FUNGICIDE TIMINGS AND COMBINATION TO CONTROL PEANUT POD ROT

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BACKGROUND INFORMATION

Objective? – Evaluate different fungicide spray timings to determine timing and fungicide rotations that are most effective to manage peanut pod rot in the field while also reducing the development of fungicide resistance.

When? – 2021

Where? – Brownfield, TX

Target disease? – *Pythium* and *Rhizoctonia* Pod rot

Variety? – Virginia market type ACI351

Planting date? – May 8, 2021

Harvest date? – Dug on October 11 and threshed on October 15

Treatment? – 12 spray combinations, listed in Table 1

RESULTS AND DISCUSSION

- No significant differences were observed in all treatments in the number of total plants and infected plants.
- Disease incidence and severity were assessed at the time of digging. Disease incidence refers to how many plants showed infection per plot. Disease severity refers to of those plant what degree of infection the plants showed.
- Incidence percent resulted in slight differences only between highest incidence, treatment 12 (disease-based sprays) and lowest incidence, treatment 4 (*Ab 60//90 + Pr 75*); all other treatments did not show significant differences with treatments 12 and 4 (Figure 1).

Table 1. Fungicides, treatment code, and timing of application (DAP = Days After Planting)

Treatment	Chemical	Code	45 DAP	60 DAP	75 DAP	90 DAP
1	Ridomil	Rd45 +	X			
	Lucento	Lu60		X		
2	Ridomil	Rd45	X			
3	Abound	Ab60/90 +		X		X
	Lucento	Lu75			X	
4	Abound	Ab60/90 +		X		X
	Propulse	Pr75			X	
5	Ridomil	Rd45 +	X			
	Abound	Ab60/90		X		X
6	Abound	Ab60/90		X		X
7	Lucento	Lu60		X		
8	Propulse	Pr60/90		X		X
9	Abound	Ab75			X	
10	Propulse	Pr75			X	
11	Untreated check	U	-	-	-	-
12	Disease-based spray*	Dbs	-	-	-	-

*Application was made when the symptoms were observed.

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RESULTS AND DISCUSSION continued

- Severity percent resulted in significant differences. Treatment 8 (*Pr 60/90*) resulted in the highest severity level with 27.5%, while treatment 5 (*Rd45 + Ab60/90*) resulted in the lowest disease severity with 7.5%. Treatments 3, 5, and 7 were all significantly different from treatment 8. Untreated check reported a mean disease severity of 20.5%.

- Yield data resulted in significant differences only between highest yielding treatment 9 (*Ab75*) and treatments 2, 3, 11, 12 that resulted in yields in the lower spectrum. The lowest yielding treatment was treatment 3 (*Ab60/90 + Lu75*) with 3,454lbs/acre. All the other treatments (1, 4, 5, 6, 7, 8, 10), were not significantly different from the highest (trt 9) or lowest yielding treatments (trts 2, 3, 11, 12).

- Lastly, percent of control was calculated by comparing the obtained yield to the yield obtained from the untreated check. The highest yield % was for treatment 9 (*Ab75*) that yielded 22% more than the untreated check (represented has 122 in table 3). Statistically, treatment 2 (*Rd45*) and 3 (*Ab60/90 + Lu75*) resulted in yield reduction compared to the untreated check (treatment 10) with 1.9% and 4.6% yield decrease, respectively. Statistically, treatment 9 was significantly different from treatments 2, 3, 11, and 12 in terms of yield % of control.

CONCLUSION

Timely fungicide application is important for disease control while maximizing agricultural input that result in a higher yield and pod quality. In an effort to increase sustainable practices in agriculture and manage the development of fungicide resistance fungicide selection and application timings play an important role. This trial provides two major conclusions, (1) disease management for pod rot might require application of multiple products to control multiple pathogens; (2) application timing has an effect on disease severity and yield. Although not definitive correlation between treatment and yield was observed, disease reduction was detected based on the controlled pathogens.

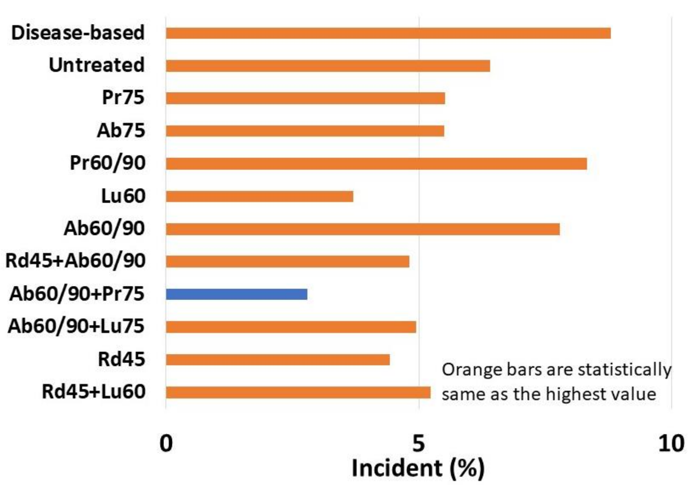

Figure 1. Disease incident.

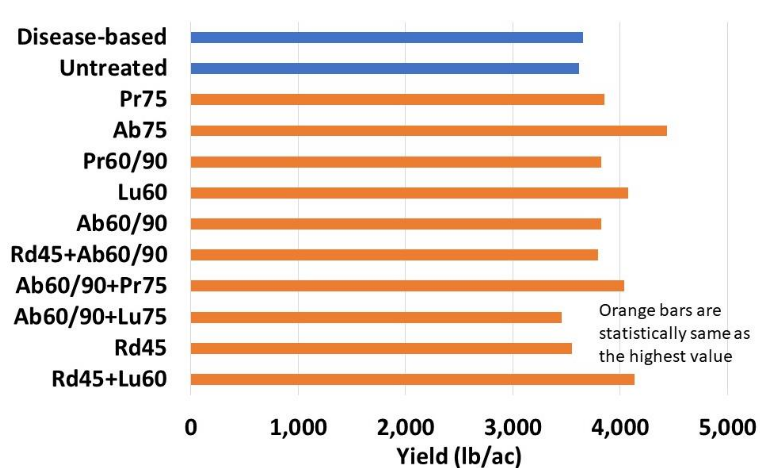

Figure 2. Yield.