

Evaluation of Novaluron Phytotoxicity across Dark Tobacco Varieties



2009 Data Summary

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Novaluron Phytotoxicity across Dark Varieties

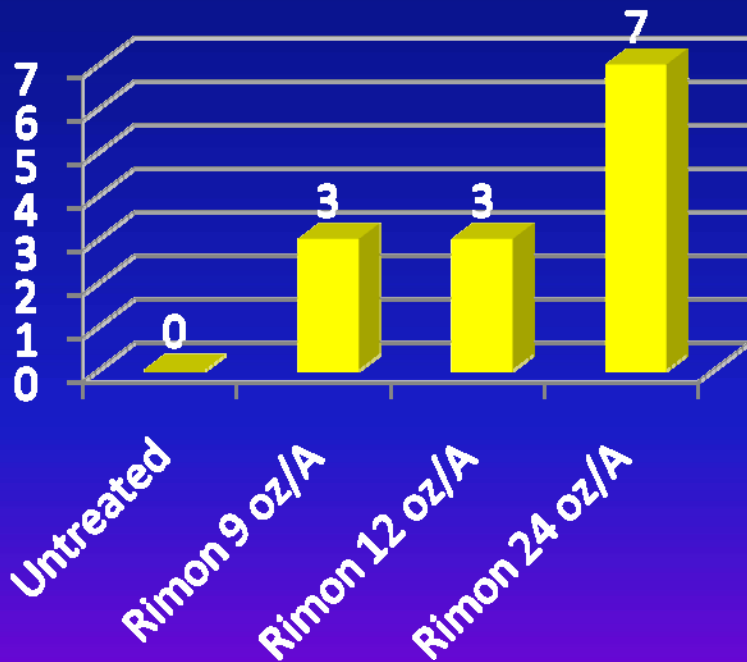
2009 – MSU West Farm, Murray, KY

- Objective: evaluate dark variety tolerance to novaluron insecticide
- 3 dark varieties:
 - PD 7318LC
 - Narrowleaf Madole
 - KY 171
- Split block variety, RCBD treatment design
- 4 replications
- 3-row plots, 40 ft. long
 - 2 of 3 rows sprayed, 1-row border
- 5 applications of Rimon:
 - Untreated
 - 9 oz/A
 - 12 oz/A
 - 24 oz/A
- Tobacco set June 9-10
- Applications made July 1, July 24, August 4, August 12, August 25
- First 2 applications made at 15 gal/A, applications 3, 4 ,and 5 made at 30 gal/A.
- Phytotoxicity rating taken within 10 days of each application
- Fire-cured yield and quality data also being collected

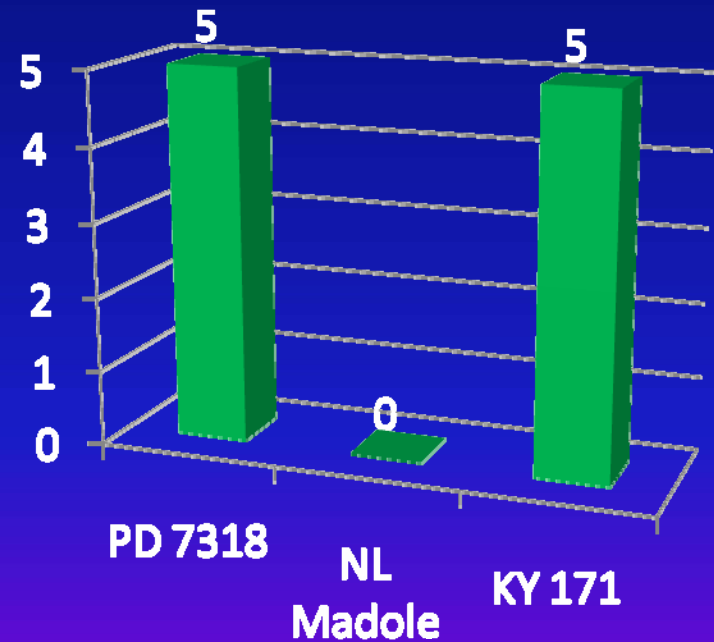
Rating 1: July 3 (2 days after 1st application)

Main Effect of Treatment and Variety

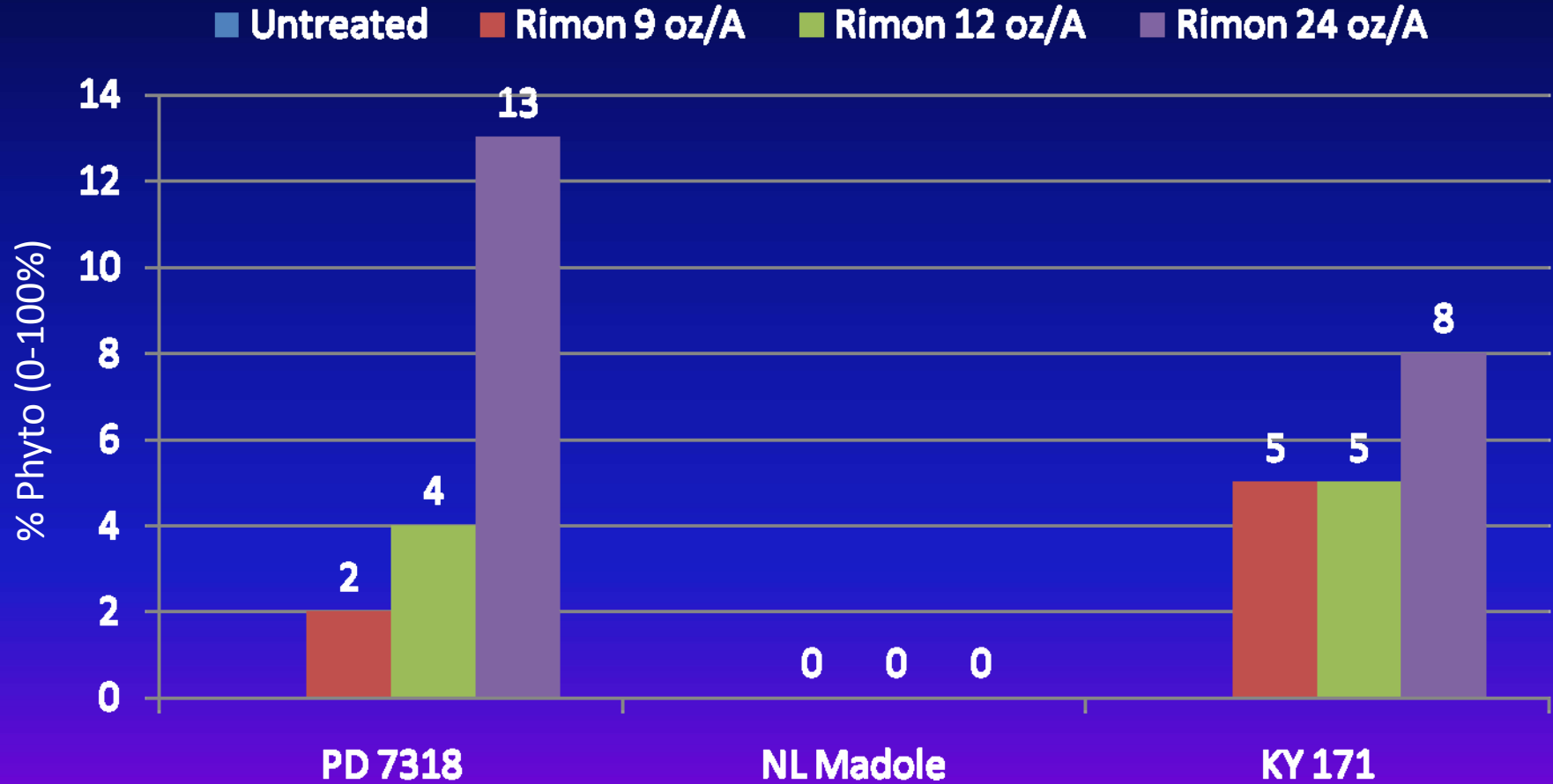
Effect of Treatment averaged over Variety
LSD(.05)=3



Effect of Variety averaged over Treatment
LSD(.05)=2



Rating 1: July 3 (2 days after 1st application) Interaction of Variety and Treatment



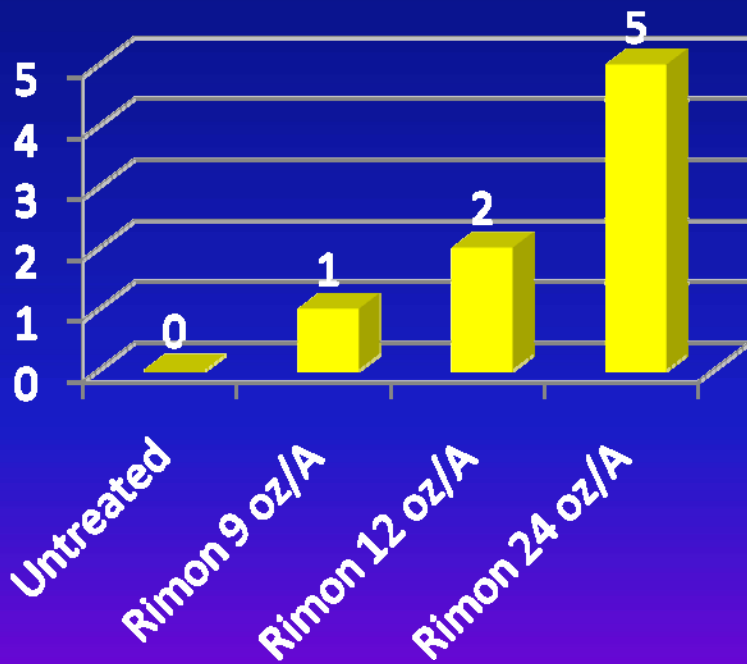
LSD(0.05) =

6

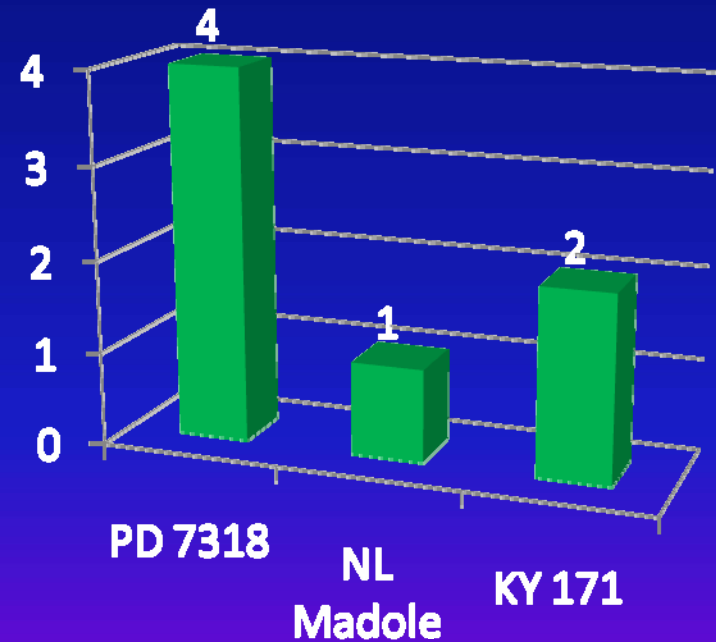
5

Rating 2: August 4 (10 days after 2nd application) Main Effect of Treatment and Variety

**Effect of Treatment
averaged over Variety
LSD(.05)=1**

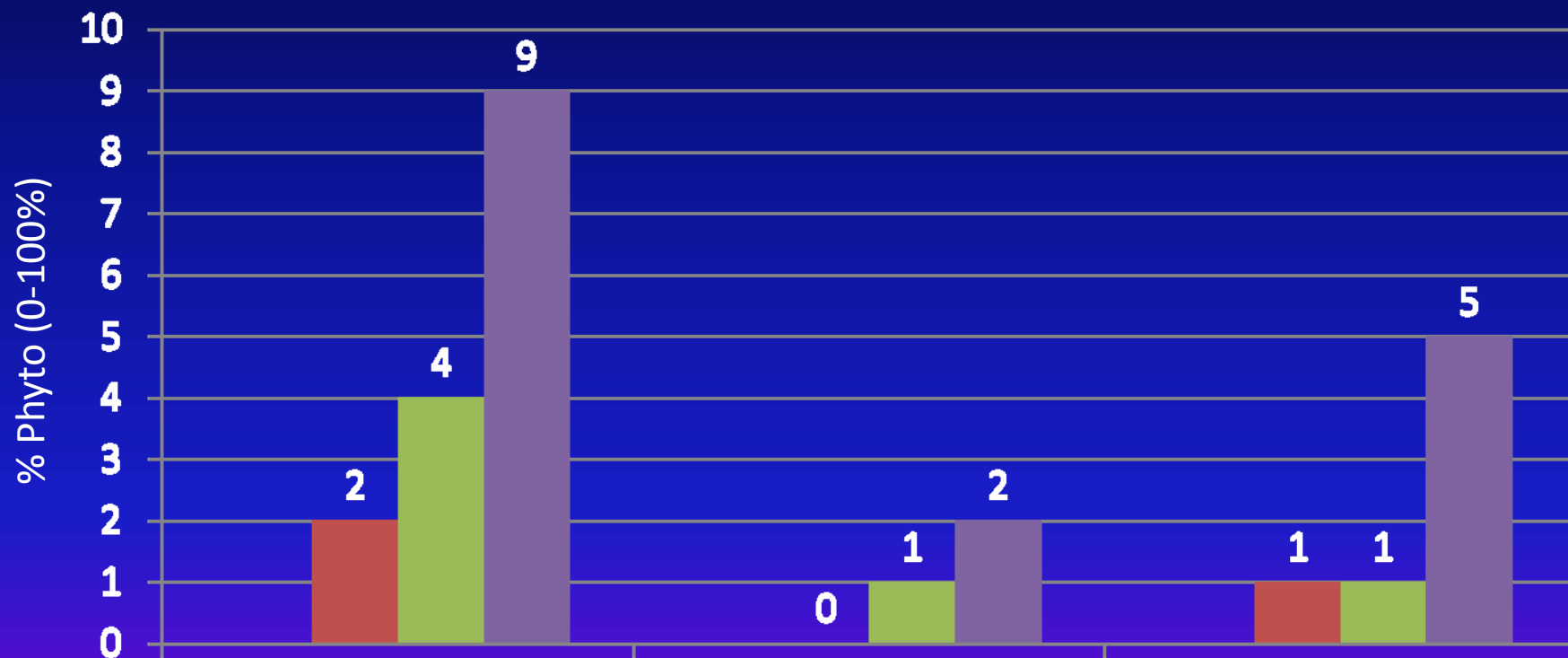


**Effect of Variety averaged
over Treatment
LSD(.05)=1**



Rating 2: August 4 (10 days after 2nd application) Interaction of Variety and Treatment

■ Untreated ■ Rimon 9 oz/A ■ Rimon 12 oz/A ■ Rimon 24 oz/A



PD 7318

NL Madole

KY 171

LSD(0.05) =

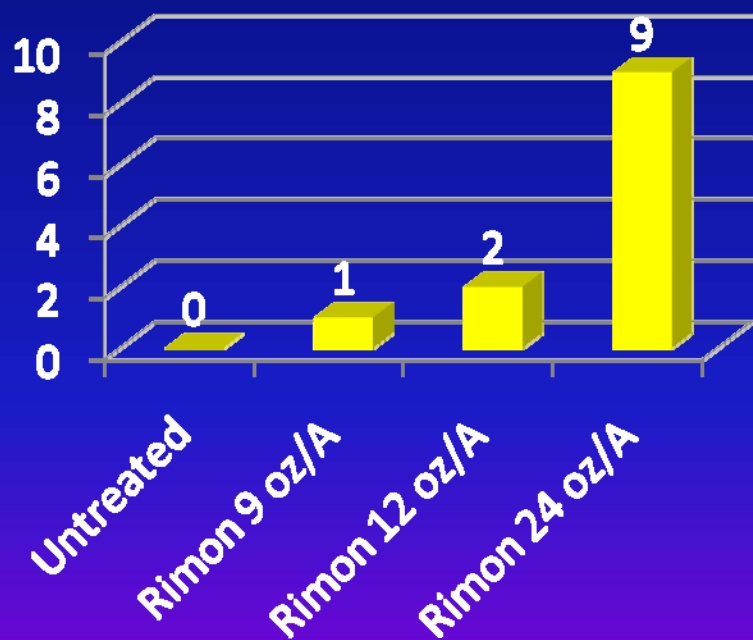
2

1

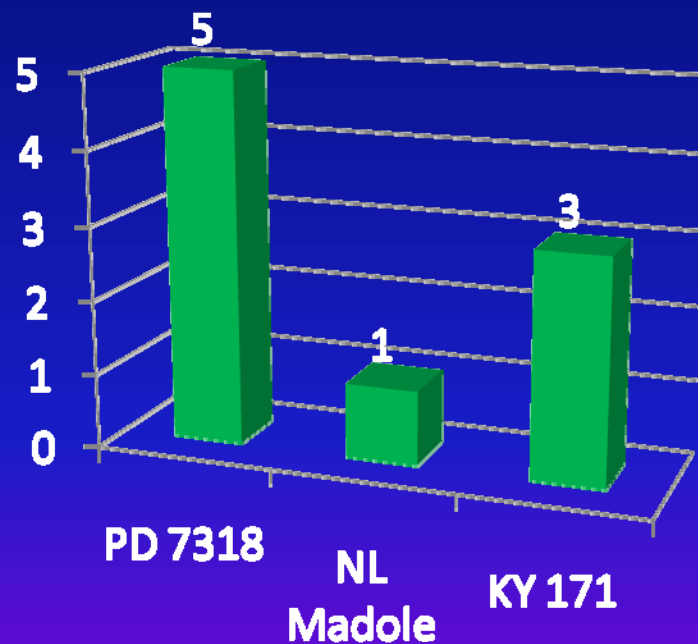
2

Rating 3: August 12 (8 days after 3rd application) Main Effect of Treatment and Variety

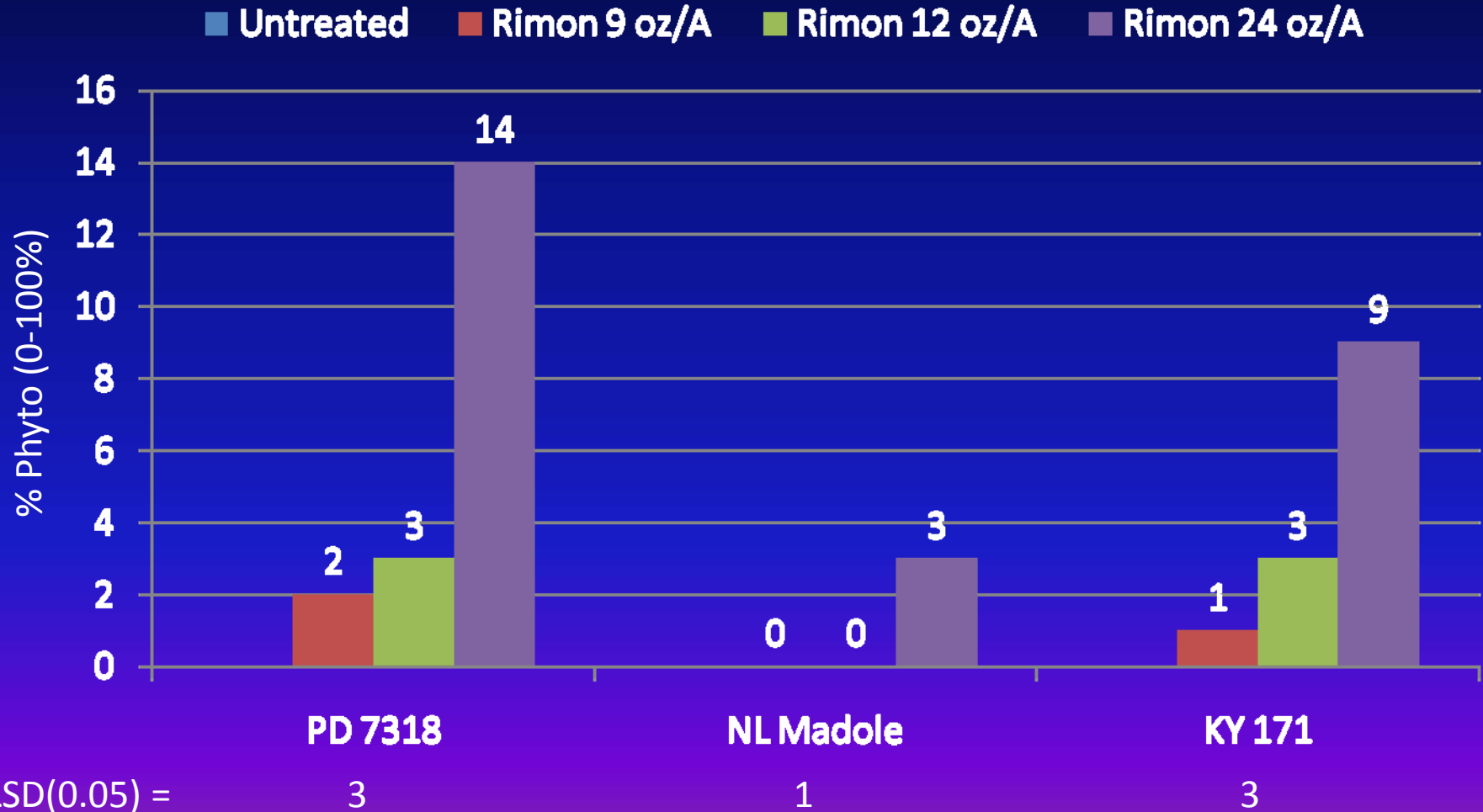
**Effect of Treatment
averaged over Variety
LSD(.05)=1**



**Effect of Variety averaged
over Treatment
LSD(.05)=1**



Rating 3: August 12 (8 days after 3rd application) Interaction of Variety and Treatment

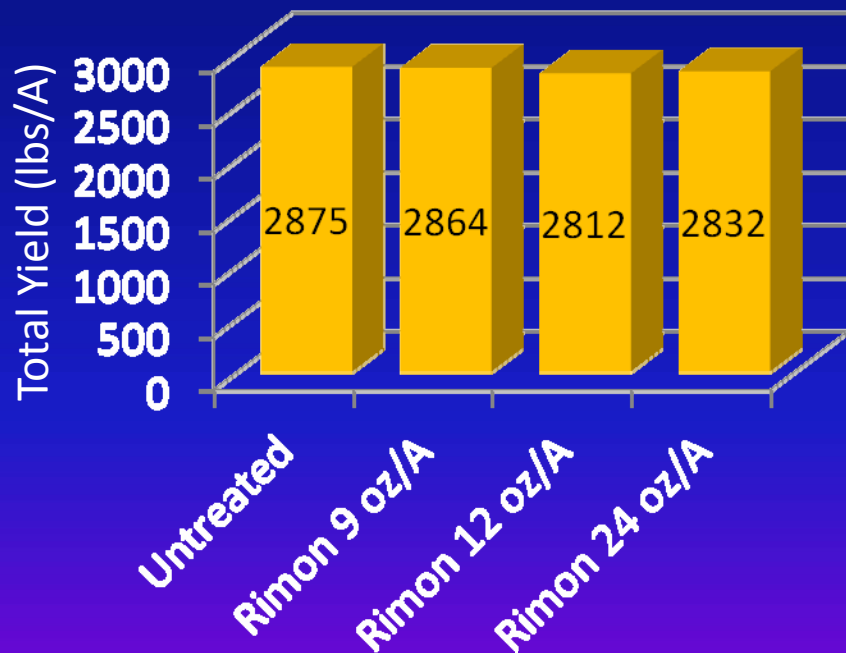


Dark-Fired Yield Response to Novaluron

Main Effects of Treatment and Variety

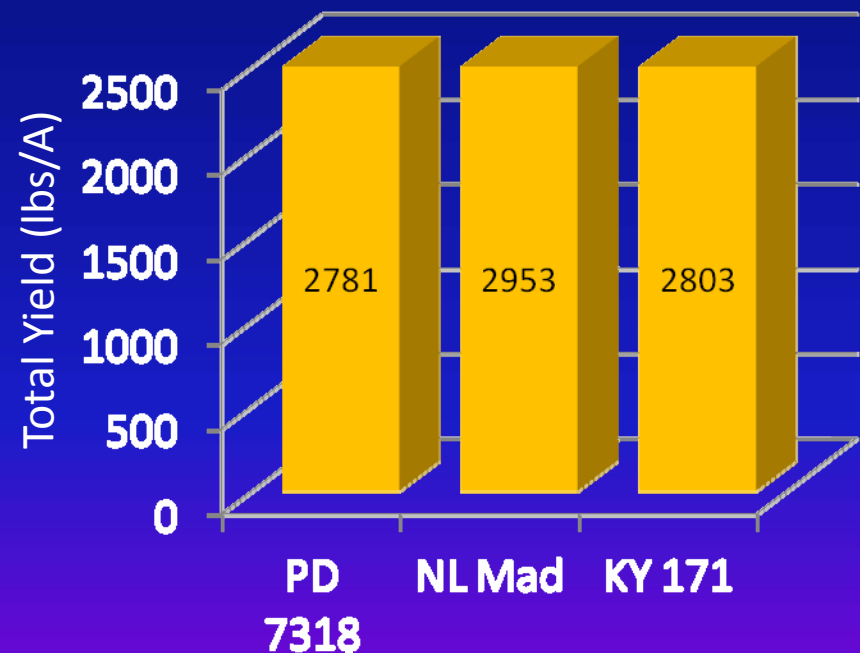
Main Effect of Treatment Averaged over Variety

LSD_{0.05} = 186



Main Effect of Variety Averaged over Treatment

LSD_{0.05} = 161

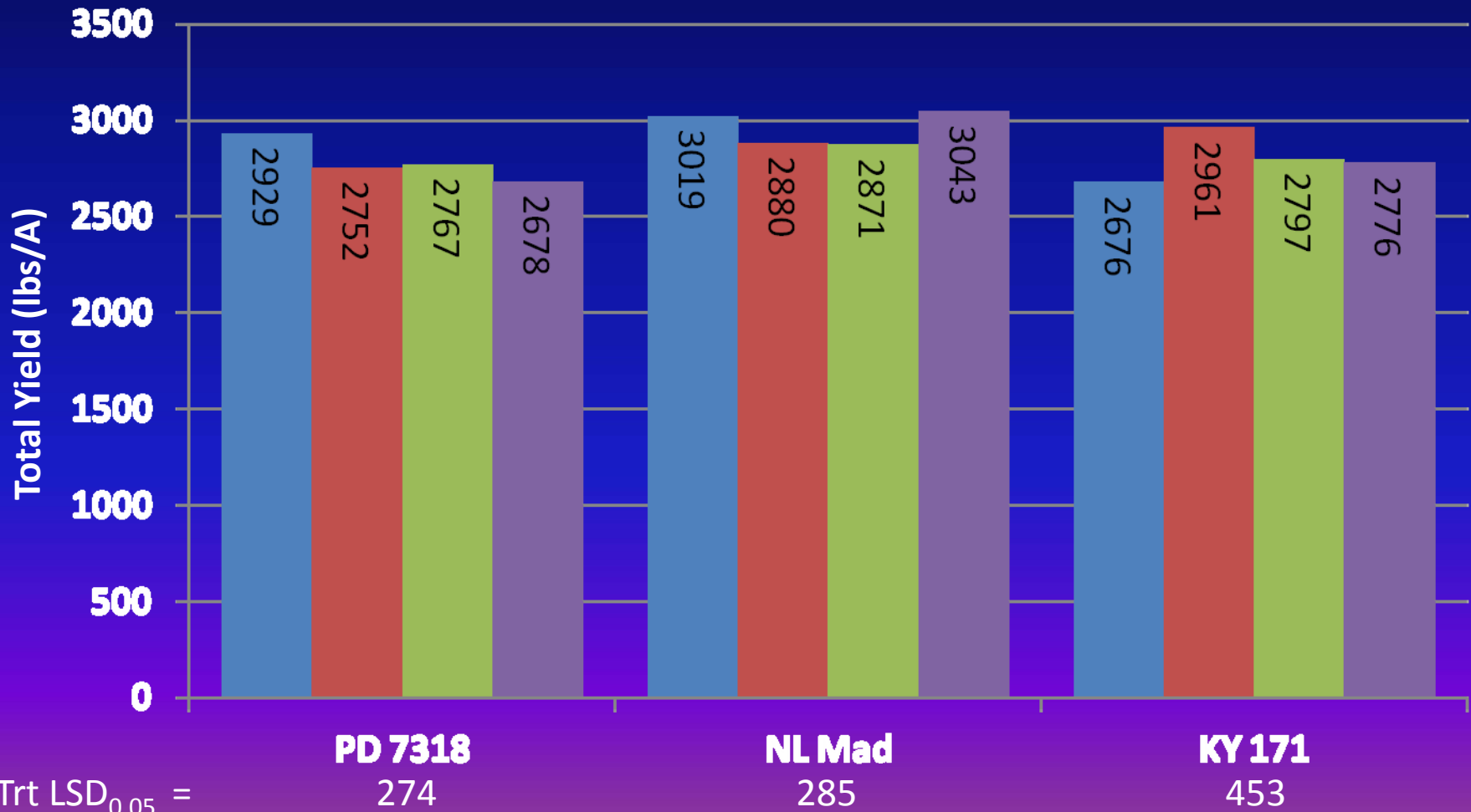


* Total Yield is sum of trash, lugs, seconds, and leaf

Dark-Fired Yield Response to Novaluron

Total Yield by Variety and Treatment

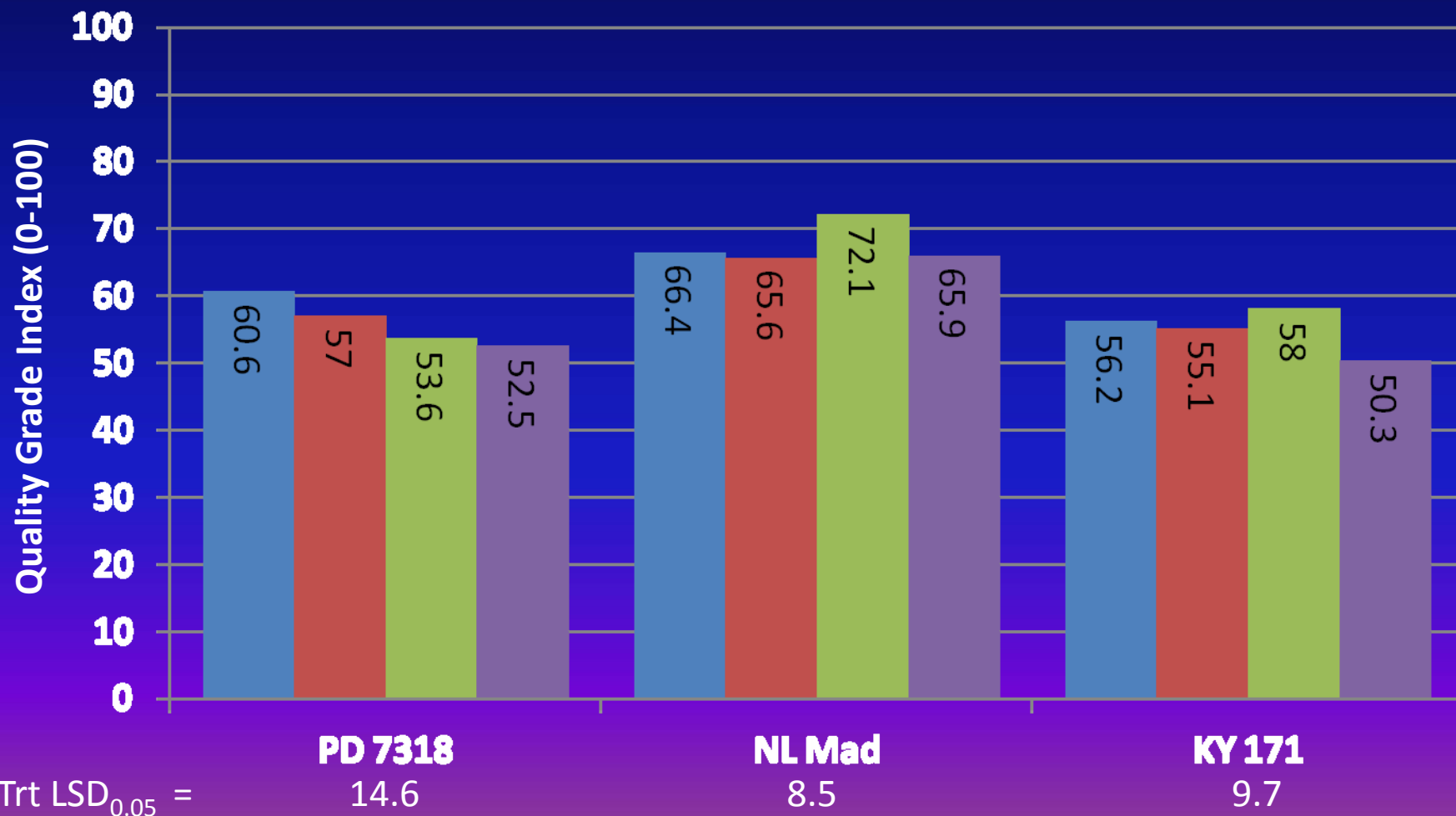
■ **Untreated** ■ **Rimon 9 oz/A** ■ **Rimon 12 oz/A** ■ **Rimon 24 oz/A**



Dark-Fired Quality Response to Novaluron

Quality Grade Index by Variety and Treatment

■ Untreated ■ Rimon 9 oz/A ■ Rimon 12 oz/A ■ Rimon 24 oz/A



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Summary

- No new injury seen on any dark variety following 4th and 5th applications (4th and 5th ratings).
- Narrowleaf Madole was clearly much more tolerant to novaluron than PD7318 and KY 171
- PD 7318 and KY 171 responded similarly to novaluron.
 - PD 7318 may be the most sensitive to novaluron.
- Novaluron did not significantly impact total yield or quality grade index of any dark tobacco variety.