

DISEASE MANAGEMENT IN WHEAT

The most effective and economical method to control diseases of wheat is to plant disease resistant varieties. Resistance is the primary means to manage foliar diseases which cause the greatest yield reduction each year. However, few recommended varieties have "good" or high resistance to all the major foliar diseases. In addition, populations of fungi causing leaf rust and powdery mildew are constantly changing. There are numerous strains or races of these fungi. When a new variety is released, it is usually resistant to the most commonly occurring races of the fungi prevalent at that time. The race population can change rapidly. Certain individual races or new races may become more common. If a variety is not resistant to these races of the fungus, it can become severely diseased. This may happen as quickly as a year after the release of a new variety. Varietal recommendations are modified each year, often as a result of changes in disease susceptibility. Refer to the most recent information about the best varieties to grow in this guide and in the annual variety performance bulletin.

Weather conditions during the winter and spring can have a major effect on the severity of disease (Table 20). If the winter and spring are cool and/or dry, leaf diseases will usually be of little or no significance regardless of a variety's resistance. A warm, wet winter and spring are favorable for infection by disease-causing fungi. This results in more severe disease. New fungal races also increase more rapidly under such conditions. The combination of low resistance and warmer than normal winters and springs are favorable for severe powdery mildew, leaf rust, and *Stagonospora nodorum* leaf and glume blotch, the three most important fungal diseases. *Stagonospora nodorum* was formerly named *Septoria nodorum*. These conditions lead to an increased use of foliar fungicides to control diseases on susceptible varieties.

Seedborne and soilborne diseases are controlled primarily by seed treatment and crop rotation. Resistance is generally not available for these diseases. Following planting and fertility management recommendations all contribute to successful disease management for these and other diseases.

Among the diseases of wheat, viruses are often the most difficult to control. Three virus diseases occur on wheat in Georgia: soilborne mosaic, wheat spindle streak mosaic, and barley yellow dwarf. Most varieties have good tolerance to soilborne mosaic and wheat spindle streak. Tolerance or resistance to barley yellow dwarf is fair to low for most varieties.

Leaf Diseases

Powdery Mildew. This disease may occur on any above ground plant part, but it is usually most prevalent on the upper surface of the lower leaves. The conspicuous white to gray patches of fungus appear early in the season. When powdery mildew is severe, the entire leaf turns yellow and dies. Black spore producing structures develop in older lesions. Dense stands, high nitrogen fertility, and rapid growth increase susceptibility. Under such conditions a variety listed as having "good" resistance may become heavily infected. As the stem elongates and temperatures increase, conditions become less favorable for powdery mildew. This disease has the least effect on yields of any of the three diseases discussed in this guide. On all but the most susceptible varieties, powdery mildew confined to the lower leaves has little or no effect on yield. Fungicides should not be applied until flag leaf emergence unless a variety is very susceptible. If fungicide is applied too early, the plant will not be protected during the latter half of the grain-filling period.

Leaf Rust. Reddish-brown pustules develop on leaves and sheaths. These pustules are filled with spores of the fungus. Rubbing an infected leaf will leave rusty colored areas on your fingers. Rust pustules may be very tiny, barely large enough to see with the naked eye, to 1/8 inch in length. Generally, varieties with higher levels of resistance will have smaller pustules than varieties with lower levels of resistance. Varieties with poor resistance will also have larger yellow halos around the pustules. Leaf rust has the

greatest effect on yield of the diseases discussed here because it develops rapidly during favorable weather.

Stripe Rust. Also known as yellow rust. Pustules coalesce to produce long yellow stripes between veins of the leaf and sheath. Small yellow, linear lesions occur on floral bracts. These pustules are filled with spores of the fungus. In Georgia, the disease appears in late February early March during cool, overcast and wet weather. Stripe rust occurs well before leaf rust. Stripe rust is an emerging disease in Georgia and has been seen for two of the last three years. Stripe rust can have a potentially devastating effect on yield. Chemical options are available to control stripe rust however selection of fungicide should be made judiciously. Genetic resistance to stripe rust should be the best way to manage the disease. According to state breeders, there are several varieties or breeding lines than have higher levels of resistance to the disease. Work is in progress to release newer varieties with resistance to stripe rust. A complete description, diagnosis and management is now available at <http://pubs.caes.uga.edu/caespubs/pubcd/C960/C960.htm> (circular 960).

Leaf and Glume Blotch. Lesions (spots) are initially water-soaked and then become dry, yellow, and finally brown. Lesions are generally oblong, sometimes containing small black spore producing structures called pycnidia. The lesions are often surrounded by a yellow halo. Lower leaves are generally more heavily infected, with lesions joining together to cause entire leaves to turn brown and die. If pycnidia are present on lower leaves when the uppermost leaf and the head begin to emerge, infective spores will move to the top of the plant in splashing rain even after a brief shower. Symptoms may not appear for 10-15 days on the top leaves or glumes on the head. By the time lesions are seen on the head, it is too late for effective fungicide use. Therefore, it is important to examine the lower leaves for lesions when making decisions about fungicide application, not just the top leaves. Lesions are first tan or brown on the upper portion of the glume while the lower part remains green. As the head matures, it becomes purplish to black in appearance from glume blotch. Leaf and glume blotch can reduce yield as much as 20% and reduce test weight due to grain shriveling even when disease severity is low.

Barley Yellow Dwarf. Barley yellow dwarf virus (BYDV) is probably the most widely distributed virus in wheat. It is estimated to reduce yields by 5 to 25% each year. The symptoms are variable and resemble nutritional problems or frost damage. Usually the discoloration is characterized by various shades of yellow or reddening from the tips to the base and from the leaf margin to the midribs of the leaves. Some varieties have more yellow symptoms whereas others have more red to purple discoloration. When infection begins early in the season, after heading, the uppermost leaf is often very upright. Severe infection usually causes some stunting and reduction in numbers of seeds per head. BYDV is transmitted by several aphid species. Aphids acquire the virus by feeding on infected plants for very short periods and then move to other uninfected plants. Infection can occur any time when viruliferous aphids multiply and migrate in fields. Crop rotation is less effective for barley yellow dwarf because aphids can transmit the virus between fields, and many grasses on which the aphids feed also harbor the virus. Barley yellow dwarf can cause severe losses in many Georgia fields, most often following a mild fall and winter which allows aphids to be active and transmit the virus early in plant development. BYDV is present in nearly all fields each year. Disease severity depends on aphid populations and the proportion of aphids that can transmit the virus. Control of volunteer wheat and grassy weeds during the summer and along the edges of fields may slow initial infection. Planting during the latter part of the recommended period can delay fall infection. Resistant varieties and insecticide application to control aphids can reduce damage from barley yellow dwarf (see Insect Management).

Table 20. Optimum temperature and moisture for the major diseases affecting wheat grown in Georgia

DISEASE	OPTIMUM MOISTURE	OPTIMUM TEMPERATURE
Powdery Mildew ¹	High Humidity	59-72 ²
Leaf Rust	Free Moisture	59-72
Stripe Rust	Free Moisture	50-59
Leaf and Glume Blotch	Free Moisture	68-75
Take-All	Moist Soils	50-68

¹ Powdery mildew fungus does not need free moisture to develop.

² Temperatures above 77 F are not favorable for fungal development.

Seedborne and Soilborne Diseases

Seedling Blights. Several fungal pathogens infect the seed as it matures, particularly when rains are frequent during seed development. Seed quality is reduced significantly and germination is often problematic. Soil temperatures which are higher early in the fall also favor infection of the ungerminated seed and tissues of the germinating seedling by several species of soilborne *Pythium*. The combination of infection by both seedborne and soilborne fungi can result in severe pre- and post-emergence damping off. The result may be a substantially reduced stand that grows slowly or it may be necessary to replant. Seedling blights can be reduced by planting good quality seed and the use of seed treatment fungicides (Table 21).

Smut Diseases. There are two smut diseases that affect wheat in Georgia. They usually cause only minor problems, but they can increase rapidly and cause serious losses if not controlled. Loose smut causes the tissues in the head to be replaced by masses of powdery spores. The fungus spores invade the embryo of the developing seed and the fungus survives there until the seed germinates. Common bunt or stinking smut occurs rarely, but it can cause complete loss of a crop. The tissues of the head remain intact, but the seed is destroyed. The masses of smut spores are in 'bunt balls' which are held in the seed coat of the grain. Stinking smut gets its name from the foul odor it produces that is similar to rotting fish. The bunt balls are easily ruptured during harvest and millions of spores are deposited on the surface of healthy seeds. Spores germinate and invade the germinating seedling, and then the fungus grows systemically like loose smut. Smut spores are not toxic to animals or humans. These smut pathogens are only transmitted by seed. Planting certified seed is an effective method to control smut diseases because seed fields are carefully inspected. Seed treatment with systemic fungicides is an inexpensive way to achieve nearly complete control of loose smut and common bunt (Table 21).

Table 21. Seed Treatment Fungicides for Control of Seedborne and Soilborne Diseases of Wheat.

FUNGICIDE	CROP	RATE/100 LB SEED	REMARKS
Captan Captan 400	Wheat, Barley, Oats, Rye	See label	Controls seedling blights. Does not control smuts.
Carboxin-Thiram Vitavax 200 RTU-Vitavax-Thiram	Wheat, Barley, Oats, Triticale Wheat, Oats, Barley	2.0 oz. 2.0-4.0 oz.	Controls loose smut and stinking smut. Controls seedling blights. See label for specific rate for grains.
Difenoconazole Dividend	Wheat	0.5-1.0 oz.	Controls loose smut and stinking smut.
Difenoconazole-Metalaxyl Dividend XL RTA Dividend XL Dividend Extreme	Wheat Wheat Wheat	5-10 oz. 1.0-.2.0 oz. 0.5-1.0 oz.	Controls loose smut, stinking smut, and Pythium damping-off. Grower and commercially applied
Fludioxonil Maxim 4FS	Barley, Millet, Oats, Rye, Sorghum, Triticale, Wheat	0.08-0.16 fl oz	Controls Fusarium, Rhizoctonia, Helminthosporium and weakly pathogenic fungi such Aspergillus and Penicillium
Mefenoxan Apron XL, Apron XL-LS	Wheat, Barley, Millet, Oats, Rye, Sorghum, Triticale	0.042-0.08	Controls Pythium damping-off. Does not control smuts.
Metalaxyl Allegiance	Wheat, Barley, Millet, Oats, Rye, Sorghum, Triticale	See label	Controls Pythium damping-off. Does not control smuts.
Tebuconazole Raxil (in various combinations with other fungicides)	Wheat, Oats, Barley	3.5 to 4.6 fl. oz.	Controls loose smut and stinking smut. Controls seedling blights. Commercially-applied and drill-box formulations available.
Thiram	Wheat, Barley, Rye	See label	Controls seedling blights. Does not control smuts. Can be used for drill-box treatment.
Triadimenol Baytan 30 RTU Baytan-Thiram	Wheat, Barley, Oats, Rye All	0.75-1.5 oz.. 4.5-9.0 oz.	Controls loose smut and stinking smut. Controls smuts and seedling blights.

For Information on CruiserMaxx Cereals (thiamethoxam + mefenoxam + difenconazole) and Gaucho XT (Imidacloprid + metalaxyl + tebuconazole) see the Insect Management Section of this Guide. Commercial treatment of small grain seed is preferred, but a drill box treatment can be used with many formulations. Drill-box treatment may not give control to commercial treatment.

Take-all Root and Crown Rot. The fungus responsible for this disease builds up in the soil when wheat is planted in the same field two or more years. Roots are damaged progressively during the winter and

early spring. Shortly after heading infected plants wilt and die due to poor water movement from the rotted roots to the stems. The crown and lower stem turn black and plants are easily pulled from the soil. Areas of dead plants are circular or follow tillage patterns indicating movement of infested crop debris. Take-all is reduced by rotation with oats, fallow, or other non-cereal winter crops such as canola. Rotation with barley, rye, or triticale maintains the fungus in roots of these crops although they may not exhibit symptoms as severe as on wheat. Sorghum as a summer crop will reduce the disease in a subsequent wheat crop, whereas soybeans favor take-all. Other control measures include planting near the end of the recommended period to reduce fall infection and avoiding soil pH above 6.5.

Soilborne Mosaic and Spindle Streak Mosaic. The symptoms of soilborne mosaic range from mild green to a prominent yellow leaf mosaic. Plants may be stunted or rosette in shape. Symptoms are usually seen in late winter and early spring. New leaves may be mottled or exhibit streaks or flecking. Wheat spindle streak mosaic virus causes stunting and poor growth with yellow mottling and numerous elongated streaks on leaves. Leaf streaks are usually a light green to yellow. The discontinuous streaks run parallel to the leaf veins and taper to form a spindle shape. Both viruses are transmitted by a fungus which survives in the soil and transmits the virus into the wheat roots. These diseases are typically a problem when soils remain wet during the late fall and winter. Spindle streak mosaic and soilborne mosaic are most common in fields planted to wheat for two or more years. Both viruses may occur together and symptoms may intermingle. Crop rotation is an effective control method.

Fungicide Use

The decision about whether or not to use a fungicide needs to be made carefully. Fungicides do not increase yield. They only help preserve yield and test weight. If yield potential is low or there is no disease present at the critical time for fungicide application or conditions are not favorable for disease, there will be little benefit from fungicide application. If the price of wheat is low, there will be less profit from the use of fungicides. For these reasons, a decision guide has been developed to help you determine if fungicides will be beneficial. This guide makes no guarantee for an economic return on the fungicide investment. It will simply allow you to determine if fungicide treatment might help maintain yields.

To use this guide effectively, you must scout your wheat fields and be able to recognize the three major foliage diseases likely to reduce yields. If you have Internet access, consult the Field Crops section of the UGA Plant Pathology Extension site (<http://plantpath.caes.uga.edu/extension/DiseaseLibrary.html>) for information on these and other wheat diseases. Some fungicide manufacturers have a color booklet on small grain diseases which is helpful in disease identification. Begin scouting soon after the plants tiller and the stem begins to elongate. The leaves of plants should be observed at least once per week when jointing begins. Inspect plants twice each week from the time the flag (uppermost) leaf begins to emerge until flowering is complete. This is the most critical time to consider fungicide application. Inspect all the leaves, especially the lower leaves. Early in the season the lowest leaves may have symptoms while the younger upper leaves do not. Symptoms on the lower leaves are a good indication that the upper leaves will become infected, especially if rain or heavy dews occur during the next several weeks. Because disease symptoms may not appear until 7-12 days after infection begins, upper leaves that appear healthy may already be infected.

Fungicides can only be effective when you carefully select the fungicide with good activity against the disease(s) present (Table 22). They should be applied at the correct rate and time according to the label. Fungicides should be applied with enough water to get good coverage: 5-7 gal/acre for aerial and 20-30 gal/acre for ground application. Use of a spreader-sticker will help improve leaf retention and fungicide performance. When applying fungicides always read the label and comply with the instructions and restrictions listed.

Generally, the most effective time to apply fungicides is from flag leaf emergence to completion of heading but be certain to follow any label restrictions concerning time of application, the number of applications, and total amount of fungicide that can be applied per season.

Infectious fungi sometimes develop resistance to particular fungicides, especially when a product is used repeatedly without alternating with chemically unrelated fungicides. When fungicide resistance develops, there is no value in increasing rates, shortening intervals between sprays, or using other fungicides with similar modes of action. Several general strategies are recommended to minimize the risk of fungicide resistance. First, don't rely on fungicides alone for disease control. Avoid using wheat varieties that are highly susceptible to common diseases. Follow good disease management practices to reduce the possibility of fungicide resistance. Limit the number of times at-risk fungicides are used during a growing season. Alternate at-risk fungicides with different fungicide groups. These are general principles that can help to reduce but not eliminate risk. A fungicide-resistant pathogen population can still develop when these principles are practiced.

Table 22. Fungicides for Wheat Foliage Diseases.

DISEASE	CHEMICAL AND FORMULATION	RATE PER ACRE	REMARKS AND PRECAUTIONS
Stagonospora Leaf and Glume Blotch, Leaf Rust, Stripe Rust, Powdery Mildew, Tan Spot	Azoxystrobin Quadris	6.2-10.8 oz.	Apply after Feekes 6 but not later than Feekes 10.5. Do not harvest treated wheat for forage. A crop oil concentrate adjuvant may be added at 1.0% v/v to optimize efficacy.
	Metconazole Caramba	10-14 oz	Maximum number of applications per season=2; Minimum time from application to harvest=30 days
	Propiconazole Tilt Propimax	4 ozs.	Tilt can be applied until heading stage (Feekes 10.5). Do not apply Tilt after this growth stage to avoid possible illegal residues. Tank mixes of half rates of Tilt + Quadris are also effective.
	Propiconazole-azoxystrobin Quilt	7-14 oz	Applications may be no closer than a 14 day interval. Quilt can be applied up to Feekes growth stage 10.5.
	Propiconazole-trifloxystrobin Stratego	10 oz.	Do not apply more than 2 applications of Stratego per season. Do not apply after Feekes 10.5
	Prothioconazole Proline	4.3-5 fl oz	For optimum disease control, the lowest labeled rate of a spray surfactant should be tank mixed with Proline. Up to two applications of Proline can made per year.
	Prothioconazole + Tebuconazole Prosaro	6.5 - 8.2 fl. oz	Begin applications preventively when conditions are favorable for disease development. For optimum disease control, the lowest labeled rate of a spray surfactant should be tank mixed with Prosaro.
	Pyraclostrobin Headline	6-9 oz.	Apply no later than Feekes 10.5
	Pyraclostrobin + Metconazole Twinline	7-9 fl oz	Do not apply more than 2 applications per season. Do not apply after Feekes 10.5
	Tebuconazole Folicur	4 fl oz	Folicur is not longer manufactured (2009). No end-user restrictions for disease control. Use until supply lasts. Not labeled for Powdery mildew control.

Economic yield response to control wheat diseases is most likely to occur in fields with yield potentials of more than 50 bu/A and varieties with fair to poor resistance. *Always follow label instructions, recommendations and restrictions.*

Effectiveness of Foliar Fungicides for Control of Wheat Diseases

Trials were conducted at Plains and Griffin during the past 20 years to test the efficacy and timing of fungicide application on disease-susceptible wheat cultivars. During this period there has been a shift from protectant fungicides that only prevented new infections to systemic fungicides that can eliminate an existing infection and provide protection for three weeks or more. Conditions of the tests represent a range of cultivar susceptibility and yield potential, timing of fungicide application (from flag leaf emergence to full heading), and environmental conditions favoring disease. They give an accurate estimate of the full range of crop conditions that might be encountered in Georgia. All were in high yield potential management systems.

Thirty-five fungicide treatments over a span of 17 years resulted in statistically significant yield increases in response to leaf rust, and sometimes to powdery mildew and Stagonospora blotch. The average yield of controls was 67 bu/A and the average yield increase due to fungicide treatment above the controls was 9.2 bu/A or an average increase of 14.1%. In 54% of the cases, test weight was maintained at a higher level than the controls with disease. The average return was 1.5-2.5 times the cost of fungicide application.

Assuming \$15.00/A cost of fungicide application:

<u>Yield increase X Price/bu = Return Profit/A</u>			
9.2	\$2.50	\$23.00	\$ 8.00
9.2	\$3.00	\$27.60	\$12.60
9.2	\$3.50	\$32.20	\$17.20
9.2	\$4.00	\$36.80	\$21.80

If yield was not increased significantly, mostly due to weather conditions unfavorable for disease after fungicide application, there was still an average 3.9 bu/A yield increase above the control for leaf rust and Stagonospora blotch. These results are based on 41 control and 168 fungicide treatments over 16 years.

<u>Yield increase X Price/bu = Return Profit/A</u>			
3.9	\$2.50	\$ 9.75	-\$5.25
3.9	\$3.00	\$11.70	-\$3.30
3.9	\$3.50	\$13.65	-\$1.35
3.9	\$4.00	\$15.60	\$0.60

Test weight was improved 11.7% of the time. Even in years when disease develops only moderately or fungicide application is less than optimal, increased yield and some protection of test weight will pay most or all the cost of fungicide application on a disease susceptible cultivar.

MAKING SPRAY JUDGEMENTS

Scout each individual field beginning at growth stage 5 on a weekly basis. At, or just before stage 7, make a disease evaluation. Then use the point guide to determine the need to spray.

If a "zero" is indicated in any major category (I-VII), then it will probably not be profitable to spray.

Total Points

Chances of Economic Return

575 +	=	Good
425 - 574	=	Fair
Below 425	=	Poor

When to spray: Generally the most effective time for fungicide application is at flag leaf emergence (Feekes stage 8-9). Applications through stage 10.5 (heading complete) may be beneficial, particularly for control of *Stagonospora glume blotch*. Refer to the fungicide label for timing of application.

WHEAT FOLIAR FUNGICIDE POINT SYSTEM

This system should be used only as a guide to determine the need for application of foliar fungicide. It does not guarantee an economical return.

I. YIELD POTENTIAL	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">40 bu/A or more</td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">150</td> <td style="width: 10%;"></td> </tr> <tr> <td>2.</td> <td>35-39 bu/A</td> <td style="text-align: right;">=</td> <td style="text-align: right;">50</td> <td></td> </tr> <tr> <td>3.</td> <td>Less than 35 bu/A</td> <td style="text-align: right;">=</td> <td style="text-align: right;">0</td> <td style="text-align: right;">I. _____</td> </tr> </table>	1.	40 bu/A or more	=	150		2.	35-39 bu/A	=	50		3.	Less than 35 bu/A	=	0	I. _____															
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II. NITROGEN FERTILIZATION	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">Applied 90-120 lbs N/A</td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">100</td> <td style="width: 10%;"></td> </tr> <tr> <td>2.</td> <td>Applied 60-90 lbs N/A</td> <td style="text-align: right;">=</td> <td style="text-align: right;">50</td> <td></td> </tr> <tr> <td>3.</td> <td>Applied no nitrogen</td> <td style="text-align: right;">=</td> <td style="text-align: right;">0</td> <td style="text-align: right;">II. _____</td> </tr> </table>	1.	Applied 90-120 lbs N/A	=	100		2.	Applied 60-90 lbs N/A	=	50		3.	Applied no nitrogen	=	0	II. _____															
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IV. DISEASE AT STAGE 7 (Second Node Just Visible)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">Severe (rust, powdery mildew or Stagonospora on all leaves)</td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">100</td> <td style="width: 10%;"></td> </tr> <tr> <td>2.</td> <td>Moderate (bottom and middle leaves diseased)</td> <td style="text-align: right;">=</td> <td style="text-align: right;">75</td> <td></td> </tr> <tr> <td>3.</td> <td>Light (disease on bottom leaves only)</td> <td style="text-align: right;">=</td> <td style="text-align: right;">50</td> <td></td> </tr> <tr> <td>4.</td> <td>No visible foliage disease</td> <td style="text-align: right;">=</td> <td style="text-align: right;">25</td> <td></td> </tr> <tr> <td></td> <td>If rust, or two or more diseases are present, add</td> <td style="text-align: right;">=</td> <td style="text-align: right;">25</td> <td style="text-align: right;">IV. _____</td> </tr> </table>	1.	Severe (rust, powdery mildew or Stagonospora on all leaves)	=	100		2.	Moderate (bottom and middle leaves diseased)	=	75		3.	Light (disease on bottom leaves only)	=	50		4.	No visible foliage disease	=	25			If rust, or two or more diseases are present, add	=	25	IV. _____					
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V. SEASONAL RAINFALL PRIOR TO TODAY	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">Above normal</td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">100</td> <td style="width: 10%;"></td> </tr> <tr> <td>2.</td> <td>Normal</td> <td style="text-align: right;">=</td> <td style="text-align: right;">75</td> <td></td> </tr> <tr> <td>3.</td> <td>Below normal</td> <td style="text-align: right;">=</td> <td style="text-align: right;">25</td> <td style="text-align: right;">V. _____</td> </tr> </table>	1.	Above normal	=	100		2.	Normal	=	75		3.	Below normal	=	25	V. _____															
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VII. DISEASE RESISTANCE OF VARIETY GROWN (Enter a value for each disease)	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 85%;"></th> <th style="width: 10%; text-align: center;"><u>Good</u></th> <th style="width: 10%; text-align: center;"><u>Fair</u></th> <th style="width: 10%; text-align: center;"><u>Poor</u></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Leaf Rust</td> <td style="text-align: center;">0</td> <td style="text-align: center;">50</td> <td style="text-align: center;">100</td> <td style="text-align: right;">1. _____</td> </tr> <tr> <td>2.</td> <td>Powdery Mildew</td> <td style="text-align: center;">0</td> <td style="text-align: center;">25</td> <td style="text-align: center;">50</td> <td style="text-align: right;">2. _____</td> </tr> <tr> <td>3.</td> <td><i>Stagonospora nodorum</i> Leaf Blotch</td> <td style="text-align: center;">0</td> <td style="text-align: center;">25</td> <td style="text-align: center;">75</td> <td style="text-align: right;">3. _____</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">VII. _____</td> </tr> </tbody> </table>			<u>Good</u>	<u>Fair</u>	<u>Poor</u>		1.	Leaf Rust	0	50	100	1. _____	2.	Powdery Mildew	0	25	50	2. _____	3.	<i>Stagonospora nodorum</i> Leaf Blotch	0	25	75	3. _____						VII. _____
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VIII. PRICE OF WHEAT	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 85%;">\$2.50/bu</td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">25</td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td>\$3.00/bu</td> <td style="text-align: right;">=</td> <td style="text-align: right;">50</td> <td></td> </tr> <tr> <td></td> <td>\$3.50/bu</td> <td style="text-align: right;">=</td> <td style="text-align: right;">75</td> <td style="text-align: right;">VIII. _____</td> </tr> </table>		\$2.50/bu	=	25			\$3.00/bu	=	50			\$3.50/bu	=	75	VIII. _____															
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TOTAL POINTS	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 85%;"></td> <td style="width: 10%; text-align: right;">=</td> <td style="width: 10%; text-align: right;">_____</td> </tr> </table>		=	_____																											
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