

Impact of Row Spacing, Seeding Rate and Seeding Date on Soybean

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Soybean Agronomy 2014-16

As with any crop, successful soybean production requires accurate agronomic practices throughout the growing season, of these appropriate crop establishment is of paramount importance.

Therefore trails were initiated in 2014 to evaluate the following;

1. Inoculation
2. Plant Population & Row Spacing
3. Seeding Date

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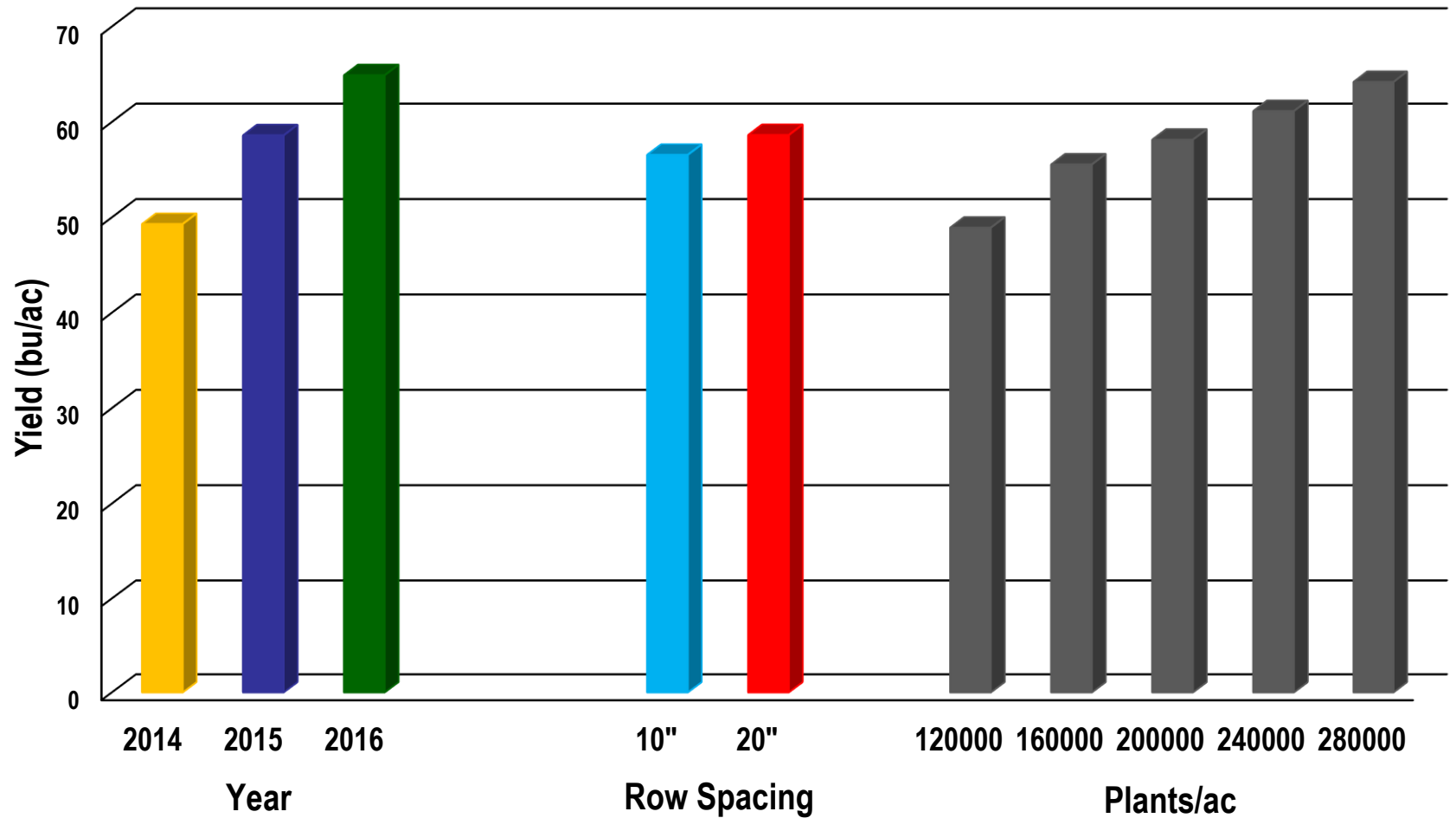
Plant Population & Row Spacing

- Two row spacing's – 10 & 20”
- Five target plant populations
 - 120,000 plants/acre
 - 160,000 plants/acre
 - 200,000 plants/acre
 - 240,000 plants/acre
 - 280,000 plants/acre

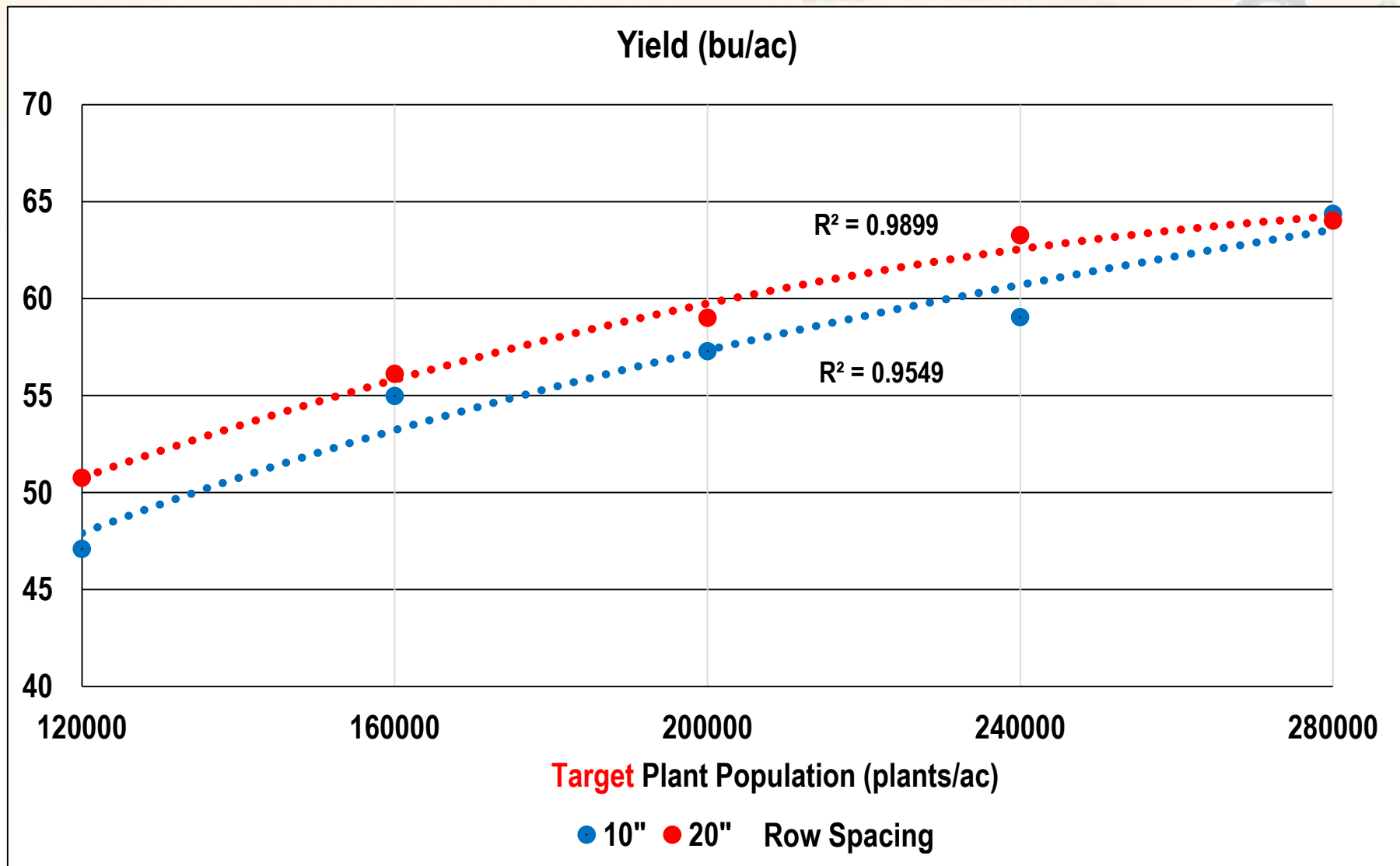
Soybean Plant Population Study 2014-16



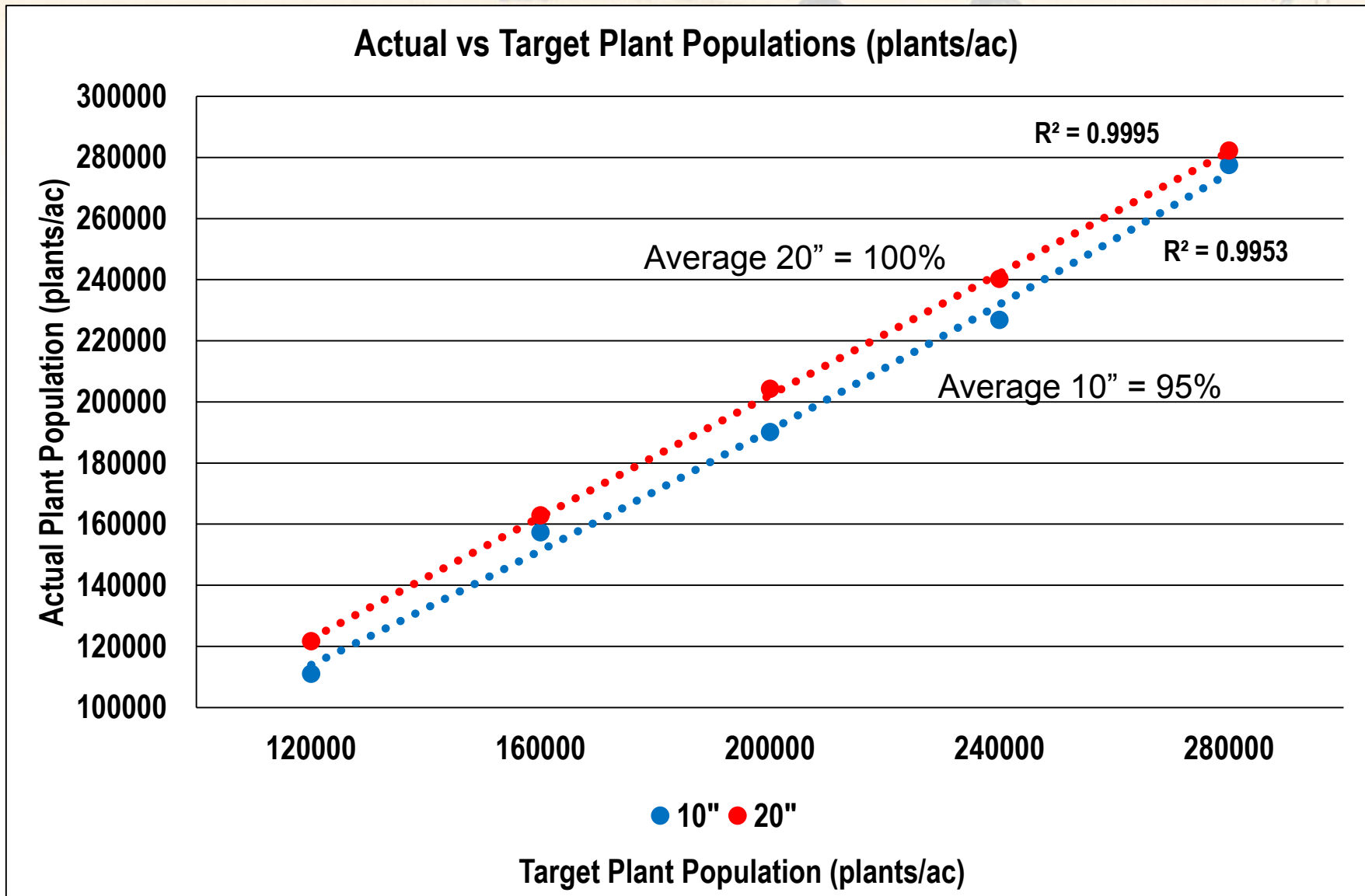
Yield vs Year, Spacing's & Plant Population



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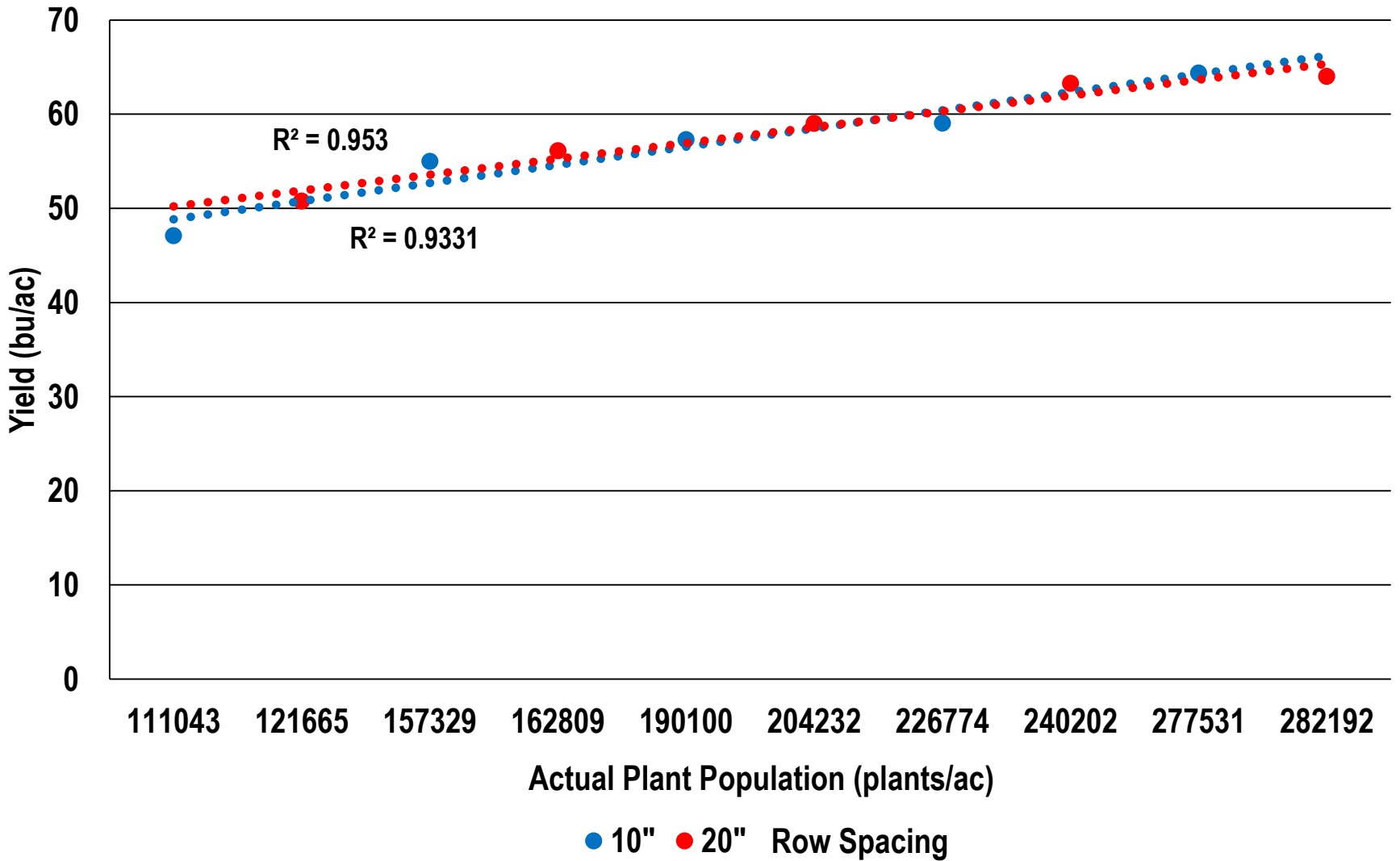
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Yield vs Achieved Plant Populations



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- Effects of Row Spacing

- As row spacing increased % oil was unaffected
- As row spacing increased % protein **↑**
- As row spacing increased test weight **↓**
- As row spacing increased seed weight (TKW) was unaffected
- As row spacing increased plant height was unaffected

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- Effects of Plant Population

- As plant population increased % oil was unaffected
- As plant population increased % protein was unaffected
- As plant population increased test weight was unaffected
- As plant population increased seed weight (TKW) was unaffected
- As plant population increased plant height was **↑**

Soybean Seeding Date Study 2014-16



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Seeding Date

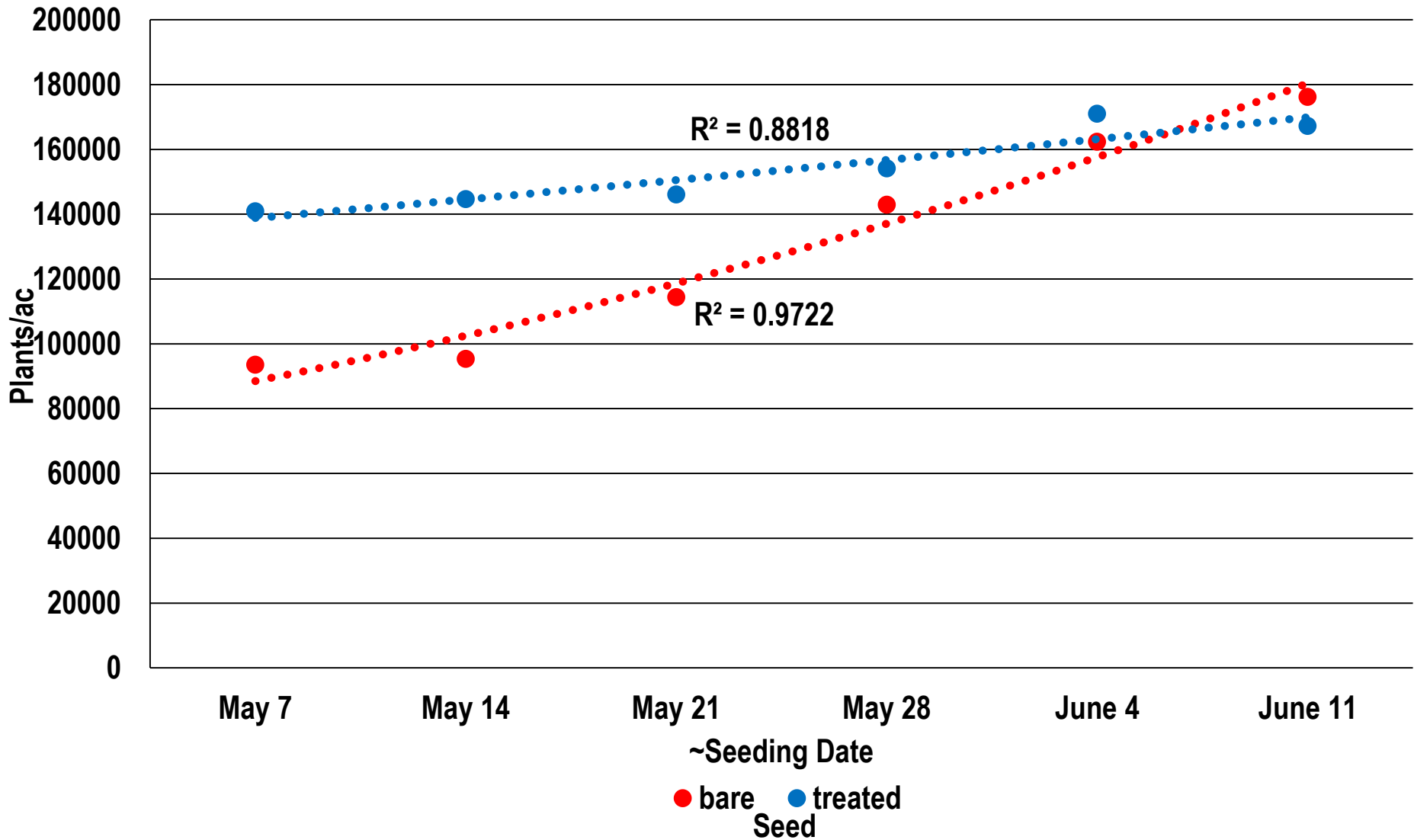
- 6 Dates
 - May 7
 - May 14
 - May 21
 - May 28
 - June 4
 - June 11

With & without seed treatment

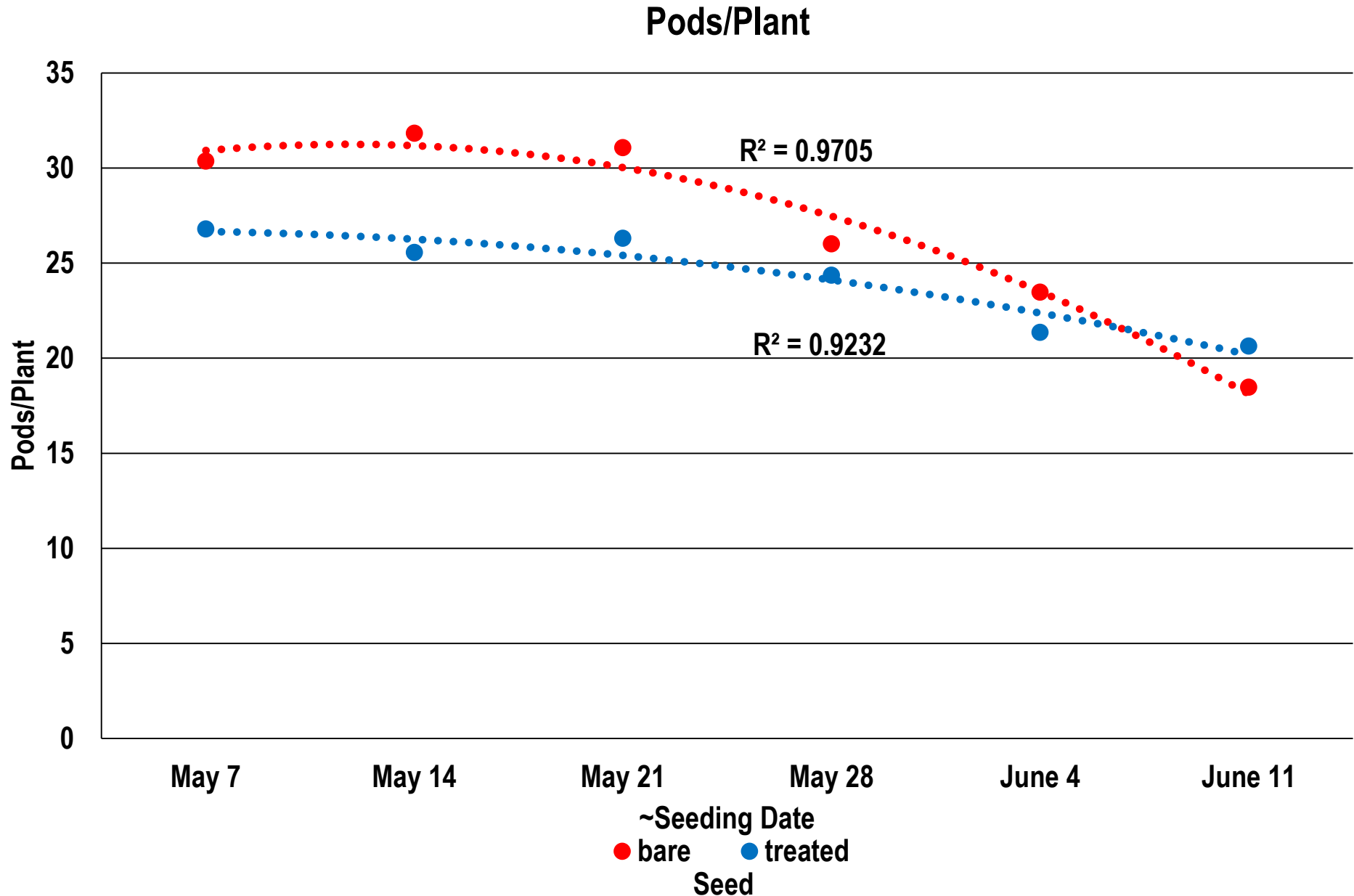
Soybean Seeding Date Study 2014-16



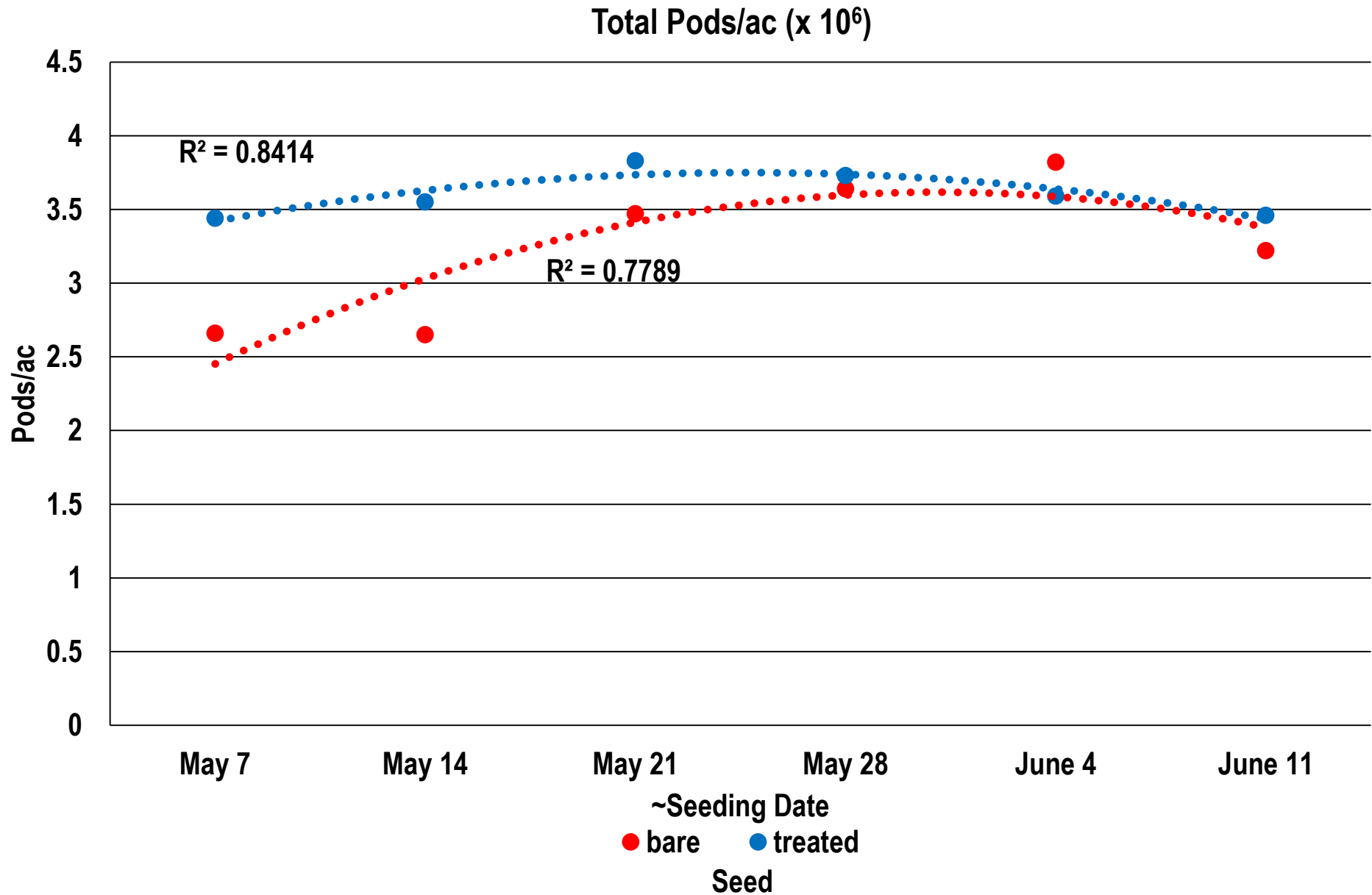
Plant Population



Soybean Seeding Date Study 2014-16



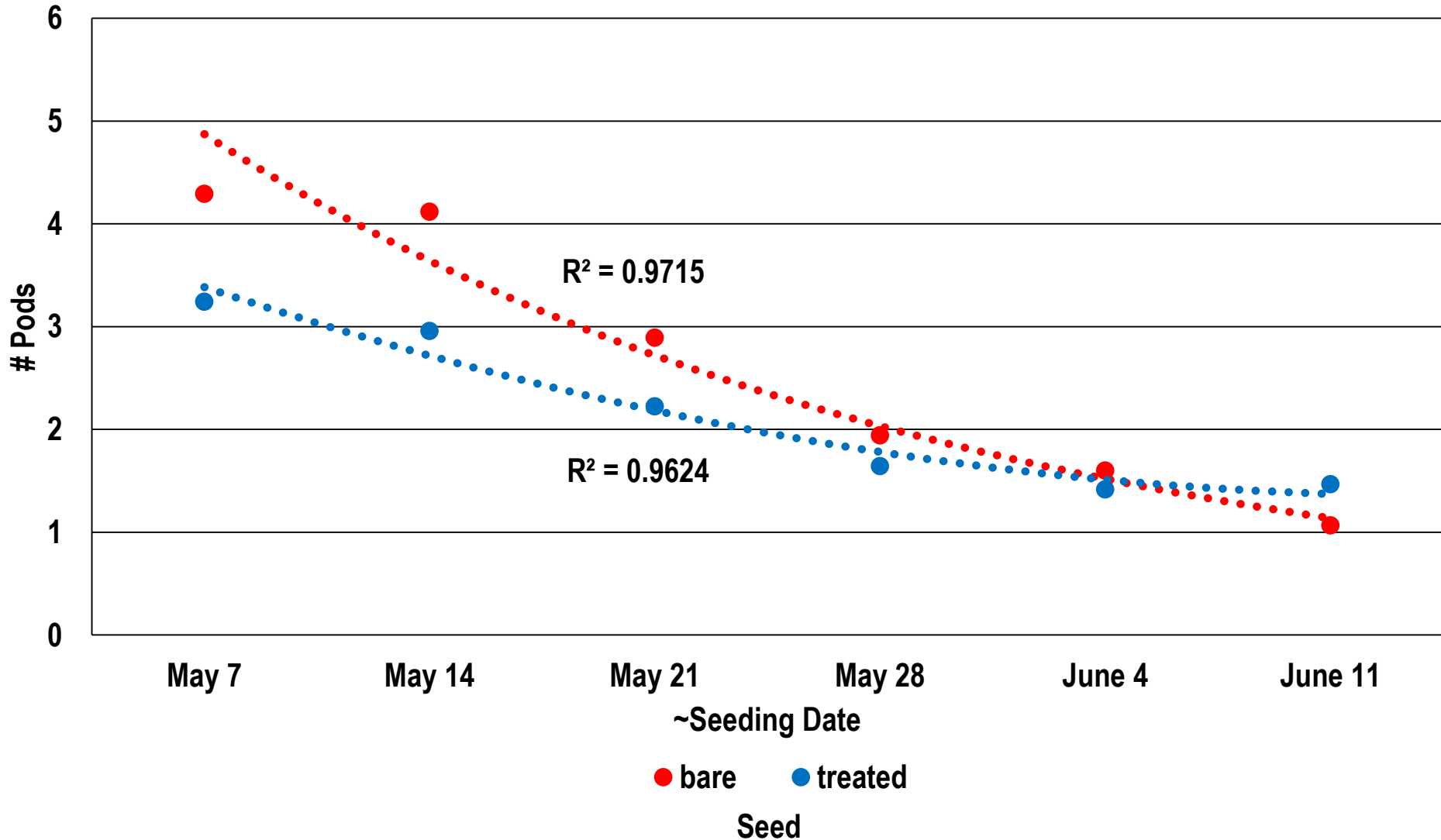
Soybean Seeding Date Study 2014-16



Soybean Seeding Date Study 2014-16



Pod Clearance
(# pods < 1.25" to soil surface)

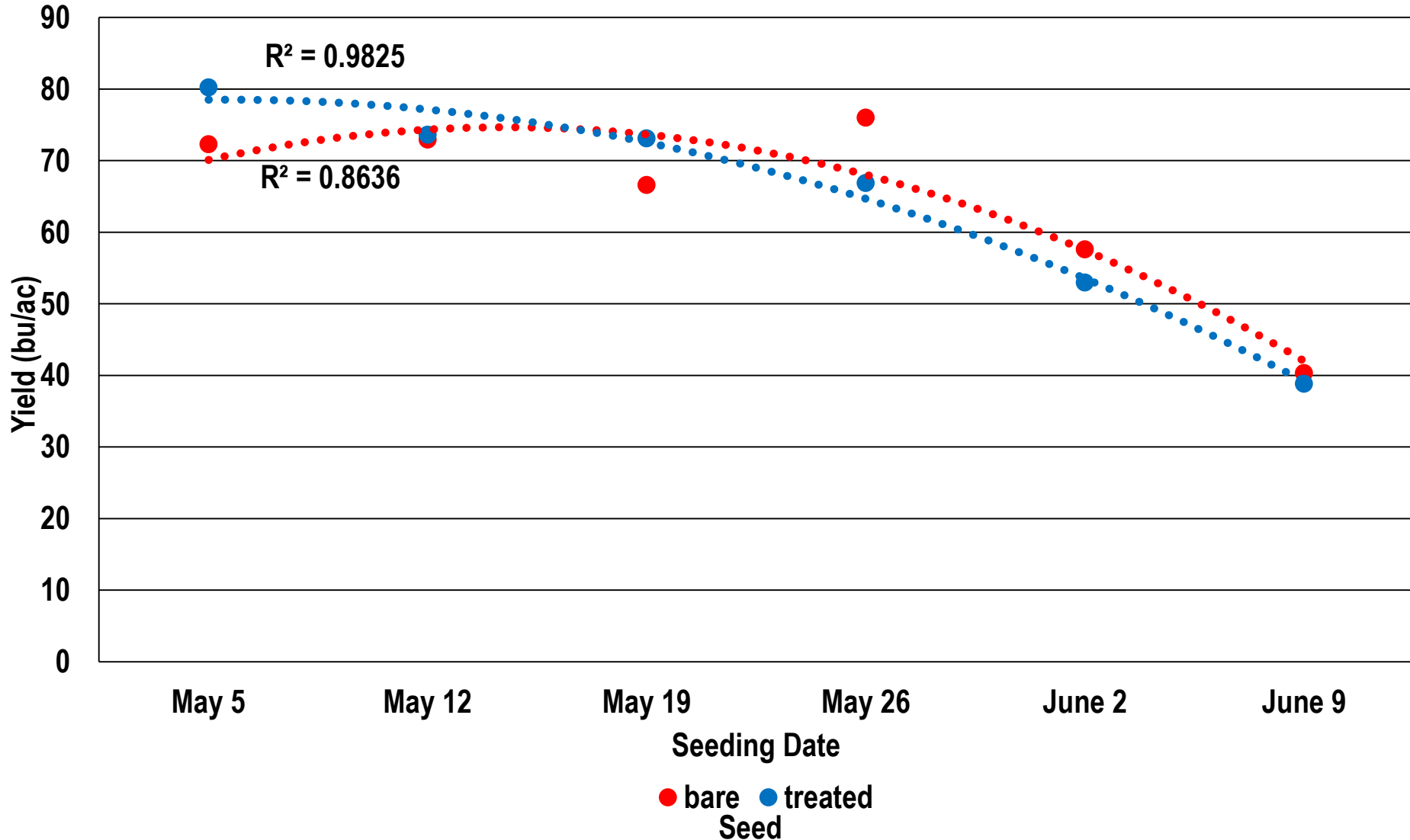


Soybean Seeding Date Study 2016



2016

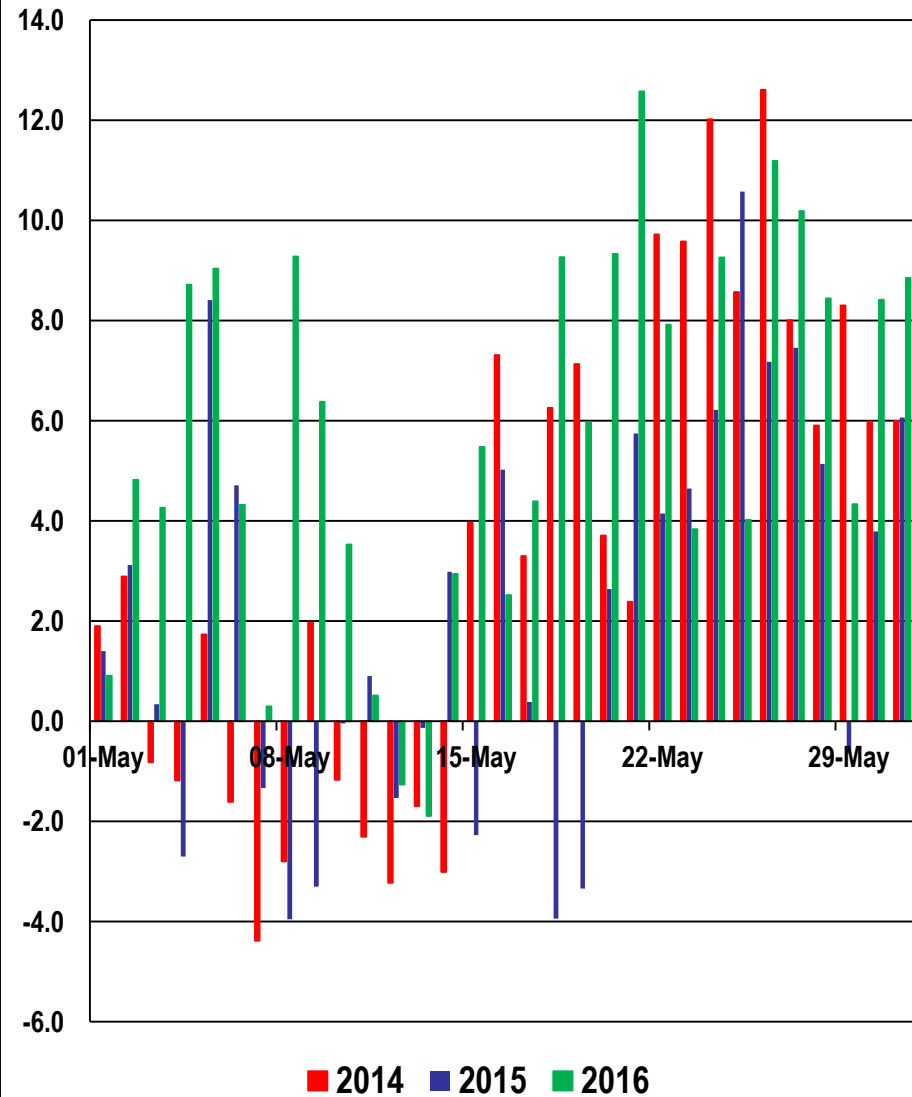
Yield vs Seeding Date & Seed Treatment



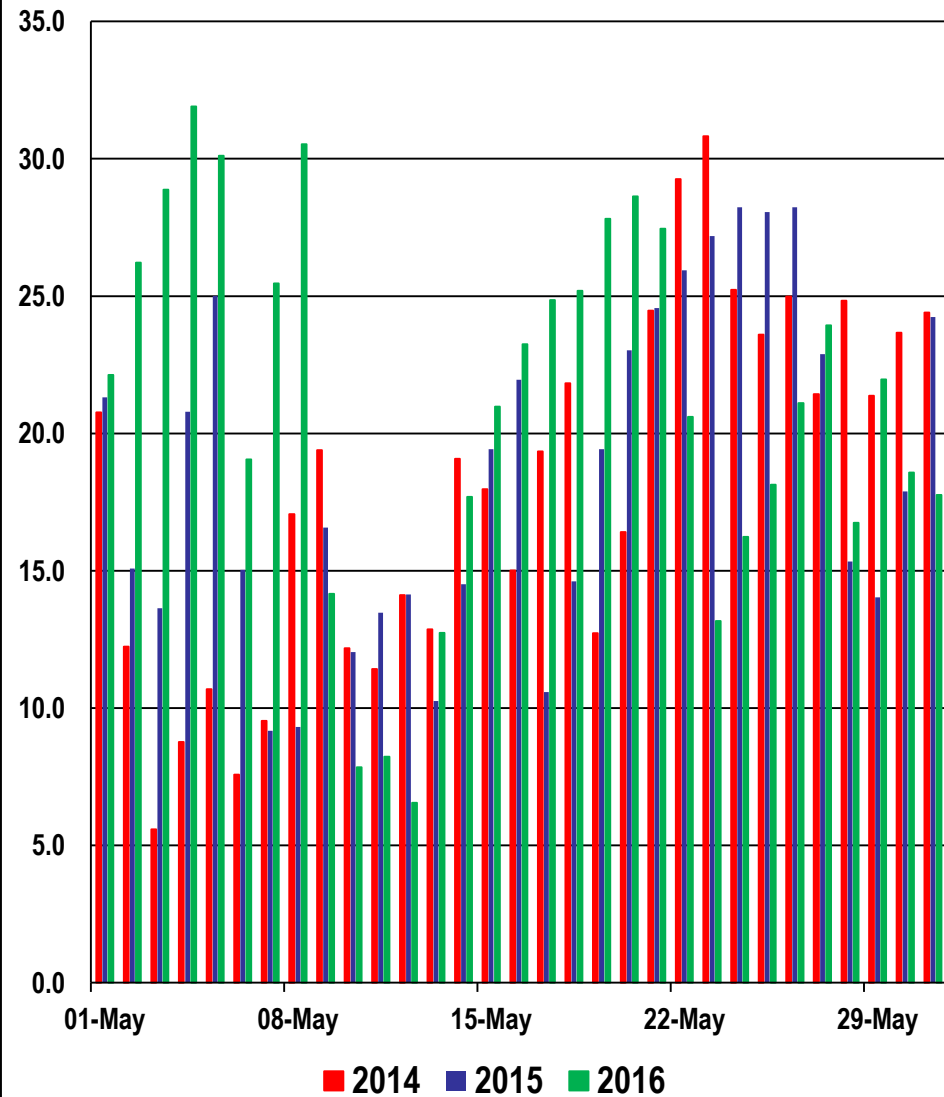
Soybean Seeding Date Study 2016



Daily Minimum Temperature ($^{\circ}$ C) for May 2014-16



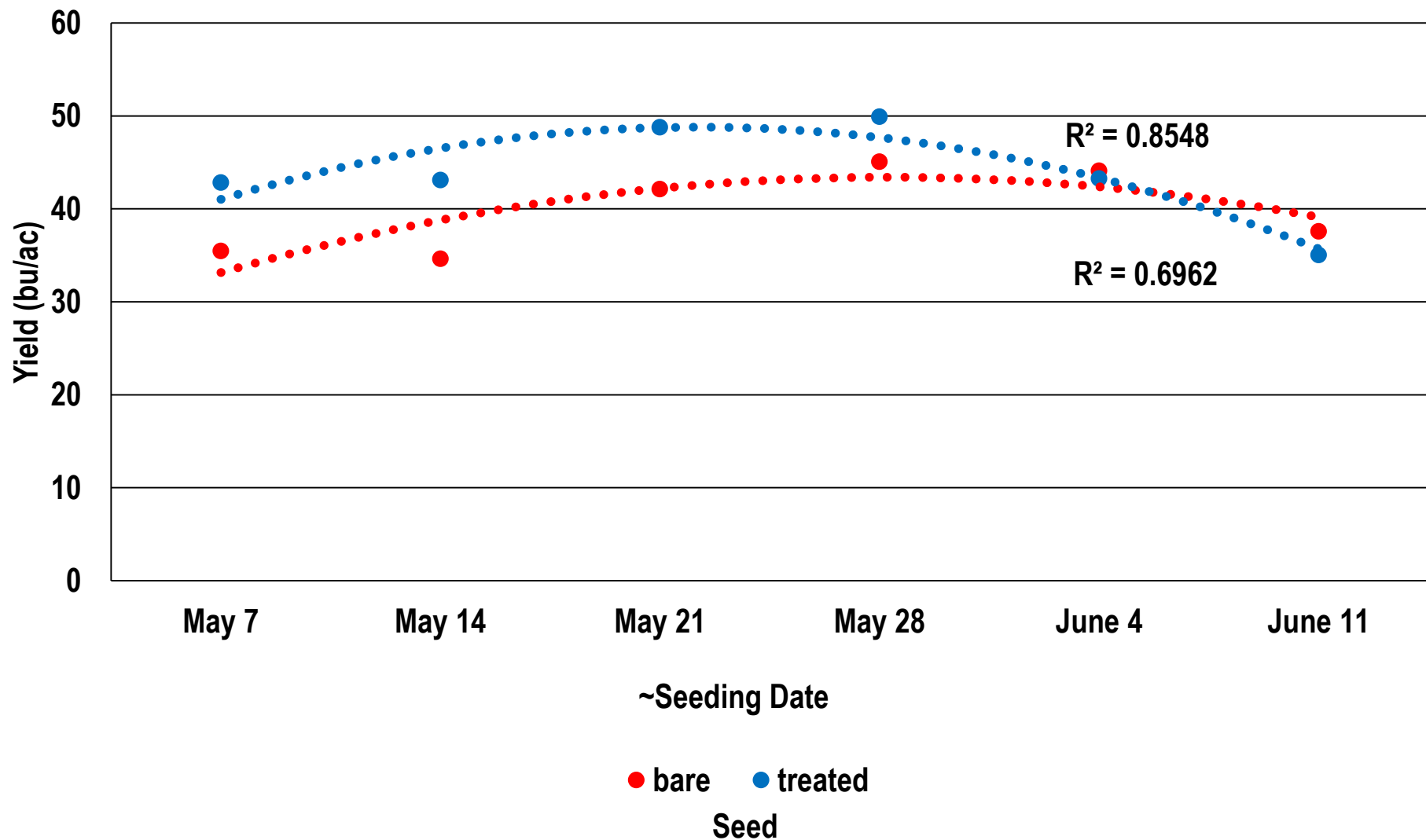
Daily Maximum Temperatures ($^{\circ}$ C) for May 2014-16



Soybean Seeding Date Study 2014-16



Yield vs Seeding Date & Seed Treatment, 2014-16



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- **Conclusions**
- Dual inoculation of a seed applied inoculant in conjunction with recommended rate, or slightly higher, of granular inoculant beneficial on virgin soybean ground.
- Appears that after two rotations of soybean a single inoculation rate may suffice.
- Solid seeded (10") soybean as high yielding as wide row (20") production.

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- **Conclusions**
- Strive for an established plant population of 200,000 plants/ac. Determine seeding rate by adjusting for variety seed size, % germination and assume 90% seed emergence and seedling survival.
- Plan seeding towards the beginning of the 3rd week in May.
- Planting prior to the 3rd week in May reduces pod numbers and increases the number of pods developing close to the ground surface.
- Earlier planting requires a seed treatment, planting beyond the 26-28th of May a seed treatment may have limited value.

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Agriculture Development Fund



Thank You