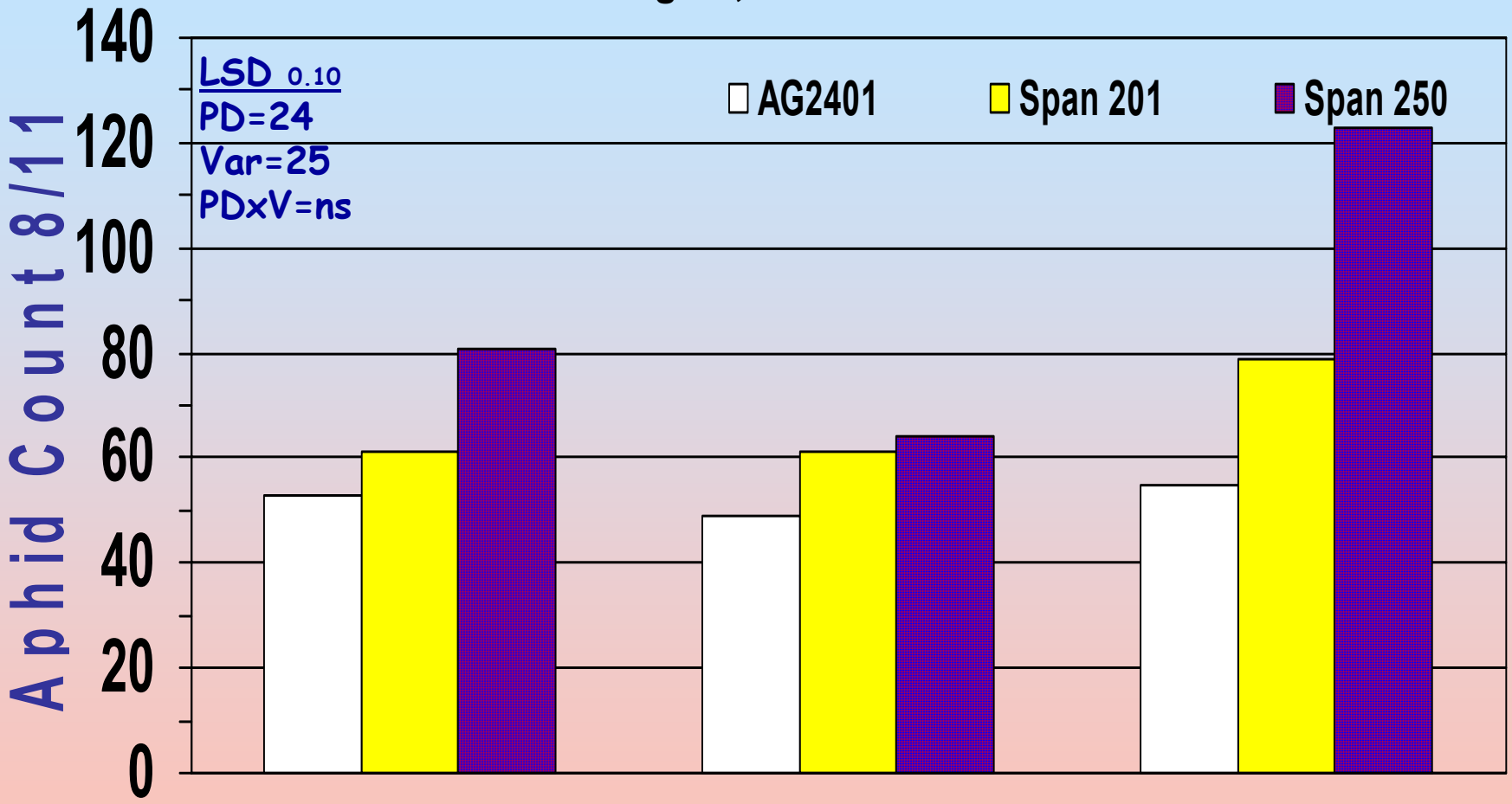
Observations in 2000

- High soybean aphid pressure in late planted fields
- High soybean aphid pressure in low plant population areas

- First instinct is to use insecticides
- Cultural practices may help also

Effect of planting date and variety on aphid incidence.

Arlington, WI. 2000



Grau, Kurtzweil, 2000

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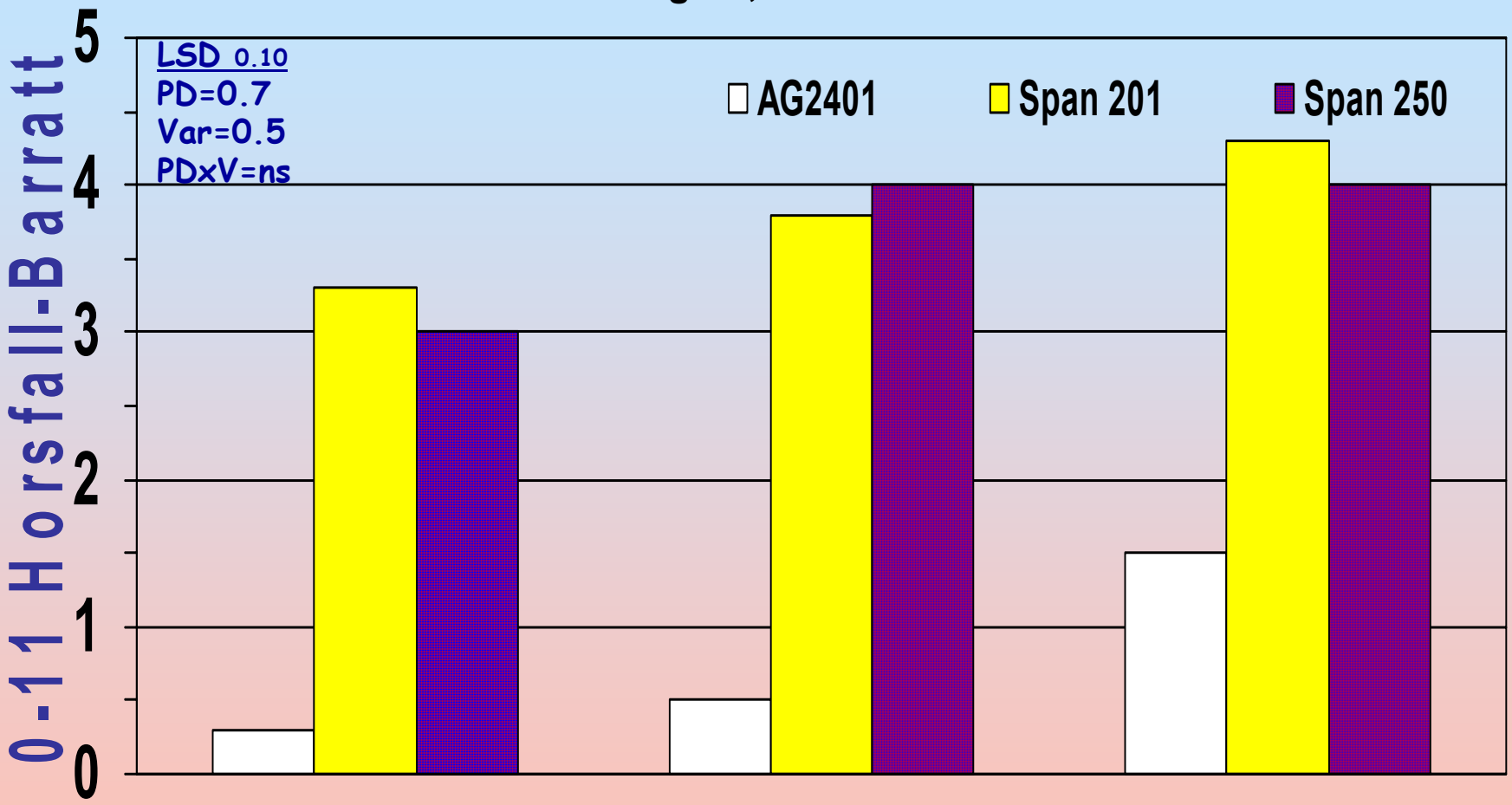
Effect of planting date and variety on virus symptoms.

Arlington, WI. 2000



Grau, Kurtzweil, 2000

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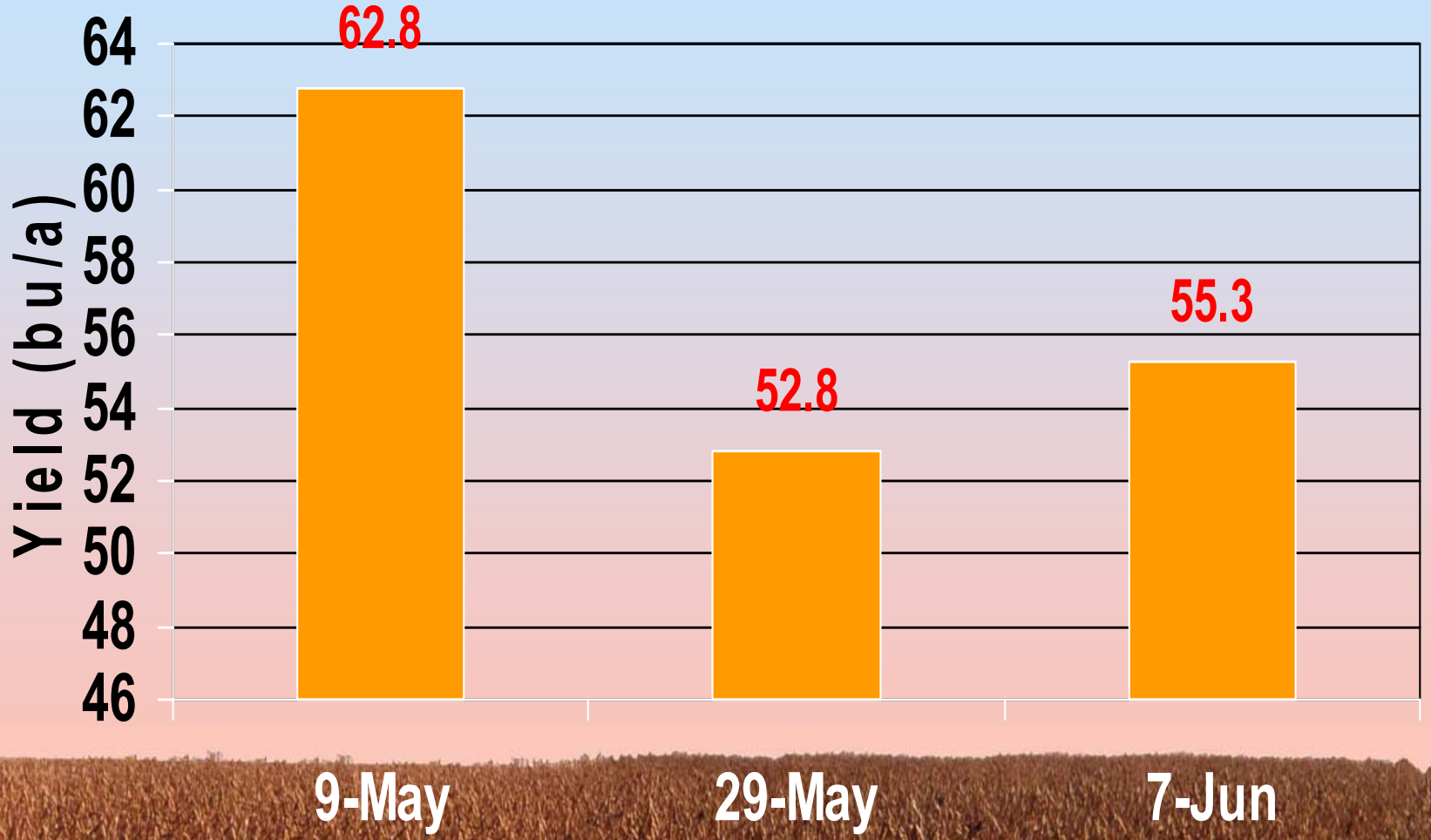
Materials and Methods

2001 Date of Planting Study

- Location: Arlington Ag Research Station
- Expt. Design: RCB
- Reps: 4
- Variety: DSR-215RR
- Row width: 30”, 120,000 seeds/acre
- Planting dates: May 9, May 29, June 7
- No insecticides were used

Soybean Aphid Date of Planting

Arlington, WI 2001



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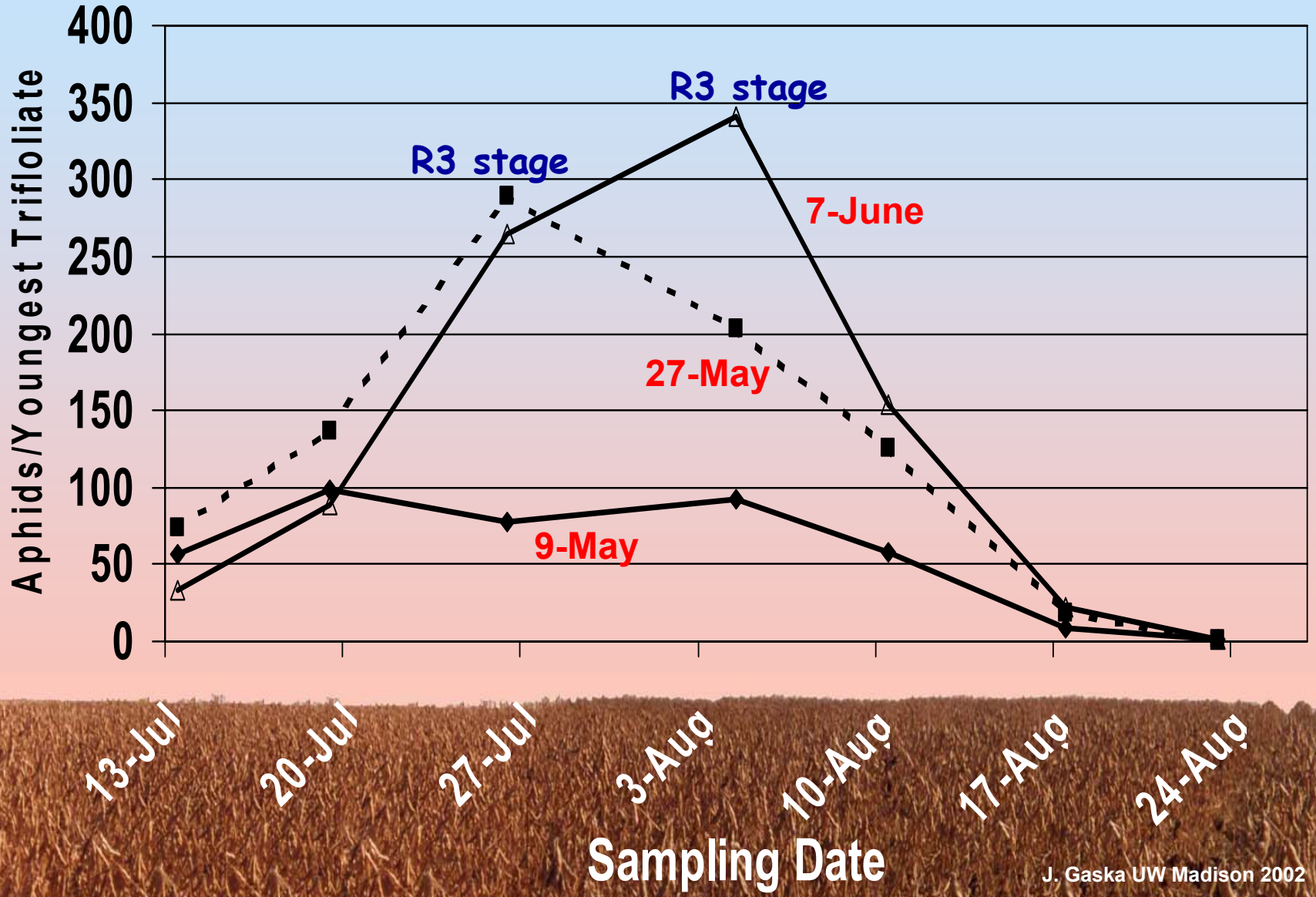
Soybean Aphid Population vs. Planting Date

Arlington, WI 2001



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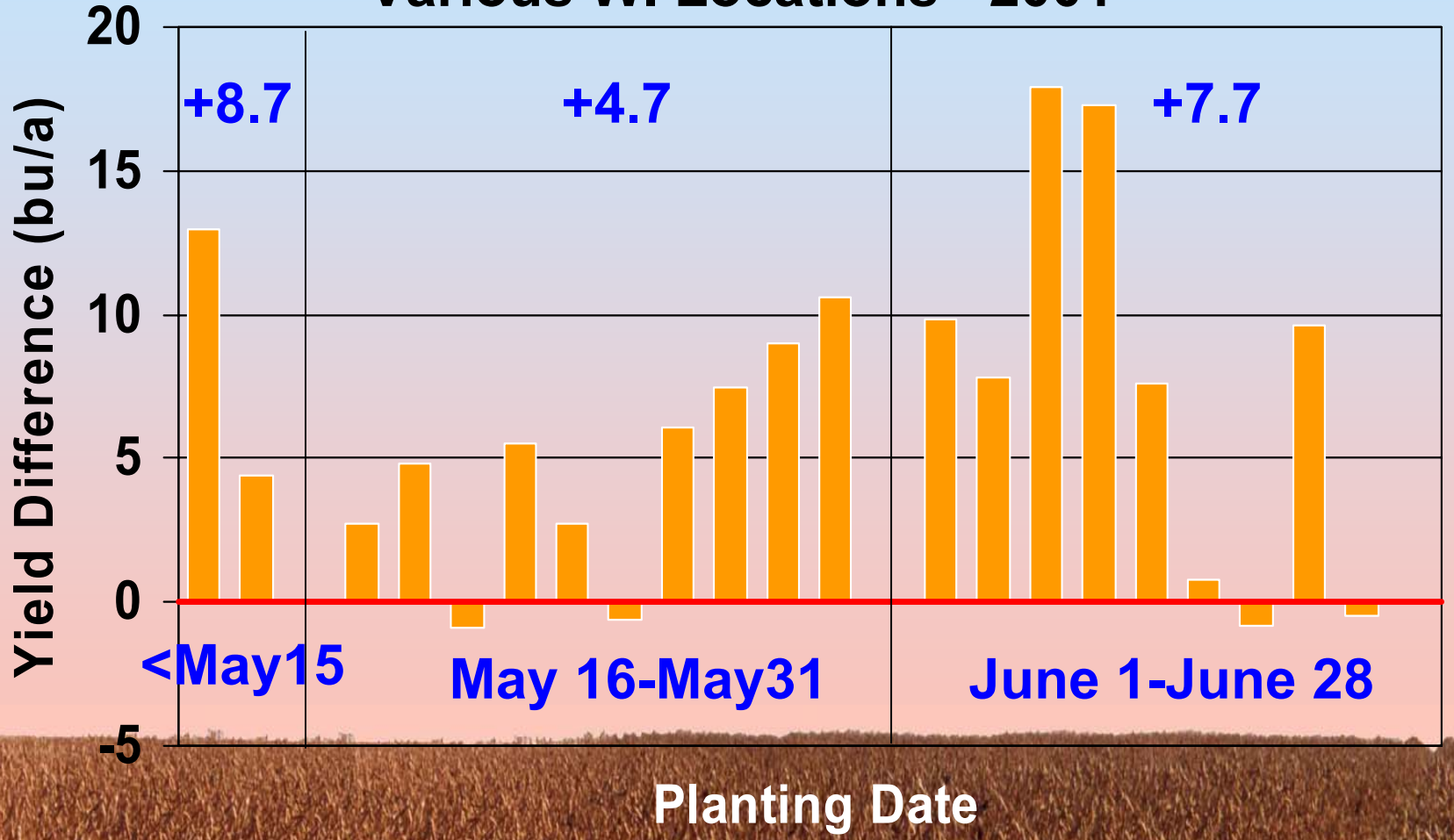
Soybean Aphid On-Farm Observations

Planting Date Variations

Various WI Locations - 2001



2001-Wedberg, Jensen UW Dept. of Entomology

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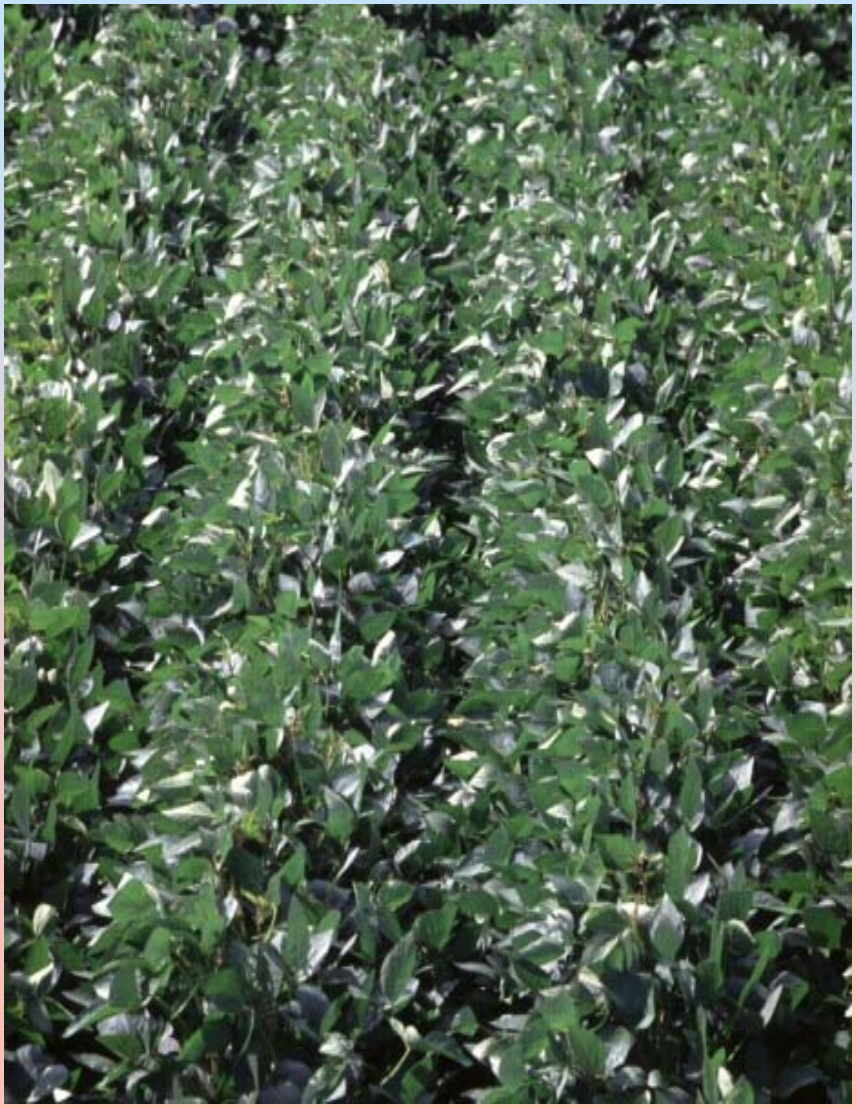
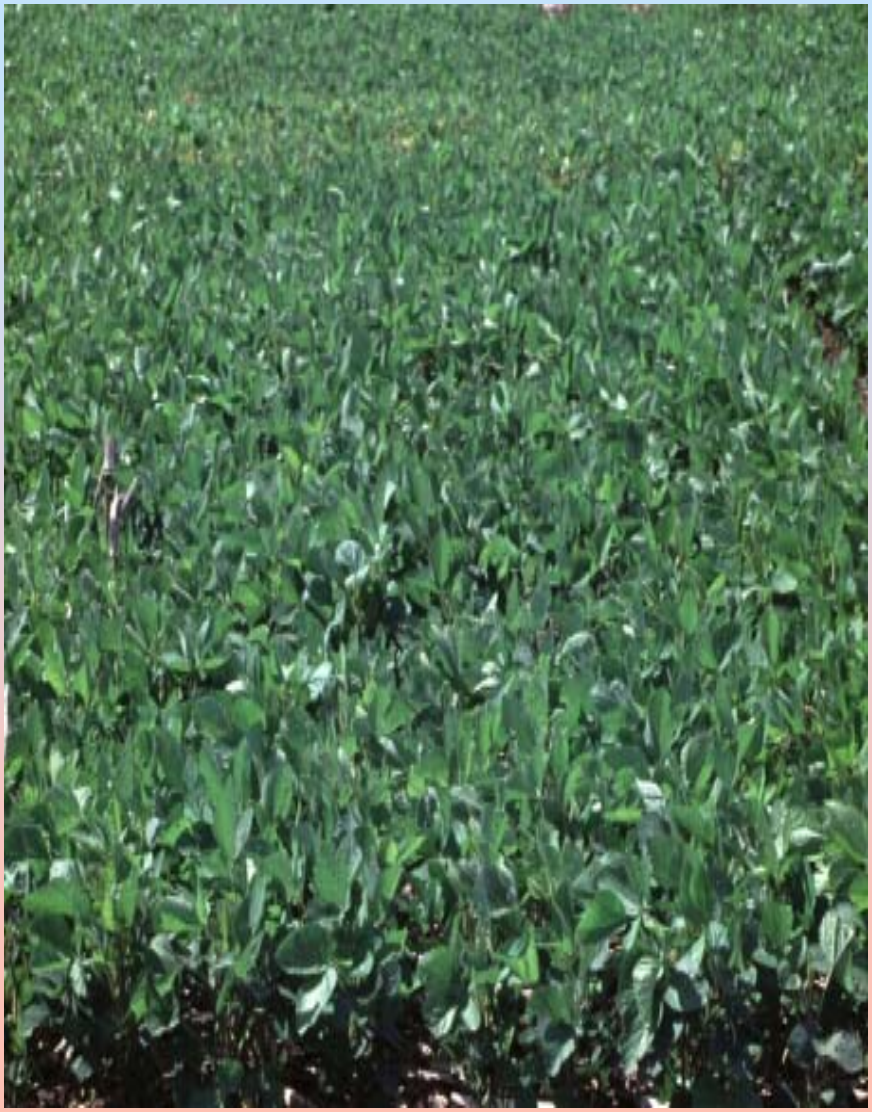
Which one does an aphid prefer?





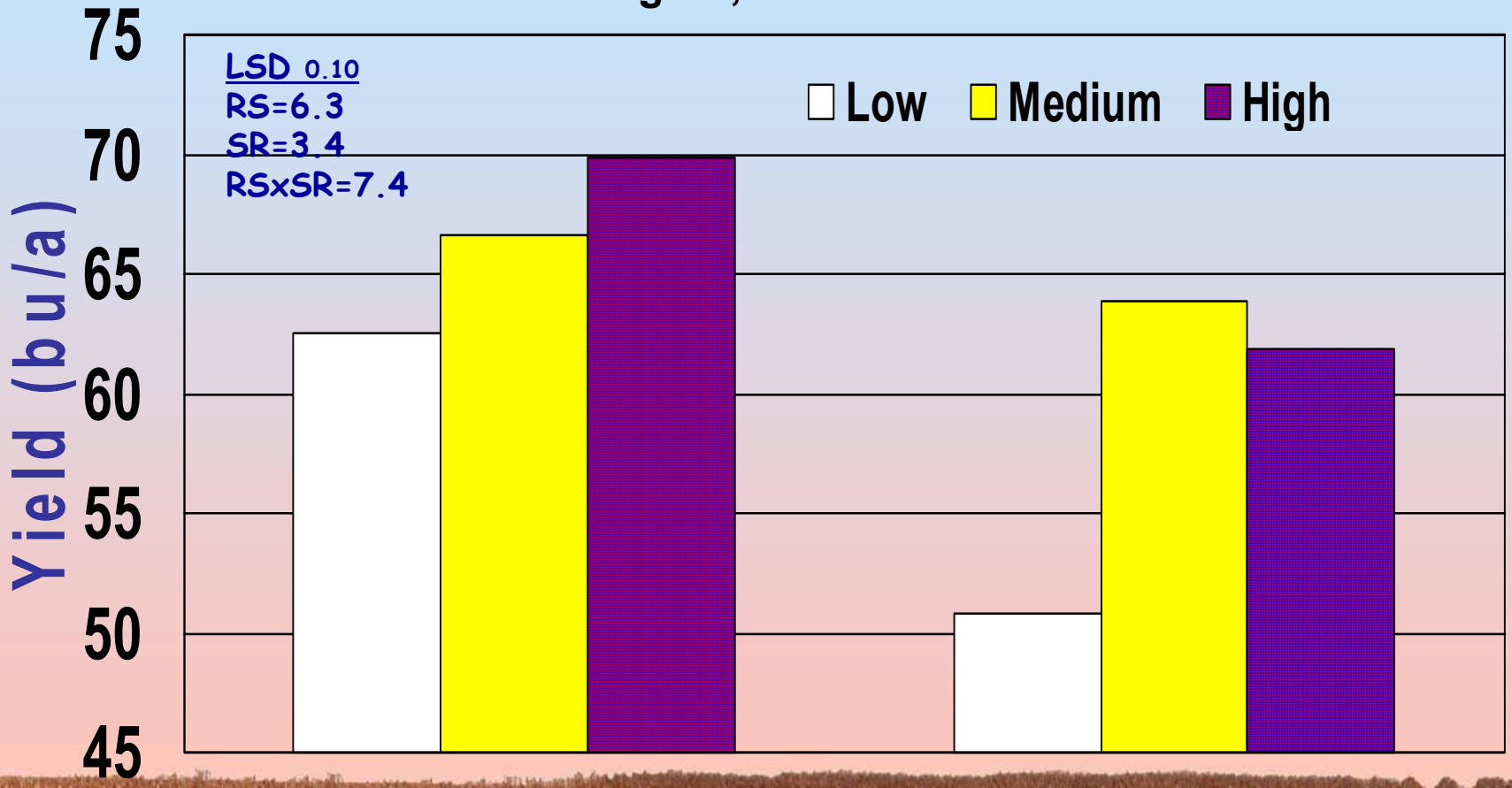
Materials and Methods

2001 Row Spacing x Seeding Rate Study

- Location: Arlington Ag Research Station
- Expt. Design: RCB-Split Plot
- Reps: 4
- Variety: DSR-215RR
- Row width: 7.5” and 30”
- Population: 7.5” 150K, 200K, and 250 K seeds/acre
  30” 75K, 125K and 175K seeds/acre
- Planting date: May 9
- No insecticides were used

Soybean grain yield at two row widths and three seeding rates.

Arlington, WI. 2001



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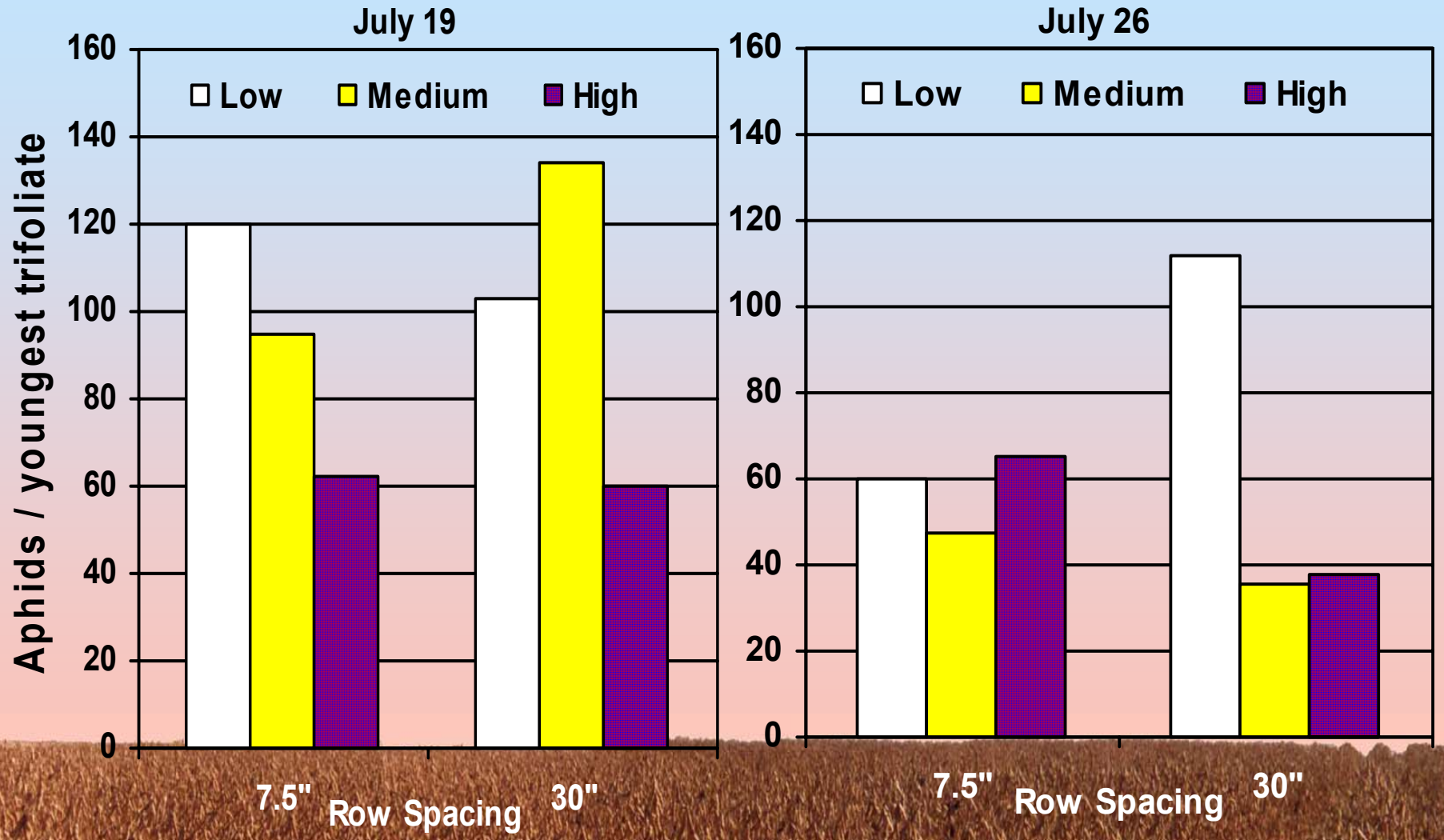
Soybean aphids at two row widths and three seeding rates on July 19 and July 26. Arlington, WI. 2001.



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Summary

- Planting date significantly affected aphid numbers
- No conclusions on viral activity due to planting date or plant density
- Insecticides may have to be used if aphid populations reach damaging levels
- Future research will build on aphid colonization numbers and correlate GDU's with aphid numbers

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Conclusions and Recommendations for Cultural Management of Soybean Insect-Virus Complex

Early Planting Date

- Advantage
  - Maintain dense canopy
  - High yield potential
  - Lower aphid density
  - Lower virus incidence
- Disadvantage
  - Bean leaf beetle
  - BPMV

Late Planting Date

- Use higher seeding rate for denser canopy
- May require an insecticide application
- Very late plantings may be able to mix herbicide and insecticide

Use of virus free seed

Thank You!

- Questions?
- Comments?

The Soybean Virus-Insect Team

- **Entomology**
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  - Dave Hogg
  - Tom German
  - Tom Klubertanz
  - Robb Alleman
  - Bob Ellingson
  - Scott Myers
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  - Lee Nolden
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  - Palle Pederson

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