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THE 2008 PEANUT DISEASE RISK INDEX FOR MINIMIZING DISEASES OF PEANUT IN THE SOUTHEASTERN UNITED STATES

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The Peanut Disease Risk Index, developed by research and extension faculty at the University of Georgia, the University of Florida, and Auburn University, is now officially known as “PEANUT Rx”. The 2008 version of PEANUT Rx has been fully reviewed and updated by the authors based upon data and observations from the 2007 field season.

As in the previous versions of the Disease Index, growers will note that attention to variety selection, planting date, plant population, good crop rotation, tillage, and other factors, can have a tremendous impact on the potential for disease in a field.

Spotted Wilt of Peanut

When tomato spotted wilt virus (TSWV) infects a host plant, it can cause a disease that severely weakens or kills that plant. This virus is capable of infecting an unusually large number of plants including several that are important crops in the southeastern United States. In recent years, peanut, tobacco, tomato and pepper have been seriously damaged by TSWV. The only known method of TSWV transmission is via certain species of thrips that acquired the virus by feeding on infected plants. Factors leading to the rapid spread of this disease in the Southeast are very complicated and no single treatment or cultural practice consistently gives effective control. However, several factors that influence the severity of TSWV in individual peanut fields have been identified.

Peanuts and fungal diseases: an unavoidable union

Successful peanut production in the southeastern United States requires that growers use a variety of tactics and strategies to minimize losses to disease. Weather patterns in Georgia and neighboring areas during the growing season, including high temperatures, high humidity and the potential for daily rainfall and thunder storms, create the near-perfect environmental conditions for outbreaks of fungal diseases. Common fungal diseases include early and late leaf spot, rust, Rhizoctonia limb rot, stem rot (referred to locally as “white mold”), Cylindrocladium black rot (CBR) and a host of other diseases that are common, but of sporadic importance. If peanut growers do not take appropriate measures to manage fungal diseases, crop loss in a field may exceed 50%.

Strategies for managing fungal diseases of peanut are typically dependent on the use of multiple fungicide applications during the growing season. Fungicide applications are initiated approximately 30 days after planting, as the interaction between crop growth and environmental conditions are likely to support the development of leaf spot diseases. The length of the effective protective interval of the previous fungicide application determines the timing for later applications. The length of time in which a fungicide can protect the peanut plant from infection is dependent on the properties of the fungicide and on weather conditions. Many growers will begin treating for soilborne diseases approximately 60 days after planting. With attention to proper timing of applications and complete coverage of the peanut canopy, growers can expect good to excellent control of leaf spot and reasonable control of soilborne diseases. Although control of leaf spot may approach 100%, growers typically can only expect about 60-70% control of soilborne diseases with effective fungicide programs.

Weather plays a major role in the potential for disease. Most fungal diseases are more severe during wet than dry weather patterns. **When weather conditions are very favorable for disease, severe epidemics may occur in fields where disease was not thought to be a problem. When weather conditions are unfavorable for fungal growth, disease severity may be low even in fields where it has been common in the past.** The AU-Pnut leaf spot advisory that has been used to effectively manage diseases in peanut is based on this relationship between disease and weather. Even those growers who do not use AU-Pnut recognize the need to shorten the time between fungicide applications in wet weather.

Factors Affecting the Severity of TSWV on Peanut

Peanut Variety

No peanut variety is immune to TSWV. However, a few varieties have consistently demonstrated moderate levels of resistance. In addition to resistance, (reduced disease incidence), some varieties appear to have some degree of tolerance (reduced severity in infected plants) as well. Higher levels of resistance and tolerance are anticipated since peanut breeding programs are now evaluating potential new varieties for response to TSWV.

Peanut varieties can have a major impact on fungal disease. The variety 'Georgia Green' is currently planted on the majority of the peanut acreage in the Southeast. However, new varieties from breeding programs at the University of Georgia and the University of Florida not only have improved resistance to spotted wilt, but to several fungal diseases as well. For example, the varieties 'AP-3' and 'Georgia-01R' have some of the best leaf spot resistance ever available in a commercial peanut variety. Varieties 'Georgia-02C', 'Carver' and 'Tifguard' have a level of resistance to Cylindrocladium black rot (CBR) that is superior to that of Georgia Green. Just as none of the current varieties is immune to spotted wilt, none are completely immune to fungal diseases either. However, improved resistance will likely reduce disease severity. It is important to remember that improved resistance to one disease does not mean that a variety also possesses superior resistance to all diseases. For example, Georgia-03L and C99-R have greater resistance to leaf spot than Georgia Green; however Georgia Green has greater resistance to Rhizoctonia limb rot.

Planting Date

Thrips populations and peanut susceptibility to infection are highest in the early spring. The timing of peanut emergence in relation to rapidly changing thrips populations can make a big difference in the incidence of TSWV for the remainder of the season. Optimum planting dates vary from year to year, but in general, early-planted and late-planted peanuts tend to have higher levels of TSWV than peanuts planted in the middle of the planting season. Note: In recent years, peanut planted in the second half of May and in June are less affected by spotted wilt than in previous years.

It is important for larger acreage peanut farmers to spread their harvest season. Some staggering of planting dates may be necessary, but to avoid spotted wilt pressure, it may be more effective to plant varieties with different time-to-maturity requirements as closely as possible within a low-risk time period. If peanuts must be planted during a high-risk period, try to minimize the risk by adopting risk reducing index factors.

Planting date affects the severity of fungal diseases. Earlier planted peanuts (April-early May) tend to have more severe outbreaks of white mold than later planted peanuts. Earlier planted peanuts are likely to be exposed to longer periods of hot weather, favorable for white mold, than later planted peanuts which will mature in late summer or early fall. However, the threat from leaf spot is generally more severe on peanuts planted later in the season than earlier. Reasons for this include the warmer temperatures later in the season that are more favorable for the growth and spread of the leaf spot pathogens and because the level of inoculum (number of spores) in the environment increases as the season progresses. Thus, later planted peanuts spend a greater portion of their growth exposed to increased leaf spot pressure than do earlier plantings.

Plant Population

An association between skippy stands and higher levels of TSWV was noted soon after the disease began to impact peanut production. More recently, research has confirmed the impact of plant population on TSWV incidence. Low and high plant populations may actually have the same number of infected plants, but the percentage of infected plants is greater in low plant populations. In other words, a higher plant population may not reduce the number of infected plants, but it will increase the number of healthy plants that can fill in and compensate for infected plants. In some cases, low plant populations may increase thrips numbers per plant thereby increasing the probability of infection. When plant populations are as low as two plants per foot, severe losses to TSWV have been observed even when other factors would indicate a low level of risk. Getting a rapid, uniform stand with the desired plant population is a function of not only seeding rate but also seed quality, soil moisture, soil temperature and planting depth.

Plant population has less effect on fungal diseases than on TSWV. However, it is now known that white mold severity increases when the space between the crowns of individual plants decreases. This is because the shorter spacing allows for greater spread of the white mold fungus, *Sclerotium rolfsii*.

Insecticide Use

In general, insecticides used to control the thrips vectors has been an ineffective in suppressing TSWV. In theory, lowering overall thrips populations with insecticides should reduce in-field spread of TSWV. However, insecticides have proven to be ineffective at suppressing primary infection, which is when most TSWV spread occurs in peanuts. Despite the overall disappointing results with insecticides, phorate (Thimet 20G and Phorate 20G), has given consistent, low-level TSWV suppression. The mechanism of phorate's TSWV suppression is not known, but the level of thrips control is <u>not</u> greater with phorate than with other insecticides. Phorate may induce a defense response that allows the plant to better resist infection or inhibits virus replication.

Row Pattern

Seven to ten-inch twin row spacing, utilizing the same seeding rate per acre as single rows, has become increasingly popular. Research on irrigated peanuts has shown a strong tendency for higher yields, a one to two point increase in grade and reductions in spotted wilt severity that have averaged 25-30%. The reason for this reduction in spotted wilt is not fully understood.

Single or twin row plantings have some effect on the potential for disease in a field. Work done at the Coastal Plain Experiment Station has lead to the observation that white mold is more severe in single rows (six seed per foot) than in twin rows (three seed per foot). White mold often develops in a field by infecting sequential plants within the same row. Planting the seed in twin rows rather than single rows increases the distance between the crowns of the peanut plants and delays the spread of white mold from plant to plant. The difference in leaf spot between single and twin row peanuts is negligible.

Tillage

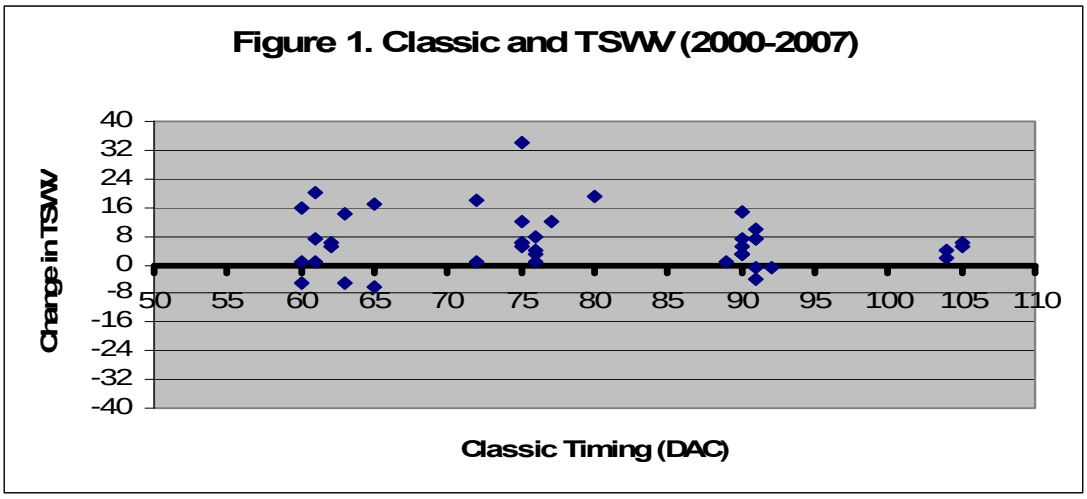
Tillage can have a big impact on peanut yield. There are many different methods to choose from, each with its own merits and disadvantages. Strip tillage has been shown to have some strong advantages (including reduced soil erosion and reduced time and labor required for planting), but in some situations, yields have been disappointing. Unbiased tillage research is difficult to accomplish, but studies have consistently shown that peanuts grown in strip till systems have less thrips damage and slightly less spotted wilt. On-farm observations have

confirmed these results, but more studies are needed in order to characterize the magnitude of the reduction. We do not suggest that growers should change their tillage method just to reduce spotted wilt, but we have included tillage in the risk index in an attempt to better identify total risks.

Conservation tillage, such as strip tillage, can reduce the amount of disease in a peanut field. For a number of years it has been recognized that spotted wilt is less severe in strip-tilled fields than in fields with conventional tillage. However, in results from recent field trials, it has been documented that leaf spot is also less severe in strip-tilled fields than in conventionally tilled fields, so long as peanut is not planted in consecutive season. Although the exact mechanism is currently unknown, the appearance of leaf spot is delayed in strip-tilled fields and the severity at the end of the season is significantly lower than in conventional tillage. Use of conservation tillage does not eliminate the need for fungicides to control leaf spot, but helps to insure added disease control from a fungicide program. Additional studies have found that white mold was not increased in strip tillage above conventional tillage when peanut was grown in rotation with cotton. Rhizoctonia limb rot was not evaluated; however cotton is a host for *Rhizoctonia solani* and the cotton debris would likely serve as a bridge between crops. Disease management is only one of many factors that a grower must consider when choosing to practice either conventional or conservation tillage. However, if a grower decides to practice conservation tillage with peanut production, he can expect lower levels of leaf spot in many instances.

Classic® Herbicide

Research and field observations over the past several years have confirmed that the use of Classic (chlorimuron) can occasionally result in an increased expression of tomato spotted wilt of peanut. Results from 15 field trials conducted from 2000 to 2007 are presented in the following graph:



Classic caused an 8% or less increase in tomato spotted wilt about 74% of the time and an increase of more than 8% about 26% of the time. Consequently, these results indicate that the effects of Classic on TSWV are minimal in comparison to the other production practices that influence this disease. Additionally, Classic had no negative effect on peanut yield in these studies. Consequently, late-season Florida beggarweed populations that have the potential to reduce harvest efficiency and fungicide spray deposition should be treated with Classic. To date, other peanut herbicides have not been shown to have an influence on spotted wilt.

Crop Rotation

Crop rotation is one of the most important tactics to reduce disease severity in peanut. Increasing the number of years between peanut crops has been shown to reduce disease levels and increase yield. Fungi that cause leaf spot, Rhizoctonia limb rot, and white mold survive between crops on peanut crop debris, as survival structures in the soil, and on volunteer peanuts. Lengthening the time between peanut crops allows crop debris to rot, thus depriving fungal pathogens of a source of nutrition. Also, fungal survival structures and spores in the soil have a finite period of viability before they die. Fields with longer rotations will have less pressure from leaf spot diseases, Rhizoctonia limb rot, white mold, and perhaps CBR, than fields with shorter rotations, or no rotation at all. At least two years between peanut crops is needed to help manage diseases.

Choice of rotation crops, along with the length of the rotation, will have an impact on the potential for disease in a field. Rotation of peanut with ANY other crop will reduce the potential for early leaf spot, late leaf spot, and peanut rust. The pathogens that cause these diseases do not affect other crops. Rotation of peanuts with cotton, or a grass crop such as corn, sorghum, or bahiagrass, will reduce the potential for white mold because the white mold pathogen does not infect these crops, or at least not very well. Rotation of peanut with a grass crop will reduce the risk of Rhizoctonia limb rot. However, because cotton is also infected by *Rhizoctonia solani*, rotation with this crop will not help to reduce Rhizoctonia limb rot. Other crops, such as tobacco and many vegetables are quite susceptible to diseases caused by *Rhizoctonia solani* and will not help to reduce the severity of limb rot in a peanut field.

Field History

The history of disease in a field can be an important hint at the possibility of future disease outbreaks, for much the same reason as noted in the crop rotation section above. Fields where growers have had difficulty managing disease in the past, despite the implementation of a good fungicide program, are more likely to have disease problems in the future than are fields with less histories of disease.

White mold and Rhizoctonia limb rot outbreaks differ with regards to field history. Where white mold has been a problem in the past, it can be expected to be again in the future. Rhizoctonia limb rot is a disease that is more sensitive to environmental conditions, especially rainfall and irrigation, than white mold. Therefore, the severity of Rhizoctonia limb rot is likely to be more variable than white mold from year to year based upon the abundance of moisture during the season.

Irrigation

Irrigation is a critical component in maintaining high peanut yields. However, the water applied to a crop with irrigation is also beneficial for the fungal pathogens that cause leaf spot diseases, Rhizoctonia limb rot, and white mold. Rhizoctonia limb rot is likely to be more severe in irrigated fields with heavy vine growth; the increase in white mold may be less obvious. High soil temperatures as well as moisture from irrigation affect the severity of white mold.

Fungi causing leaf spot diseases need water for several important reasons, including growth, spore germination and infection of the peanut plant, and in some cases, spread of the fungal spores. Use of irrigation may extend the period of leaf wetness and the time of conditions

favorable for leaf spot diseases beyond favorable conditions in a non-irrigated field. In two otherwise similar fields, the potential for disease is greater in the irrigated field.

Measuring TSWV Risk

Many factors combine to influence the risk of losses to TSWV in a peanut crop. Some factors are more important than others, but no single factor can be used as a reliable TSWV control measure. However, research data and on-farm observations indicate that when combinations of several factors are considered, an individual field's risk of losses due to TSWV can be estimated. There is no way to predict with total accuracy how much TSWV will occur in a given situation or how the disease will affect yield, but by identifying high risk situations, growers can avoid those production practices that are conducive to major yield losses. The University of Georgia Tomato Spotted Wilt Risk Index for Peanuts was developed as a tool for evaluation of risk associated with individual peanut production situations. When high-risk situations are identified, growers should consider making modifications to their production plan (i.e. variety, planting date, seeding rate, etc.) to reduce their level of risk. **Using preventative measures to reduce risk of TSWV losses is the only way to control the disease. After the crop is planted, there are no known control measures.**

The index combines what is known about individual risk factors into a comprehensive, but simple, estimate of TSWV risk for a given field. It assigns a relative importance to each factor so that an overall level of risk can be estimated. Small plot studies and on-farm observations have been used to evaluate index performance each year since release of the first version. In research plots where multiple TSWV management practices were used, as little as 5% of the total row feet were severely affected by TSWV compared to over 60% in high-risk situations. Yield differences were over 2000 lbs. per acre in some cases. Results of these and other validation studies have been used to make modifications in all subsequent versions of the index. Future changes are expected as we learn more about TSWV.

Keep in mind that the risk levels assigned by this index are relative. In other words, if this index predicts a low level of risk, major losses to TSWV are <u>less likely</u> than in a field that is rated with a higher risk level. A low index value does <u>not</u> imply that a field is immune from TSWV losses. Losses due to TSWV vary from year to year. In a year where incidence is high statewide, even fields with a low risk level may experience significant TSWV- related losses.

Measuring Risk to Fungal Diseases of Peanut

The index presented here is based upon better understanding of factors that affect disease incidence and severity. It is designed to help growers approximate the magnitude of the risk from foliar and soilborne diseases in individual fields in 2008. More importantly, it should serve as an educational tool that allows the grower to predict the potential benefits of different management practices.

Risks associated with leaf spot, white mold and Rhizoctonia limb rot (but not Cylindrocladium Black Rot [CBR]) are determined independently. The point total for each variable is not linked between these diseases. However, points allotted to each variable in the PEANUT Rx are weighted within a disease category according to the importance of that variable (such as variety or field history) to another variable (such as planting date). For example, within the category for leaf spot diseases, a maximum of 30 points is allotted to the variable "variety" while 0 points is allotted to the variable "row pattern". The magnitude of points assigned for each disease and to each variable has been checked to insure that the point total for a field is consistent with

research and experience. For example, while it would be possible for a non-irrigated field planted to Georgia Green to fall in the lowest risk category, a field of irrigated Georgia Green could be in a category of “medium risk” but not “low risk”.

NOTE: When weather conditions are favorable for fungal diseases, especially when rainfall is abundant, even ‘low risk’ fields may become “high risk”.

PEANUT Rx

For each of the following factors that influence the incidence of TSWV or fungal diseases, the grower or consultant should identify which option best describes the situation for each peanut field. An option must be selected for each risk factor unless the information is “unknown”. A score of “0” for any variable does not imply “no risk”, but that this practice does not increase disease risk. Add the index numbers associated with each choice to obtain an overall risk index value. Compare that number to the risk scale provided and identify the projected level of risk.

Peanut Variety

Variety[1]	TSWV Points	Leaf Spot Points	Soilborne Disease Points	
			White mold	Limb rot
Flavorunner 458[2]	50	unknown	unknown	unknown
NC-V 11	35	30	30	25
Georgia Green	30	20	25	15
Virugard	30	20	25	unknown
Gregory	30	30	25	25
Andru II[2]	25	30	25	25
AT 3081R	25	30	30	unknown
Florida Fancy*	25	unknown	unknown	unknown
McCloud	20	25	20	unknown
C-99R[4]	20	15	15	25
Carver[3]	20	30	25	25
AT 3085 RO	20	30	25	unknown
Georgia-06G*	20	unknown	unknown	unknown
Georgia-05E	15	20	25	unknown
Georgia-03L[5]	15	15	10	20
Georgia-02C[2,3,5]	15	20	10	20
Georgia-01R[3]	10	10	15	15
York	10	10	10	unknown
Florida-07	10	20	15	unknown
AP-3[4]	10	25	10	25
Tifguard[3,6]	10	15	unknown	unknown
Georganic	5	10	10	unknown

**Data for new varieties is limited and risk ratings will be changed as needed in the future.*

[1]*Adequate research data is not available for all varieties with regards to all diseases. Additional varieties will be included as data to support the assignment of an index value are available.*

[2]*High oleic variety.*

[3]*Varieties Carver, GA-02C, GA-01R, and TifGuard have increased resistance to Cylindrocladium black rot (CBR) than do other varieties commonly planted in Georgia.*

[4]*Varieties AP3, DP1, and C-99R are less resistant to CBR and are not recommended for fields where this disease is a problem.*

[5] *The malady referred to as "funky" or "irregular" leaf spot tends to be more severe in GA02C and GA03L than in other varieties. Although this condition can look like early leaf spot (Cercospora arachidicola), the cause "funky" leaf spot is unknown. Disease losses are not typically associated with funky leaf spot.*
[6]*The new variety Tifguard has excellent resistance to the peanut root-knot nematode.*

Planting Date

Peanuts are planted:	TSWV Points[1]	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
Prior to May 1	30	0	10	0
May 1 to May 10	15	0	5	0
May 11-May 31	5	5	0	0
June 1-June 10	10	10	0	5
After June 10	15	10	0	5

Plant Population (final stand, not seeding rate)

Plant stand:	TSWV Points[1]	Leaf Spot Points	Soil-borne Disease Points	
			White mold[2]	Limb rot
Less than 3 plants per foot	25	NA	0	NA
3 to 4 plants per foot	15	NA	0	NA
More than 4 plants per foot	5	NA	5	NA

[1]*Only plant during conditions conducive to rapid, uniform emergence. Less than optimum conditions at planting can result in poor stands or delayed, staggered emergence, both of which can contribute to increased spotted wilt. Note: a twin row is considered to be one row for purposes of determining number of plants per foot of row.*

[2]*It is known that closer planted peanuts tend to have an increased risk of this disease.*

At-Plant Insecticide

Insecticide used:	TSWV Points*	Leaf Spot Points	Soil-borne Disease oints	
			White mold	Limb rot
None	15	NA	NA	NA
Other than Thimet 20G or Phorate 20G	15	NA	NA	NA
Thimet 20G, Phorate 20G	5	NA	NA	NA

[*]*An insecticide's influence on the incidence of TSWV is only one factor among many to consider when making an insecticide selection. In a given field, nematode problems may overshadow spotted wilt concerns and decisions should be made accordingly.*

Row Pattern

Peanuts are planted in:	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
Single rows	15	0	5	0
Twin rows	5	0	0	0

Tillage

Tillage	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
conventional	15	10	0	0
reduced*	5	0	0	5

** For fungal diseases, this is does not apply for reduced tillage situations where peanut is following directly behind peanut in a rotation sequence. Limb rot can exist on some types of crop debris and use the organic matter as a bridge to the next peanut crop.*
***"Funky" or "irregular" leaf spot tends to be more severe in conservation tillage than in conventional tillage, though this malady is not typically associated with yield losses.*

Classic® Herbicide

	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
Classic Applied	5	NA	NA	NA
No Classic Applied	0	NA	NA	NA

Crop Rotation with a Non-Legume Crop.

Years Between Peanuts*	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
0	NA	25	25	20
1	NA	15	20	15
2	NA	10	10	10
3 or more	NA	5	5	5

**All crops other than peanut are acceptable in a rotation to reduce leaf spot. Cotton and grass crops will reduce the severity of white mold. Rhizoctonia limb rot can still be a significant problem, especially with cotton, under a longer rotation with favorable conditions, e.g. heavy vine growth & irrigation/ rainfall. Rotation with soybeans can increase risk to white mold, Rhizoctonia limb rot, and CBR. Rotation with grass crops will decrease the potential risk of limb rot; tobacco and vegetables will not.*

Field History

Previous disease problems in the field?*	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
NO	NA	0	0	0
YES	NA	10	15	10

** "YES" would be appropriate in fields where leaf spot and/or soilborne diseases were a problem in the field despite use of a good fungicide program.*

Irrigation

Irrigation	TSWV Points	Leaf Spot Points	Soil-borne Disease Points	
			White mold	Limb rot
NO	NA	0	0	0
YES	NA	10	5*	10

** Irrigation has a greater affect on Rhizoctonia limb rot than on (white mold or Cylindrocladium black rot (CBR).*

Calculate Your Risk

Add your index values from:

	TSWV Points	Leaf Spot Points	White Mold Points	Rhizoctonia Limb Rot Points
Peanut Variety				
Planting Date				
Plant Population		----		----
At-Plant Insecticide		----	----	----
Row Pattern				
Tillage				
Classic® Herbicide		----	----	----
Crop Rotation	----			
Field History	----			
Irrigation	----			
Your Total Index Value				

Interpreting Your Risk Total

Point total range for tomato spotted wilt = 35-155.
Point total range for leaf spot = 10-100.
Point total range for white mold = 10-95.
Point total range for Rhizoctonia limb rot = 15-75.

Risk Category

Risk Catagory	**TSWV Points**	**Leaf Spot Points**	**Soilborne Points**	
			white mold	**limb rot**
High Risk	**≥115**	**65-100**	**55-80**	**45-75**
High Risk for fungal diseases: Growers should always use full fungicide input program in a high-risk situation.				
Medium Risk	**70-110**	**40-60**	**30-50**	**30-40**
Medium Risk for fungal diseases: Growers can expect better performance from standard fungicide programs. Reduced fungicide programs in research studies have been successfully implemented when conditions are not favorable for disease spread.				
Low Risk	**≤65**	**10-35**	**10-25**	**15-25**
Low Risk for fungal diseases: These fields are likely to have the least impact from fungal disease. Growers have made the management decisions which offer maximum benefit in reducing the potential for severe disease; these fields are strong candidates for modified disease management programs that require a reduced number of fungicide applications.				

Examples of Disease Risk Assessment

Situation 1.

A grower plants **Georgia Green** (30 spotted wilt points, 20 leaf spot points, 25 white mold points, 15 limb rot points) on **May 5** (15 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points), with **two years between peanut crops** (0 spotted wilt points, 10 leaf spot points, 10 white mold points, 10 limb rot points) on **conventional tillage** (15 spotted wilt points, 10 leaf spot points, 0 white mold points, 0 limb rot points), **single row spacing** (15 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **a history of leaf spot disease**, but **not soilborne diseases** (0 spotted wilt points, 10 leaf spot points, 0 white mold points, 0 limb rot points) using **Classic® herbicide** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **Temik 15G at-plant insecticide** (15 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with a **final plant population** of 2.8 plants per foot of row (25 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points).

Points:

Spotted wilt: **120** (high risk) leaf spot: **60** (medium risk), white mold: **50** (medium Risk), Rhizoctonia limb rot: **35** (medium risk)

Situation 2.

A grower plants **Georgia-02C** (15 spotted wilt points, 20 leaf spot points, 10 white mold points, 20 limb rot points) on **May 15** (5 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), with **three years between peanut crops** (0 spotted wilt points, 5 leaf spot points, 5 white mold points, 5 Rhizoctonia limb rot points) on **strip tillage** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 5 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **no history of leaf spot disease or soilborne disease** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **phorate at-plant insecticide** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with a **final plant population** of 4.2 plants per foot (5 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points).

Points:

Spotted wilt: **40** (low risk), leaf spot: **40** (medium risk), white mold: **25** (low risk), Rhizoctonia limb rot: **40** (medium risk)

Situation 3.

A grower plants **Georgia Green** (30 spotted wilt points, 20 leaf spot points, 25 white mold points, 15 limb rot points) on **May 15** (5 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), with **one year between peanut crops** (0 spotted wilt points, 15 leaf spot points, 20 white mold points, 15 limb rot points) on **conventional tillage** (15 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **a history of leaf spot disease, white mold, but not Rhizoctonia limb rot** (0 spotted wilt points, 10 leaf spot points, 15 white mold points, 0 limb rot points) with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **Orthene insecticide** (15 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot points) with a **final plant**

population of 3.5 plants per foot of row (15 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot).

Points:
Spotted wilt points: **85** (medium risk), leaf spot risk: **65** (high risk), white mold: **65** (high risk), limb rot: **40** (medium risk)

Situation 4.
A grower plants **Georgia 01-R** (10 spotted wilt points, 10 leaf spot points, 15 white mold points, 15 limb rot points) on **April 28** (30 spotted wilt points, 0 leaf spot points, 10 white mold points, 0 limb rot points) with **one year between peanut crops** (0 spotted wilt points, 15 leaf spot points, 20 white mold points, 15 limb rot points) on **strip tillage** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 5 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) in a **non-irrigated** field (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with **a history of leaf spot, white mold, and Rhizoctonia limb rot** (0 spotted wilt points, 10 leaf spot points, 15 white mold points, 10 limb rot points), with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), using **Thimet at-plant insecticide** (5 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot points) with a **final plant population** of 4.4 plants per foot of row (5 spotted wilt points, 0 leaf spot points, 5white mold, 0 limb rot).

Points:
Spotted wilt risk: **60** (low risk) leaf spot risk: **35** (low risk), white mold: **65** (high risk), limb rot: **45** (high risk)

"Planting Windows" to Attain Low Risk for Spotted Wilt

If planting date were the only factor affecting spotted wilt severity, growers would have no flexibility in when they planted. Fortunately, other factors are involved and by choosing other low risk options, growers can expand their planting date window. Remember, the goal is to have a total risk index value of 65 or less, regardless of which combination of production practices works best for you. The following table demonstrates how the planting date window expands as other risk factors go down. For example, where a grower achieves a good stand, uses strip tillage and twin rows, and Thimet, but does not use Classic, he may plant a "10" or "15" point variety at ANY time in the season and still be at "Low" risk for spotted wilt.

	Points assigned to the peanut variety		
	20	15	10
Production practices and stand	**Planting date options to achieve a "LOW RISK" for TSWV using above varieties**		
Poor stand, conventional tillage, single rows, Temik, Classic is used	NONE	NONE	NONE
Average stand, twin rows, conventional tillage, Thimet, no use of Classic	May 11-25	May 11-June 5	May 1-June
Good stand, strip tillage, twin rows, Thimet, no use of Classic	After May 1	ANY	ANY