

# TN Field Tomato Manual

Includes: Disease/Insect ID, Control Options, Variety Selection & Spray Schedule

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## Acknowledgements

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- 2022 Southeast U.S. Vegetable Crop Handbook
- Dr. Allen Straw, Crop Consultant and Vegetable Specialist
- Cornell University Department of Plant Pathology Website,
- Picture Credits: T.A. Zitter, Rutgers University, A.F. Sherf, R. Providenti, and Grainger County Producers

# Disease Identification

Pictures taken from Cornell University, Rutgers University, A.F. Sherf, R. Providenti, and Grainger County Producers



Calcium Deficiency or Blossom-End Rot

Use Calcium Nitrate the 4<sup>th</sup>, 6<sup>th</sup> and 9<sup>th</sup> week of crop at 50 lbs/acre in drip irrigation. Calcium chloride can be used to spray crop at 4 lb/100 gal. Gypsum can also be added before planting (does not change pH)



Magnesium Deficiency

Use Epson Salt at 20 lb/A or 4 lb/greenhouse.



Phytophthora Blight



Septoria Leaf Spot





The photographic work of Kent Loeffler is gratefully acknowledged.

### Botrytis Gray Mold



Leaf Mold



Bacterial Pith Necrosis



Bacterial Canker



Bacterial Speck



Bacterial Spot



Southern Bacterial Wilt



Early Blight



Tomato Spotted Wilt Virus caused by Thrips





Fusarium Wilt



Verticillium Wilt



Late Blight



# Virus Diseases and Disorders of Tomato



Tomato Mosaic



Tobacco Mosaic Virus



Cucumber Mosaic



Tomato Big-Bud Phytoplasma

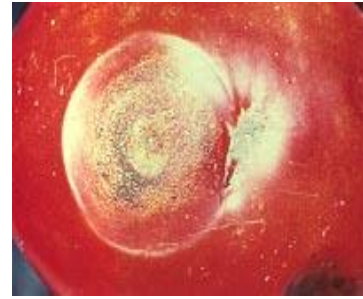
# Common Tomato Fruit Disorders



Blotchy Ripening



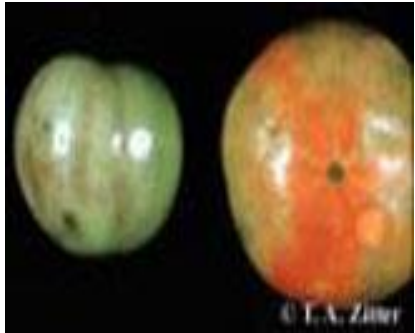
Bacterial Soft Rot



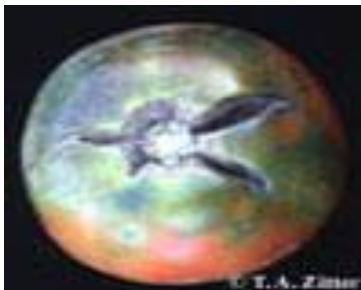
Anthracnose



Graywall



Zippering



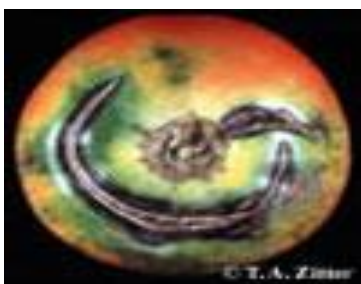
Radial Cracking



Catface



Bird's Eye Spot



Concentric Crack



Sunscald



Yellow Shoulders (K Def)

## Tomato Disease Control

All tables taken from 2022 Southeast U.S. Vegetable Crop Handbook.

Pest	Fungicide	Suggested Rate	Remarks & Precautions
<b>TOMATO, TRANSPLANTS</b>			
<b>Bacterial Canker</b> Tiny, dark brown to black spots on leaves.	streptomycin sulfate	1 lb/100 gal	When symptoms appear and 4-5 days intervals until transplant
	sodium hypochlorite (Clorox)	1 qt in 4 qt water	Wash seed for 40 min in solution with continuous agitation; air dry promptly. Use 1 gal solution per 1 lb seed
<b>Bacterial Spot, Speck</b>	Mancozeb+ Liquid Copper	3 Tbsp/gallon See notes below	Begin at first true leaf stage, repeat at 3 to 7 day intervals until planted. Alternating with streptomycin is recommended
	streptomycin sulfate	1 lb/100 gal	Begin application at first true leaf stage, repeat weekly until transplanting. For plant bed use only.
<b>Botrytis (Gray Mold)</b> Gray, fuzzy growth. & <b>Early Blight</b> Brown spots on leaves or stem.	Alterity or Switch	11 to 14 oz/A	Alterity or Switch – do not apply to grape or cherry tomatoes.
	Fontelis	0.5 -0.75 fl oz/gal	Fontelis- use 1 gallon of spray for 1,360 sq ft
	Luna Tranquility  chlorothalonil	11.2 fl oz/A  1.38 - 2 pt/43560 sq ft	Chloro - Spray, first true leaves, repeat at weekly interval. Outdoor beds only.
<b>Pythium Damping Off</b> Lower stem shrivels and seedling collapses.	Ranman 400SC	3 fl oz/100gal water	Apply as a soil drench to seedling tray or at time of transplanting.
	Previcur Flex	1.5 pt/A	
<b>Early Blight</b> Brown spots on leaves or stem.	Mancozeb+ Liquid Copper	3 Tbsp/gallon See notes below	
<b>Late Blight</b>	Micora	5.5 to 8 fl oz/A (5000 sq ft)	Previcur- can be used as drench before or after transplanting.
	Previcur Flex	0.7 to 1.5 pt/A	

Pest	Fungicide	Suggested Rate/Acre	PHI days	Maximum Use/Acre/Season	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Anthracnose</b> Circular, sunken spots on ripe fruit.	Quadris	5.0 – 6.2 fl oz/A	0	37 fl oz	Quadris - no more than 1 application before rotating to different MOA
	Chlorothalonil	2-3 pts see label	0	20 pt	
	Mancozeb +	3 lb/A	5	22.4 lb	
	Liquid Copper	See label/notes	0		
<b>Bacterial Spot and Speck (curative)</b> Small, dark spots on foliage and fruit.	Oxidate (byself) <b>Then</b> Follow same day	See notes →			OxiDate 2.0 – Curative: 1 gallon per 100 gallons of water. Rescue: 2.5 gallons per 100 gallons of water. DO NOT apply rescue rate to blooming crops.
	Mancozeb+	3 lb/A	5	22.4 lb	
	Liquid Copper+	See label/notes	0		
	Inspire Super	20 fl oz/A	0	80 fl oz	
	Rotate with Mancozeb+	3 lb/A	5	22.4 lb	
	Liquid Copper+	See below	0		
	Tanos	8 oz/A	3	72 fl oz	
	<b>OR</b> Gavel 75 DF	2 lb/A	5	16 lb/A	
<b>Bacterial Spot, Speck, (preventive)</b> Small, dark spots on foliage and fruit.	Liquid Copper+	See label	0		Ridomil/ Copper can be used, but see label for limitations on use of Ridomil. Adding Tanos to copper and mancozeb may slightly enhance efficacy.
	mancozeb+	3 lb/A	5	22.4 lb	
	Tanos	8 oz/A	3	72 fl oz	
<b>Bacterial Canker (preventive)</b>	Liquid Copper+	See label	0		Remove debris and rotate crops (sweet corn).
	mancozeb+	3 lb/A	5	22.4 lb	
	Tanos	8 oz/A	3	72 fl oz	
<b>Gray Mold (Botrytis)</b> Gray, fuzzy mold on blighted foliage and fruits.	Endura 70WG	9 - 12.5 oz/A	0	2 appl.	Endura is labeled for early blight control at 2.5 - 3.5 oz/A. If used at 3.5 oz/A then 6 applications/crop can be used.
	Inspire Super	20 fl oz/A	0	4 appl.	
	chlorothalonil	2 to 3 pts	0	20 pt	

Pest	Fungicide	Suggested Rate/Acre	PHI days	Maximum Use/Acre/Season	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Blossom End Rot</b> Dark, sunken area on blossom end of fruit.	calcium chloride	4 lb/100 gal	0	4 app	Apply as soon as problem is detected or earlier. Maintain adequate calcium level in soil and uniform soil moisture. Avoid excessive irrigation when plants are small.
<b>Buckeye Fruit Rot</b> Circular, zonate bands within large spot on fruit, worse on lower clusters <b>and Phytophthora Blight</b> Brought on by wetness. Dark lesions on leaves.	Ridomil Gold Bravo	2.5 to 3.25 pt/A	7	12.5 pt	Plant on raised beds, improve field drainage, and do not plant wet areas.
	Ridomil Gold Copper+	2lb/A	14		
	Mancozeb	3 lb/A	5	22.4 lb	
	Orondis Opti	2.5 pts/A	0	6 appl.	Orondis – no more than 2 appl before using different MOA.
<b>Damping-Off (Pythium Root and Stem Rot)</b>	Aliette WDG OR Linebacker	2.5 to 5 lb/acre	14	20 lb	Aliette or Linebacker – are foliar sprays and do not tank mix with copper.
	Ridomil Gold SL	2 lb/A	7		Ridomil - Apply uniformly to soil at time of planting. Incorporate mechanically if rainfall is not expected before seeds germinate. A second application may be made up to 4 weeks before harvest.
	Orondis Gold	28 to 55 fl oz/a	7		
	Previcur Flex (Apply Plevicur via transplant water, drip, sprinkler, or direct nozzle to lower portion of plant and soil.)	1.5 pt/acre	5	7.5 pt	Orordis - Apply at-plant by in-furrow, transplant water, banded surface spray, or drip irrigation. Do not follow soil applications with foliar applications with any product containing FRAC 49 fungicide.

Pest	Fungicide	Suggested Rate/Acre	PHI days	Maximum Use/Acre/Season	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Early Blight</b> Brown target spots followed by blighting of foliage.	Fontelis	10-24 oz	0	72 oz	When disease pressure is high, start spraying soon after plants are set and repeat at 7- to 10-day intervals.
	Inspire Super	16-20 fl oz	0	80 fl oz	
	Cabrio EG	12 oz	0	96 oz	Note: Some resistance has been reported in the following chemicals; Quadris, Cabrio and Tanos.  Fontelis and Inspire Super are showing good results for early blight.
<b>Septoria Leaf Spot</b> Small, gray circular leaf spots with dark borders.	Endura 70 WG	2.5 - 3.5 oz	0	6 appl.	
<b>Target Spot</b>					
<b>Fusarium Wilt</b> Yellowing and wilting of foliage. Brown discoloration inside of stem.					Crop rotation, resistant varieties, and mustard mill/and/or/ planting mustard then incorporate are treatments. Maintain pH between 6.5 and 7.0.
<b>Late Blight</b> Dark, irregular spots, often worse on younger leaves. Favored by mild, wet weather.	Ridomil Gold Bravo	2.5 pt	5	label	Begin applications before onset of disease and repeat on a 5- to 10-day schedule. Use 5-7 day intervals during mild, wet weather or if late blight is present. Most of these products require alternation with late blight fungicides with a different mode of action. Tank mix with a protectant fungicide such as chlorothalonil or mancozeb. Most Late Blight is resistant to Ridomil. Do not use Revus Top on small-fruit varieties (mature fruit less than 2 in.)
	Orondis Opti	2.5 pt	0	10 pt	
	Orondis Ultra	8 fl oz	1	32 fl oz	
	Presidio 4 F	4 fl oz	2	12 fl oz	
Large, irregular spots on leaves; firm rot of fruit	Revus Top	7 oz	1	28 fl oz	
	Zampro  Ridomil Gold/Copper+ Mancozeb	14 fl oz  2 lb 3 lb	4  14 5	42 fl oz  label 22.4 lb	
	chlorothalonil	2-3 pt	0	20 pt	

Pest	Fungicide	Suggested Rate/Acre	PHI days	Maximum Use/Acre/Season	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Leaf Mold</b> Yellow spots on upper surface of leaf, olive to gray mold on underside.	Inspire Super	20 fl oz	0	80 fl oz	Tanos must be tank mixed with and alternated with a non-strobilurin fungicide such as chlorothalonil or mancozeb. .
	chlorothalonil	2 - 3 pt	0	20 pt	
	Tanos 50WG	8 oz	3	72 oz	
	LiquidCoppers+ mancozeb	See label/notes 1.5 - 3 lb	0	22.4 lb	
	Gavel 75 DF	2 lb	5	16 lb	
Ridomil Gold Bravo	2.5 pt	5			
<b>Sclerotinia Stem Rot (Timber Rot, White Mold)</b> Dry, brown rot on stem. Hard, black pea-like structures form inside stem.	Cabrio EG	12-16 oz	0	96 oz	The Endura and Fontelis tomato label does not include this disease; however, applied as for early blight control, should provide suppression of Sclerotinia.
	Priaxor Xemium	4-8 fl oz/100gal	7	24 fl oz	
	Contans WG	1 to 4 lb	0		
<b>Southern Blight</b> Plants wilt and die. White mold can often be seen on base of stem.	At Planting				Turn soil deep to bury plant debris which might harbor disease organisms.
	Blocker Fontelis	5-7.5 pt/100 gal 1-1.6 fl oz/1000 row ft			
	After Planting				
	Cabrio Fontelis	12-16 oz 16-24 fl oz			

Pest	Fungicide	Suggested Rate/Acre	PHI (days)	Maximum Use/Acre/Season	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Verticillium Wilt</b> Yellowing of leaves; main stem has tan discoloration.					Crop rotation, fumigation, and resistant varieties are treatments.

Notes:

**Liquid coppers** are better at staying in solution while spraying. Liquid Coppers are sold by many trade names. Here are 2 common products: Badge (0.75 to 1.8 pts/A or 7.2 oz/3 gallon) or MasterCop (0.5 to 3 pts/A or 12 oz/3 gallon). Copper products should be used at highest label rate for best protection.

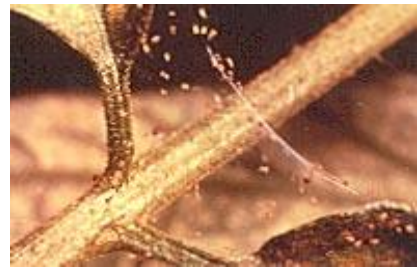


## Insect Identification

Pictures taken from Cornell University, Rutgers University, A.F. Sherf, R. Providenti, and Grainger County Producers



Aphids



Spider Mites



White Flies



Cabbage Looper



Tomato Hornworm



Tarnish Plant Bug Injury



Stink Bug



Leaffooted Bug



Tobacco Hornworm



Tomato Fruitworm



Spotted Cucumber Beetle



Striped Cucumber Beetle



Colorado Potato Beetle



Blister Beetle

## Field Insect Control

All information taken from 2022 Southeast U.S. Vegetable Crop Handbook

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Aphid</b>	Dimethoate	1 pt/A	7	48 hr	Dimethoate-Do not exceed label rate as leaf injury may occur.  PQZ – do not exceed 4.8 fl oz per crop.  Sivanto, Fulfill, Beleaf – Will not kill Flea beetles  Movento – do not exceed 10 fl oz/season. Requires surfactant.  Beleaf – Foliar or soil treatment are permissible. Soil should be made via drip and within 21 days of transplanting.  Platinum-drip irrigation  Actara-foliar application
	Admire/Alias	<b>Soil Treatment</b>			
	4.6F	7 to 10.5 fl oz	21	12 hr	
	2F	<u>16 to 24 fl oz</u>	21	12 hr	
		<b>Foliar</b>			
	4.6F	1.2 fl oz	0	12 hr	
	2F	3.75 fl oz	0	12 hr	
	Assail	2 to 4 oz	7	12 hr	
	Platinum 75 SG	1.66 – 3.67 oz	30	12 hr	
	Actara 25 WDG	2 to 3 oz	0	12 hr	
	Closer 2SC	1.5 to 2 fl oz	1	12 hr	
	Sivanto Prime	7 to 14 fl oz	1	4 hr	
	PQZ 1.87 EC	2.4 to 3.2 fl oz	1	12 hr	
	Fulfill 50 WDG	2.75 oz	0	12 hr	
	Sefina DC	3 oz	0	12 hr	
Movento	4 to 5 fl oz	1	24 hr		
Beleaf 50 SG	2 to 4.8 oz	0	12 hr		
<b>Cutworm</b>	(Pyrethroid)				
		Here is a list of pyrethroids with good activity.			
	Baythriod XL		0	12 hr	
	Tombstone		7	12 hr	
	Brigade		1	12 hr	
	Mustang Maxx	See specific label for rates.	1	12 hr	
	Karate/Warrior		5	24 hr	
	Proaxis		5	24 hr	
Danitol		3	24 hr		
Pounce		0	12 hr		

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Flea Beetle</b>	Dimethoate	1 pt/A	7	48 hr	Dimethoate-Do not exceed label rate as leaf injury may occur.
	Admire/Alias	<b>Soil Treatment</b>			
	4.6F	7 to 10.5 fl oz	21	12 hr	Belay- Soil treatment at planting only.
	2F	<u>16 to 24 fl oz</u>	21	12 hr	
		<b>Foliar</b>			
	4.6F	1.2 fl oz	0	12 hr	Platinum-drip irrigation
	2F	3.75 fl oz	0	12 hr	
	Platinum 75 SG	1.66 – 3.67 oz	30	12 hr	Actara-foliar application
	Actara 25 WDG	2 to 3 oz	0	12 hr	Sevin – is known for causing aphid flare-ups after use.
	Belay 50 WDG	<b>Soil Treatment</b>			
		<u>4.8 to 6.4 oz</u>		12 hr	
			<b>Foliar</b>		12 hr
		<b>Soil Treatment</b>			
	Venom 70SG	5 to 6 fl oz	21		
	Scorpoin 35 SL	<u>9 to 10.5 fl oz</u>	21		
	<b>Foliar</b>				
Venom 70SG	1 to 4 oz	1	12 hr		
Scorpoin 35 SL	2 to 7 oz	1	12 hr		
Baythroid XL	2.8 fl oz	0	?		
Mustang Maxx					
Sevin					
<b>Wireworm</b>	Diazinon AG 500 or 50 WP	2 to 4 qt		48 hr	Broadcast before planting and incorporate. Wireworms may be a problem in fields previously in pasture, corn, or soybeans. Also see spray schedule for more on sod planting.

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Whitefly</b>	Admire/Alias	<b>Soil Treatment</b>			
	4.6F	7 to 10.5 fl oz	21	12 hr	Platinum-drip irrigation
	2F	16 to 24 fl oz	21	12 hr	Actara-foliar application
	Platinum 75 SG	1.66 – 3.67 oz	30	12 hr	Sivanto-Soil application can be made through drip, at planting or post-transplant drench.
	Actara 25 WDG	2 to 3 oz	0	12 hr	
	Sivanto Prime	<b>Soil Treatment</b> 21 to 28 fl oz	45	12 hr	
	Sivanto Prime	<b>Foliar</b> 10.5 to 14 oz	1	12 hr	Knack- only 2 applications in season. Applications no closer than 14 days apart.
	Venom 70SG	<b>Soil Treatment</b> 5 to 6 fl oz	21		
	Scorpoin 35 SL	9 to 10.5 fl oz	21		Coragen-Foliar or soil application. Apply drip uniformly to roots zone.
	Venom 70SG	<b>Foliar</b> 1 to 4 oz	1	12 hr	
	Scorpoin 35 SL	2 to 7 oz	1	12 hr	Verimark-can be done drip
	Knack 0.86EC	8 to 10 fl oz	1	12 hr	
	Assail 30 SG	2.5 to 4 oz	7	12 hr	
	Coragen 1.67 SC	5 to 7.5 fl oz	1	4 hr	
	Verimark 1.67 SC	<b>Soil Treatment</b> 6.75 to 13.5 fl oz	1	4 hr	
Exirel 0.83 SE	<b>Foliar</b> 13.5 to 20.5 fl oz	1	12 hr		
<b>Leafminer</b>	Blackhawk/Entrust	See label			Radiant - Max 29 fl oz
	Radiant	6 to 8 fl oz	1	4 hr	Agri-Mek- Max 48 fl oz
	Agri-Mek	1.75 to 3.5 fl oz	7	12 hr	Coragen – foliar or soil
	Havanta	10.9 to 16.4 fl oz	1	4 hr	
	Coragen	5 to 7.5 fl oz	1	4 hr	
	Trigard	2.66 oz	0	12 hr	

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Colorado Potato Beetle</b>	Assail 30 SG	1.5 to 2.5 oz	7	12 hr	
	Coragen 1.67 SC	3.5 to 7.5 fl oz	1	4 hr	Coragen-Foliar or soil application. Apply drip uniformly to roots zone.
		<b>Soil Treatment</b>			
	Verimark 1.67 SC	5 to 10 fl oz	1	4 hr	Verimark-can be done drip
	Exirel 0.83 SE	7 to 13.5 fl oz	1	12 hr	Platinum-drip irrigation
		<b>Soil Treatment</b>			Actara-foliar application
	Admire/Alias 4.6F	7 fl oz	21	12 hr	
	Admire 2F	<u>16 fl oz</u>	21	12 hr	
	Admire 4.6F	1.3 to 2.2 fl oz	0	12 hr	
	Admire 2F	3.75 fl oz	0	12 hr	
	Platinum 75 SG	1.66 – 3.67 oz	30	12 hr	
	Actara 25 WDG	2 to 3 oz	0	12 hr	
		<b>Soil Treatment</b>			
Venom 70SG	5 to 7.5 oz (soil)	21	12 hr		
Radiant	5 to 10 fl oz	1	4 hr		
<b>Spider Mite</b>	Agri-Mek	1.75 to 3.5 fl oz	7	12 hr	
	Kanemite	31 fl oz	1	12 hr	Kanemite-do not use surfactant/adjuvant with this product.
	Acramite	0.75 to 1 lb	3	12 hr	
	Nealta	13.7 fl oz	3	12 hr	Acramite and Magister-only 1 application per season.
	Magister	24 to 36 fl oz	3	12 hr	
	Portal	2 pt	1	12 hr	Oberon-only 3application per season.
	Oberon	7 to 8.5 fl oz	1	12 hr	

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Armyworm</b>	Coragen 1.67 SC	3.5 to 7.5 fl oz	1	4 hr	Coragen-Foliar or soil application. Apply drip uniformly to roots zone.
<b>Cabbage Looper,</b>	Verimark 1.67 SC	<b>Soil Treatment</b> 5 to 10 fl oz	1	4 hr	Verimark-can be done drip
<b>Hornworm,</b>	Exirel 0.83 SE	<b>Foliar</b> 7 to 13.5 fl oz	1	12 hr	Bt – tomato fruit worm resistance has been noted.
<b>Tomato Fruitworm,</b>	Pyrethroid	(See Cutworm)			Avaunt- max 24 oz/season
<b>Pinworm</b>	Bt (bacillus thuringiensis) Xentari	0.5 to 2 lb	0	4 hr	Lannate- may induce leafminer infestation.
	Havanta 50 SL	10.9 to 16.4 fl oz	1	4 hr	Intrepid-use low rate early season then higher rate (6 to 10) for mid to late season.
	Proclaim 5 WDG	2.4 to 4.8 oz	7	12 hr	
	Avaunt eVo	3.5 to 6 oz	3	12 hr	
	Lannate 2.4 L	1.5 to 3 pt	1	48 hr	Rimon-max 3 appl/season.
	Intrepid 2 F	4 to 10 fl oz	1	4 hr	
	Rimon 0.83 EC	9 to 12 fl oz	1	12 hr	
	Radiant 1 SC	5 to 10 fl oz	1	4 hr	
	Blackhawk/Entrust	See label			
	Brigade, Tundra & Capture (have some activity)	See label			

Pest	Insecticide	Suggested Rate/Acre	PHI (days)	Restricted Entry Interval (REI)	Remarks & Precautions
<b>TOMATO, FIELD</b>					
<b>Thrips</b>	Dimethoate 4 EC	0.5 to 1 pt	7	48 hr	Planthouse treatment of transplants the following products can be used: Lannate, Rimon, Radiant, and Torac.  Neem Oil - has some activity on thrips in the flowers.
	Lannate 2.4 L	1.5 to 3 pt	1	48 hr	
	Radiant 1 SC	6 to 10 fl oz	1	4 hr	
	Neem Oil	See label			
	Beleaf 50 SG	2.4 to 4.8 fl oz	0	12 hr	
	Admire Pro 4.6 SC	0.44 fl oz per 10,000 plants		12 hr	
<b>Stink Bugs &amp; Leaffooted Bug</b>	Pyrethroid	(See Cutworm)			Vemon/Scorpion – can be used in drip.
		<b>Soil Treatment</b>			
	Venom 70SG	5 to 6 fl oz	21		
	Scorpoin 35 SL	9 to 10.5 fl oz	21		
		<b>Foliar</b>			
	Venom 70SG	1 to 4 oz	1	12 hr	
	Scorpoin 35 SL	2 to 7 oz	1	12 hr	
	Proaxis	2.56 to 3.84 fl oz	5		
	Danitol 2.4EC	10.67 fl oz	3		
	Brigade 2 EC	5.2 fl oz	1		
	Tundra	5.2 fl oz	1		
	Capture LFR (all 3 same)	6.8 fl oz	1		
	Lannate	3 pt	1	48 hr	
Actara 25 WDG	3 to 5.5 oz	0	12hr		



## Varieties

Subject to change each year as new cultivars are released. It is suggested to grow a few rows of other varieties to see if they fit your market and production goals. Grafted plants are showing great vigor and less disease loss in plantings.

### Varieties for Greenhouses

#### *Recommended for Bag Culture*

`Trust`  
`Match`  
`Switch`  
`Blitz`

#### *Recommended for Ground Planting*

##### Determinate

`Celebrity`  
`Empire`  
`Emperador`

##### Indeterminate

`Big Beef`  
`Biltmore`

##### Semi-Determinate

`BHN 589`

## Varieties for Field Production

### *Local Sales Varieties*

`Red Delight'  
`Red Pride'  
`Indy'

### *Truck Cropping Varieties*

`BHN 589'  
`BHN 961'  
`Biltmore'  
`Celebrity Supreme'  
`Empire'  
`Emperador'  
`Joker'  
`Fabulous'  
`Carolina Gold'  
`MT Fresh Plus'  
`Big Beef'  
`BHN 589'  
`BHN 871' (yellowish)

### *Shipping Varieties*

`Amelia'  
`Florida 47'  
`MT Fresh Plus'  
`Phoenix'  
`Red Bounty'  
`Red Defender'  
`Red Mountain'

## Tomato Spray Program Schedule (Commercial)

This schedule is only meant to be used as a suggestive guide for prevention. The amount of severity of disease pressure will determine which products need to be used. If you have any questions, ask your local Extension Agent.

Weeks after Transplanting	Fungicide	Rate (product/A)	PHI (days)	Insecticide	Rate (product/A)	PHI (days)							
0	Mancozeb + Liquid Copper	3 lb/A See label or notes below	5 0	Admire (Alias)soil or transplant	See label	21							
				Or Verimark	6.75 to 13.5 fl oz/A	1							
1	Mancozeb + Tanos + Liquid Copper	3 lb/A 8 oz/A See label or notes below	5 3 0	Dimethoate 4EC	1 pts/A	7							
							2	Mancozeb + Chlorothalonil + Liquid Copper	3 lb/A 2 – 3 pts/A (see label) See label or notes below	5 0 0	Lannate LV	1.5 pts/A	1
4	Mancozeb + Chlorothalonil + Liquid Copper	3 lb/A 2 – 3 pts/A (see label) See label or notes below	5 0 0	Lannate LV	1.5 pts/A	1							
							5	Fontelis + Liquid Copper	24 fl oz/A See label or notes below	0 0	Dimethoate 4EC + Platinum (drip) Platinum 75 SG	1 pts/A 5 fl oz/A 3.67 oz/A	7 30 30
6	Mancozeb + Chlorothalonil + Liquid Copper	3 lb/A 2 – 3 pts/A (see label) See label or notes below	5 0 0	Lannate LV	1.5 pts/A	1							
							7	Fontelis + Liquid Copper	24 fl oz/A See label or notes below	0 0	Dimethoate 4EC + Leap SC (some bacterial control) Do not mix with Bravo	1 pts/A 2 qts/A	1
8	Mancozeb + Chlorothalonil + Liquid Copper	3 lb/A 2 – 3 pts/A (see label) See label or notes below	5 0 0	Lannate LV + Agi-Mek SC	1.5 pts/A 3.5 fl oz/A	1 7							
							9	Fontelis + Liquid Copper	24 fl oz/A See label or notes below	0 0	Leap SC (see above)	2 qts/A	1

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10	Chlorothalonil + Liquid Copper	2 – 3 pts/A (see label) See label or notes below	0 0	Lannate LV	1.5 pts/A	1
11	Cabrio + Liquid Copper	12 oz/A See label or notes below	0 0	Tundra <b>or</b> Capture LFR	2.1 to 5.2 fl oz/A 2.8 to 6.8 fl oz/A	1 1
12	Chlorothalonil + Liquid Copper	2 – 3 pts/A (see label) See label or notes below	0 0	Baythroid XL XenTari	2.8 fl oz/A 0.5 to 2 lb/A	0 0
13	Inspire Super Or Cabrio + Liquid Copper	20 fl oz/A 12 oz/A See label or notes below	0 0 0	Tundra <b>or</b> Capture LFR	2.1 to 5.2 fl oz/A 2.8 to 6.8 fl oz/A	1 1
14	Chlorothalonil + Liquid Copper	2 – 3 pts/A (see label) See label or notes below	0 0	Baythroid XL XenTari	2.8 fl oz/A 0.5 to 2 lb/A	0 0
15	Chlorothalonil + Liquid Copper	2 – 3 pts/A (see label) See label or notes below	0 0	Lannate LV	1.5 pts/A	1
16	Chlorothalonil + Liquid Copper	2 – 3 pts/A (see label) See label or notes below	0 0	Baythroid XL	2.8 fl oz/A	0

### Comments:

- Liquid coppers are better at staying in solution while spraying. Liquid Coppers are sold by many trade names. Here are 2 common products: Badge (0.75 to 1.8 pts/A or 7.2 oz/3 gallon) or MasterCop (0.5 to 3 pts/A or 12 oz/3 gallon). Copper products should be used a highest label rate for best protection.
- Fontelis is limited to 72 fl oz/A/season, basically 3 times.
- Inspire Super is limited to 80 fl oz/A/season, basically 4 times.
- Cabrio is limited to 96 fl oz/A/season. Basically 6 times.
- Chlorothalonil is limited to 20 pints/A/season.
- Platinum is limited to 11 oz/A/season.
- Lannate LV is limited to 16 applications/Crop.
- Leap should NOT be mixed with Chlorothalonil.

### In case of:

*Whitefly flare-ups* – Agri-Mek + PQZ then rotate with Portal + PQZ (PQZ is limited to 4.8 fl oz/A/season, basically 2 times).

*Stink Bug flare-ups* – Cormoran + Sultrus + Lannate

*Thrips* – Neem Oil has some effect on thrips in the flowers.

*Bacteria flare-ups* – Oxidate by itself, then follow up same day with Mancozeb + Copper + Inspire Super then rotate to Gavel or Mancozeb + Copper + Tanos

*Late Blight* – for later plantings and when disease pressure is higher, Presidio, Orondis, or Cabrio products should be used in schedule.

*Planting in sod (worm control)* – Turn in winter, then use Coragen and a Pyrethroid early in schedule.

### Tomato Irrigation and Fertigation Schedule

Weeks after Transplanting	Irrigation Rate (inches/A/day) <sup>a</sup>	Irrigation Rate (gallons/A/week) <sup>b</sup>	N Rate (lb N/A/day) <sup>c</sup>	Fertilizer Product	Fertilizer Rate (lb/A/week) <sup>d</sup>
Preplant				12-24-24 <sup>e</sup>	500 <sup>e</sup>
0	0.10 - 0.15	6,300 - 9,500			
1	0.10 - 0.15	6,300 - 9,500			
2	0.10 - 0.15	6,300 - 9,500			
3	0.10 - 0.15	6,300 - 9,500			
4	0.20 - 0.25	12,600 - 15,800	1	Calcium Nitrate	50
5	0.20 - 0.25	12,600 - 15,800	1	Potassium Nitrate	50
6	0.20 - 0.25	12,600 - 15,800	1	Calcium Nitrate	50
7	0.25 - 0.30	15,800 - 19,100	1	Potassium Nitrate	50
8	0.25 - 0.30	15,800 - 19,100	1	20-20-20	50
9	0.25 - 0.30	15,800 - 19,100	1	Calcium Nitrate	50
10	0.25 - 0.30	15,800 - 19,100	1	Potassium Nitrate	50
11	0.25 - 0.30	15,800 - 19,100	1	20-20-20	50
12	0.25 - 0.30	15,800 - 19,100	1	Potassium Nitrate	50
13	0.20 - 0.25	12,600 - 15,800	1	20-20-20	50

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14	0.20 - 0.25	12,600 - 15,800	1	Potassium Nitrate	50
15	0.20 - 0.25	12,600 - 15,800	1	20-20-20	50
16	0.20 - 0.25	12,600 - 15,800	1	Potassium Nitrate	50

- <sup>a</sup> The water requirement of a plant increases as the plants become larger. In addition, as temperatures increase, more water is lost through transpiration. After the peak of production, the watering rate may be reduced.
- <sup>b</sup> The gallons of water/A/week is based on 27,156 gallons of water/A inch and 2 ft wide beds on 6 ft centers. Therefore, only 1/3 of the soil area is receiving water (2 ft out of 6 ft). If 2 ft beds were spaced on 5 ft centers, then the gallons required would be 15% higher.
- <sup>c</sup> This is a broadcast rate (the entire acreage, not just the area under the plastic). If calculating on a treated acre (the acre under the plastic), the rate would be 2.5 - 3 lb N/A/day.
- <sup>d</sup> This is a broadcast rate (the entire acreage, not just the area under the plastic). This rate can be applied once a week or split over several applications.
- <sup>e</sup> If a soil test is generated, then apply 60 lb/A N and P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O according to the soil test recommendations. However, if no soil test is generated, then apply a fertilizer that results in 50 - 60 lb/A N and 100 - 120 lb/A of each P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O (50-100-100 to 60-120-120).

### Herbicides with Timetable

For a more detailed list refer to the 2022 Southeast U.S. Vegetable Handbook.

Time of Application	Herbicide	Rate (product/A)	PHI (days)	
Burndown	Gramoxone 2 SL or Parazone 3SL Non-ionic Surfactant (NIS) <b>OR</b> Cornerstone Plus (Roundup Product)	2 to 4 qt/A 1.3 to 2.7 pt/A 8 oz  2 qt/A	30	
Pretransplant  <b>OR</b> Post-transplant <sup>A</sup>	Tricor DF/Metribuzin 75WDG  Tricor DF/Metribuzin 75DF Arrow/Intensity/Select 2EC COC	0.5 - 1.33 lb/A  0.5 lb/A (if broadcast) 16 fl oz/A 1% (v/v) (32oz)	7  7 20	
Row Middles <sup>A</sup> Post-transplant  Hoods can be useful in keeping spray off crop.	Profile 75/Sandea 75DG Arrow/Intensity/Select 2EC COC  <b>OR</b> Gramoxone 2SL or Parazone 3SL Non-ionic Surfactant	0.5 – 1 oz/A 16 fl oz/A 1% (v/v) (32 oz)  2 to 4 qt/A 1.3 to 2.7 pt/A 0.25% (v/v) (8 oz)	30 20  30 30	

<sup>A</sup> Poast 1.5EC (grass only killer) (20 day PHI) can be applied @ 1.5 pints/A. Use COC @ 1% v/v.  
TricorDF/Metribuzin **can not exceed 1.33 lb/crop.**

## Admire Treatment of Tomato Transplants

1. Mix 2 to 2.8 fl oz of Admire in 1 quart of water.
2. Treat 1,000 tomato plants with the 1 quart of water.
3. Rinse the plants with another quart of water.

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