Agrichemical Interactions in Peanuts

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Table 9-1. Schedule for Management of Biotic and Abiotic Stresses in Peanut*

Stresses	Type	April	May	June	July	Aug	Sept
Weeds	Broadleaf	Yes	Yes	Yes	Yes	Yes	
	Sedge	Yes	Yes	Yes	Yes		
	Grass	Yes	Yes	Yes	Yes	Yes	
Arthropods	Thrips	Yes	Yes	Yes			
	Southern corn rootworm				Yes	Yes	
	Corn earworm				Yes	Yes	Yes
	Fall armyworm				Yes	Yes	Yes
	Tobacco budworm				Yes	Yes	Yes
	Beet armyworm				Yes	Yes	Yes
	Spider mites			Yes	Yes	Yes	Yes
Diseases	Botrytis					Yes	Yes
	Cylindrocladium black rot (CBR)	Yes	Yes				
	Pythium	Yes	Yes				
	Aspergillus crown rot	Yes	Yes				
	Early leaf spot				Yes	Yes	Yes
	Late leaf spot				Yes	Yes	Yes
	Rhizoctonia limb rot				Yes	Yes	
	Sclerotinia blight				Yes	Yes	Yes
	Tomato spotted wilt virus (TSWV)	Yes	Yes				
	Stem rot	Yes	Yes		Yes	Yes	
	Web blotch				Yes	Yes	Yes
	Nematodes	Yes	Yes	Yes			
Nutrient and Vine Management	Boron			Yes	Yes		
	Bradyrhizobium	Yes	Yes				
	Calcium			Yes	Yes		
	Manganese			Yes	Yes		
	Prohexadione calcium				Yes	Yes	

*Gray shading indicates when a stressor is often addressed in peanut.

WHY TANK MIX?

Agrichemical Interactions in Peanuts

What can go wrong?

Poor pest control

Crop injury

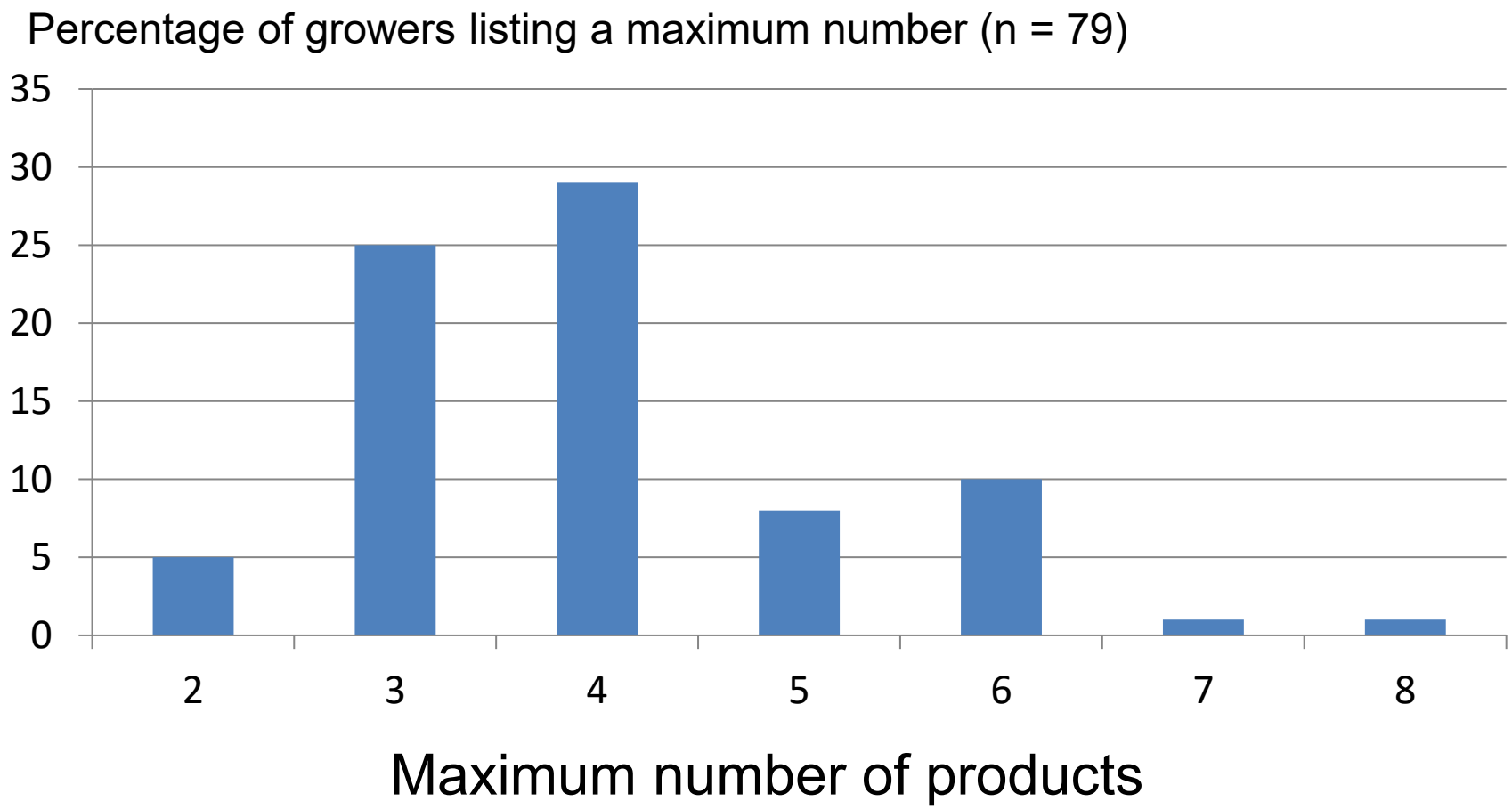
Settling of materials in the tank

Figure caption. Deposition of pesticide spray on the peanut canopy

What is the maximum number of products you have put in a tank at one time?

Product labels are not always clear when it comes to tank mixtures

What is the maximum number of products you have put in a tank at one time?



Typical Peanut Grower (18 possible trips)

Herbicides applied PPI, PRE, EPOST, MPOST, LPOST (5 sprays)

Insecticides applied in the seed furrow at planting, EPOST for thrips control, and LPOST for foliar-feeding insects (3 sprays)

Sprays for stem rot and leaf spot diseases (5 sprays)

Foliar-applied boron and manganese (2 sprays)

Calcium sulfate (1), prohexadione calcium (2)

Tank Mixes – Approximate Number of Active Ingredients

19 herbicides

17 insecticides

23 fungicides

2 fumigants

Prohexadione calcium

Growth stimulants and enhancers

Foliar fertilizers

Pesticide	Efficacy	Field	Change?
Active ingredient	Absorption	Species	Other product(s)
Formulation	Translocation	Pest stress	Rate of product(s)
Adjuvant	Metabolism	Pest size	Order of mixing
Carrier quality		Pest development	
Carrier volume		Rainfall	
		Humidity	
		Temperature	
		Time of day	

Addressing Compatibility Issues

Sequential applications

Increase pesticide rate of the affected product

Adjuvant selection

Timely applications and no stress

Compatibility agents

Tank conditioners

Figure caption. Palmer amaranth seedlings in peanut (left) and Palmer amaranth at an advanced growth stage (right)

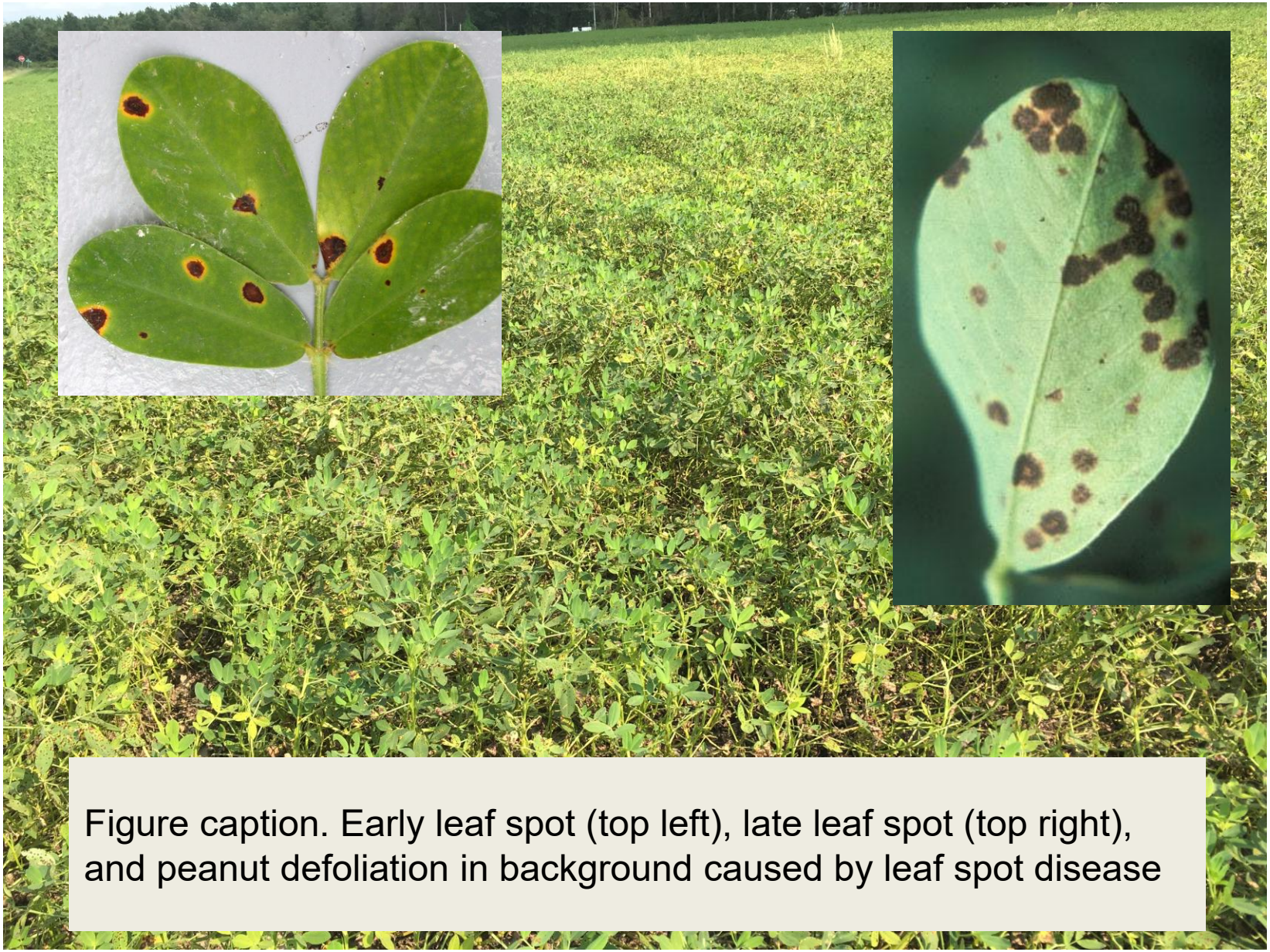
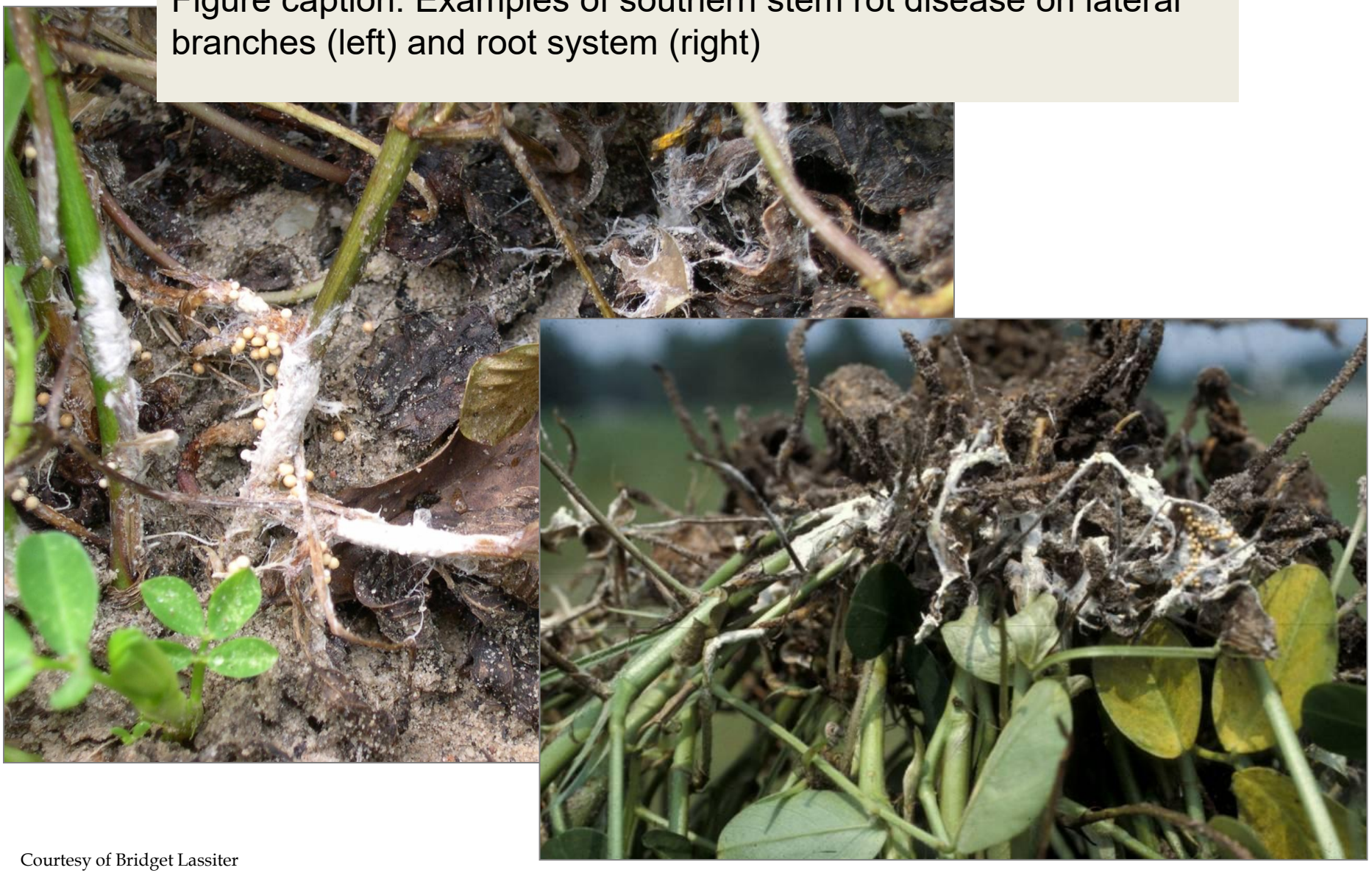


Figure caption. Early leaf spot (top left), late leaf spot (top right), and peanut defoliation in background caused by leaf spot disease

Figure caption. Examples of southern stem rot disease on lateral branches (left) and root system (right)



Courtesy of Bridget Lassiter

Figure caption. Examples of Sclerotinia blight disease in peanut

Courtesy of Damon Smith

Figure caption. Corn earworm or tobacco budworm feeding on peanut flower (left) and on stem (right)

Do tank mixtures promote practices that encourage resistance?

Issue	July 10	July 17	July 23	July 30
Stem rot and leaf spot (schedule or advisory)	Protected	**Spray**	Protected	Protected
Corn earworm (economic threshold)	0	2	2 or **6**	0 or **16**
Palmer amaranth (height)	**3”**	10”	2 feet	3 feet
Manganese (deficiency symptoms)	Yes	**Yes**	Yes	Yes
Prohexadione calcium (50% row closure)	No	No	**Yes**	Late

Figure caption. Peanut emergence (left) and view from a bed (right)

Figure caption. Peanut on left received inoculant for biological nitrogen fixation in the seed furrow at planting while yellow peanuts on the right had an inoculation failure

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What can go wrong?

Seek advice on tank mixtures

Has anyone else tried the mixture?