CEREAL RUST BULLETIN

Report No: 1
April 30, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
U. S. DEPARTMENT OF AGRICULTURE
(In cooperation with the Minnesota Agricultural Experiment Station)

The winter was warmer with near average precipitation and continued later in the spring than normal in the southern cereal-growing areas. A severe freeze on March 1 killed some spring planted cereals and severely damaged the foliage of wheat planted in much of Texas. Rain is needed in the Texas Panhandle where high winds have depleted top soil moisture. The condition of the Kansas wheat crop remains good to excellent except for the central and south central region where the condition is poor to fair. The 90-degree temperatures in the eastern Dakotas and western Minnesota during the past week accelerated small grain planting.

The three major winter cereal growing areas of Mexico were visited last month. In the irrigated area just south of the Texas border, the crop is in excellent condition. In the high valleys of the El Bajio area, the acreage was greatly reduced due to lack of irrigation water during the winter but the existing crop is in good to excellent condition. Along the western coast, record wheat yields are expected.

Wheat stem rust--By April 25, no stem rust was reported in the U.S. Trace amounts of stem rust existed on susceptible cultivars in Mexican nurseries; however, no stem rust was observed in the commercial fields. The most severe rust was at Celaya in the El Bajio area on early planted susceptible material where severities of 80% were observed.

Wheat leaf rust--In the first week of April, leaf rust was light on the cultivars of Milam and Nadadores 63 in commercial fields south of San Antonio, Texas. Some losses may occur on these cultivars in late planted fields. Leaf rust was severe in nurseries of Giddings, San Antonio, and College Station, Texas. In late March, traces of leaf rust were found in northeastern Kansas (Sim).

Oat stem rust--The only collection of stem rust in the U.S. was made on March 31 at the nursery near Beeville, Texas. This is the least amount of oat stem rust observed in this area by this date in many years. Traces of stem rust existed through northeastern Mexico and the El Bajio regions in commercial fields and on wild oats.

Oat crown rust--In early April, crown rust was light in south Texas commercial fields and heavy on susceptible cultivars in nurseries. In northeastern Mexico, crown rust was severe in susceptible nursery plots but scarce in commercial fields.

Barley stem rust--Traces of stem rust were observed on barley in the nursery at Celaya, Mexico.

Barley leaf rust--Traces of barley leaf rust were observed in the south Texas nurseries. There is much less rust this year than a year ago. In Mexico, leaf rust was observed in moderate amounts on late maturing lines. Most commercial fields are mature.

In 1980, south Texas is not a major source of wheat stem and leaf rust inoculum for the U.S. wheat growing areas. Oat stem rust is expected to be light in 1980. Some late fields in south Texas may have some rust if inoculum arrives from Mexico. Oat crown rust should be less than in 1979 if normal conditions prevail. By the end of April, crown rust could be severe in late fields in south Texas.

CEREAL RUST BULLETIN

Report No: 2
May 13, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

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SCIENCE AND EDUCATION ADMINISTRATION
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Small grain development remains 1-2 weeks behind normal throughout the southern U.S. Soil moisture shortages were reported across the Great Plains. Small grain planting in the northern U.S. is ahead of 1979 and the average planting date. Much of the remaining unplanted area needs rain before planting is feasible and some showers occurred in this area in the past few days. Projected wheat yields in the main production area of north central Texas are below average.

Wheat stem rust--By May 12, no wheat stem rust was reported in the U.S. or in commercial fields in Mexico.

Wheat leaf rust--Leaf rust severities were variable in the southern wheat nurseries. As in 1979, leaf rust was severe on trap plots of McNair 701, which has Lr9 (Transfer resistance). In the Arthur type wheats, leaf rust was moderate to severe and generally more severe than 1979. A mild winter and a wet cool spring after a considerable increase of leaf rust in the fall contributed to the current heavy leaf rust severities. In a few southeastern commercial wheat fields 20% severities were reported, but losses will be minimal due to warm temperatures and rapid crop development. Leaf rust was severe in nurseries at Temple and McGregor, Texas, but only traces of leaf rust were observed in a few north central Texas commercial fields. Traces of leaf rust were reported in nurseries as far north as Stillwater, Oklahoma (Gough).

Wheat stripe rust--In western Washington, wheat stripe rust is prevalent on susceptible cultivars but is not a problem on the commonly grown cultivars (Line).

Oat stem rust--Collections of oat stem rust were made in nurseries at Beeville and Giddings, Texas (McDaniel). In south Texas oat stem rust increased from a few pustules in early April to traces by early May when the oats were mature. Oat stem rust losses will be light in Texas. A collection of stem rust was made from Avena fatua in Yolo County, California. The first stem rust collection made this year from a nursery in Beeville, Texas was identified as race NA 5. Isolates from collections made in Nuevo Leon, Mexico were identified as race NA 27.

Oat crown rust--Crown rust severities ranged from trace to 60% in small grain varietal plots from North Carolina to Texas. Crown rust was severe, in plots at Giddings, Texas, but developed slowly and did not severely damage most cultivars. Only traces of crown rust were observed in commercial oat fields.

Barley leaf rust--Leaf rust was light in some varietal plots in southern U.S.

Rye and triticale leaf rust--Traces of leaf rust were observed on experimental plots of triticales and rye in the southern states.

Other diseases--Wheat: In the southeastern states Septoria nodorum (glume blotch) was severe in many of the cultivars grown in the nurseries and in commercial fields. Losses will occur in some fields. Erysiphe graminis (powdery mildew) is more severe in northern Georgia than in the previous five years (Cunfer). Mildew is heavy in some western Washington small grain plots. Oats: Septoria foliage blight was light to moderate in the southern states and a few scattered locations with oat red leaf were also observed.

CEREAL RUST BULLETIN

Report No: 3
May 28, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
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The wheat harvest was under way in south Texas but now has been delayed by rains. Most Oklahoma and Kansas wheat growing areas have adequate moisture with crop maturity 2-4 weeks behind normal. Nearly all of the small grains have been planted in the northern Great Plains; however, dry topsoil hindered germination, emergence, and growth. In many areas, no moisture has fallen since planting.

Wheat stem rust--By May 27, no wheat stem rust was reported anywhere in the U.S. Normally by this date traces of stem rust have been reported in southern Kansas commercial fields and moderate severities on susceptible cultivars in Kansas nurseries. Isolates from collections made in the Celaya, Mexico, nursery were identified as 151-QSH, 113-RPQ, and 151-QCB. A few isolates obtained from collections made near Monterrey, Mexico, were races 151-QSH and 29-HJC.

Wheat leaf rust--Leaf rust is spreading throughout the grain growing areas in northern Alabama, Georgia, and the Carolinas. Traces of leaf rust were observed in northern Oklahoma and southern Kansas nurseries and in a few Oklahoma commercial fields.

Oat stem rust--This year collections of oat stem rust have been made in nurseries at Beeville, Giddings, and College Station, Texas (McDaniel); and Tifton, Georgia (Morey). A single stem rust collection was made in a farmer's field in Dewitt County, Texas. The Beeville, Texas, nursery collection has been identified as race NA 5. Isolates from collections made at Celaya, Mexico, were race NA 27 (56%), NA 16 (27%) and NA 5 (17%). Isolates identified from collections made in the area around Monterrey, Mexico, were race NA 27 (100%).

Crown rust--The rains of May 19-20 created conditions for teliospore germination which resulted in heavy pycnia infection on the buckthorn leaves at the St. Paul, Minnesota nursery.

Other diseases--*Erysiphe graminis* (powdery mildew) is severe in North Carolina fields (Newton) and *Septoria nodorum* is a problem in early planted fields. On a survey throughout northern Oklahoma and southern Kansas, *Septoria tritici* and *Pyrenophora trichostoma* were observed in light to moderate amounts in commercial fields. Traces of barley yellow dwarf, powdery mildew, and Cephalosporium stripe were also found on wheat. Local areas have been moderately to severely damaged by wheat streak mosaic and soil borne mosaic.

CEREAL RUST BULLETIN

Report No: 4
June 10, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
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The wheat harvest is progressing into northern Texas. The Kansas crop is 10 days behind normal, with northern Kansas 3-4 weeks from harvest. Most of the small grain crop is under drought stress in the Northern Plains. Even with the recent rains, some of the Northern Plains small grains have already suffered irreversible damage, greatly reducing their yield below normal potential.

Wheat stem rust--By June 10, no wheat stem rust was reported anywhere in the U.S. Normally by this date wheat stem rust has been reported as far north as northeast Kansas and southeast Nebraska.

Table 1. Mean date (1921-1964) wheat stem rust first reported at selected locations.

North Central Texas	May 1	East central South Dakota	June 16
Northeast Kansas	May 28	Southeast Minnesota	June 19
Southeast Nebraska	June 5	Southeast North Dakota	June 24

Table 2. A summary of the races identified from wheat stem rust collected from non-inoculated areas in Mexico, 1980.

Area	Number of Collections	Number of Isolates	Physiologic race 151 QCB	151 QSH	113 RPQ	29 HJC
Monterrey	1	3		2		1
Celaya	13	38	5	6	27	

Wheat leaf rust--Traces of leaf rust were reported throughout the state of Kansas. Little yield loss is expected because of the light infection and late appearance of the rust. The first report of leaf rust in the Dakotas was in a south-central South Dakota winter wheat field in late May.

Wheat stripe rust--Stripe rust was observed on the flag leaves of dryland and irrigated wheat in south central Washington (Johnson).

Oat stem rust--Since the last report, oat stem rust collections were made in nurseries at Baton Rouge, Louisiana and McGregor, Dallas, and Temple, Texas. Normally by this date, oat stem rust has been reported as far north as southern Kansas.

Table 3. Mean date (1940-1979) oat stem rust first reported at selected locations and 1980 occurrence.

	Mean	1980		Mean
South Texas	Mar. 16	Mar. 31	Southeast Nebraska	June 23
Central Texas	Apr. 17	May 8	Central Iowa	June 26
North central Texas	May 6	May 28	Southern South Dakota	July 9
Northeastern Kansas	June 12		Southern Minnesota	July 21

Table 4. Preliminary data from the 1980 oat stem rust survey.

Area	Number of Collections	Number of Isolates	NA Races 5	16	23	27
Monterrey, Mexico	3	9				9
Celaya, Mexico	5	15	3	5		7
Cd. Obregon, Mexico	1	2		2		
Beeville, Texas	20	52	26	2	11	13
Tynon, Texas	7	21				21
Cuero, Texas	1		3			

Crown rust--Early development of this disease was noted in Wisconsin and Minnesota oat fields where buckthorn occurs along the borders of the fields.

Barley leaf rust--Barley leaf rust was found on mature barley stems in Delaware (Helbig).

Rye leaf rust--Rye leaf rust was found on stems in central Wisconsin and Delaware (Helbig).

Barberry--The first barberry aecial collections of 1980 were made May 27 in Columbia, Wisconsin (Krueger and Biederman), and May 29 in Monroe County, West Virginia (Bostic). This is two weeks later than last year.

CEREAL RUST BULLETIN

Report No: 5
June 24, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
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Winter wheat maturity remains 7 to 10 days late throughout the central Great Plains. Much of the wheat in Oklahoma and Kansas is ripe, but rains have delayed harvest in many areas. Hail has caused some severe local damage in the central Great Plains. Current high temperatures, although favorable for harvest, may cause some grain shriveling. Some rains in the northern Great Plains in the past two weeks have improved the moisture conditions. In general, however, moisture remains short throughout much of the Dakota's and northwestern Minnesota.

Wheat stem rust--Stem rust has developed in a late planting at Navidad, Nuevo Leon, Mexico (Acosta 6-6-80). Rust has developed there since early April and was most likely from exogenous inoculum. The first stem rust observed in the U.S. in 1980, was at Dallas, Texas on June 10, 16 days later than normal. Only a couple of pustules were observed. A single infected leaf with two ages of pustules was found at Manhattan, Kansas on June 16 (Eversmeyer). The initial infection must have occurred in early June. Thus, the initial infection may have sporulated near the normal time, however, it was very sparse and was undetected. On June 16-17, stem rust was observed on trap plots of McNair 701 and Red Chief at Norton, Kansas, and Clay Center and Lincoln, Nebraska. These infections were generally of two ages. Thus, stem rust is now present in sparse amounts in the central Great Plains. The only known source of stem rust is Mexico. The rust arrived too late and is much too infrequent and scant to present any threat to this year's U.S. wheat crop.

Wheat leaf rust--Leaf rust severities ranged from trace-40% in winter wheat varieties throughout southern Nebraska and northern Kansas. There is less leaf rust in northern Kansas and southern Nebraska commercial fields than last year. Traces of leaf rust were found in south and west central Minnesota nursery plots. We have looked at the virulence of a few collections in our epidemiology studies which is shown in Table 1.

Table 1. Virulence of leaf rust in various epidemiological areas (preliminary results).

Area	UN races detected	Virulence for Lr				
		9	19	16	17	24
Mexico, northeast	2, 13	X	0	0	0	X
Mexico, central	9, 13, 17	0	0	0		0
Mexico, northwest	2, 9	0	0	0	X	0
Alabama	2, 3, 6	X	0	0	0	0
Georgia	2, 6	X	0	0		0
Florida	2		0	0	0	0
Louisiana	2, 3, 6	X	0	0	0	0
Mississippi	6	X	0	0	0	0
Texas	2, 3, 6	X	0	0	0	0

X = virulence 0 = avirulence

Oat stem rust--Oat stem rust is present as far north as Brookings, South Dakota. Traces of rust were found in oat varietal plots at Belleville, Kansas and Brookings, South Dakota and a commercial field in southern Oklahoma. Disease severities should be light except if the initial infection was more frequent than it now appears. Only late fields have any risk of being damaged. Preliminary data from the race survey are as follows:

Table 2. Preliminary data of the 1980 oat stem rust race survey (6-23-80).

Area	Number of collections	No. of isolates of race			
		NA-5	NA-16	NA-23	NA-27
South Texas	42	67	2	11	42
Central Texas	25	8	16		39
Georgia	1				3
Northeast Mexico	9				13
Central Mexico	8	1	5	1	10
Northwest Mexico	10		14		15

Oat crown rust--Traces of oat crown rust exist in southeastern South Dakota. It is anticipated that severities will remain relatively light with little loss expected except possibly in the very late fields.

Rye leaf rust--Leaf rust is moderately severe on lower leaves in trap plots at Rosemount, Minnesota. Although not previously observed, it most likely overwintered there. Spring rye trap plots in Minnesota are rust free.

Other Diseases--Septoria tritici, Pyrenophora trichostoma and Cephalosporium gramineum were observed in small grain fields and varietal plots throughout northern Kansas and southeastern Nebraska. Bacterial leaf diseases are moderately severe on wheat in much of the eastern part of the spring wheat area.

CEREAL RUST BULLETIN

Report No: 6
July 8, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
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The winter wheat harvest is continuing in northern Oklahoma and Kansas and progressing into southern Nebraska. Yields gradually improve to the north across this area with an excellent crop in Nebraska. Warm temperatures and dry weather have hastened small grain development in the northern Great Plains. Poor stands of grains are continuing to be destroyed or used for hay or pasture. Even greater crop losses are likely in spring wheat areas of the USA and Canada if the dry conditions continue.

Wheat stem rust--No further reports of wheat stem rust in the U.S. have been made in the past two weeks. The furthest north known natural infection was in a southern Nebraska susceptible wheat plot. Normally by this date, wheat stem rust has been found as far north as southern North Dakota. The lack of inoculum has prevented stem rust development in the wetter areas of the northern Great Plains; therefore, no losses are foreseen. Severe epidemics have been induced with artificial inoculations at St. Paul and Fargo indicating the weather is not unfavorable at those locations. No race identifications have been completed for the USA by this date due to the absence of rust in the southern states during April and May.

Wheat leaf rust--Leaf rust is light and scattered throughout the north-central grain growing area of the USA. Leaf rust was first found on June 16 in North Dakota at the Casselton Experiment Station on winter wheat (Miller, Statler). In the Pacific Northwest, leaf rust is starting to develop at epidemic levels and damage could be significant in some commercial grain fields (Line).

Wheat stripe rust--Stripe rust is widespread in the Pacific Northwest and with continued cool wet weather could become severe on susceptible cultivars. Heavy losses could result in late planted fields of cultivars with temperature sensitive resistance like Fielder (Line).

Oat stem rust--In the past two weeks oat stem rust was found in nurseries at Urbana, Illinois (Jedlinski); Castana (Browning) and Ames, Iowa (Simons); and in a commercial field in Tippecanoe County, Indiana (Shaner).

Table 1. Preliminary data of the 1980 oat stem rust race survey (7-7-80).

Area	Number of collections	Number of isolates of each race			
		NA-5	NA-16	NA-23	NA-27
South Texas	44	67	2	11	42
Central Texas	81	15	18		208
North Texas	3	3			6
Georgia	1				3
Northeast Mexico	9				13
Central Mexico	8	1	5	1	10
Northwest Mexico	10		14		15

Oat crown nurseries--Traces of oat crown rust were found in the Rosemount, Minnesota trap nursery, on July 3. Again, the lack of inoculum is the principal reason for the scarcity of the disease in east central Minnesota where inoculated plots and the buckthorn nursery are severely rusted.

Rye leaf rust--Leaf rust was found in commercial fields of Summer, Monroe and Greenbriar counties, West Virginia (Bostic), as well as in the small grain disease detection plots in Montgomery, Washington and Rockbridge counties, Virginia (Clement). Leaf rust in east central Minnesota has defoliated the winter trap plots and trace amounts were found in the spring ryes.

Barberry rust--Aecial collections were submitted from Ontario and Quebec, Canada. The early aecial collections from Ontario were identified as rye stem rust.

Barley leaf rust--Leaf rust has not been reported from the spring barley area in the Great Plains. Moderate leaf rust severities exist in the winter barley areas of Pennsylvania, Virginia, W. Virginia, and Delaware. This widespread occurrence and sparcity elsewhere suggests that leaf rust overwintered on winter barley in this general area.

CEREAL RUST BULLETIN

Report No: 7
July 22, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
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Hot dry weather resulted in further deterioration of the small grains in the northern Great Plains. Scattered precipitation fell but generally was too late to help the crops. Development of the small grain crops continued ahead of last year and normal. Initial harvesting has started in the northern Great Plains.

Wheat stem rust--Traces of stem rust were found in winter wheat in plots at Brookings, South Dakota (Wells) and Casselton, North Dakota (Miller), and in a commercial field in Columbia county, Wisconsin (Wallace). Trap plots of susceptible spring wheat Baart were rusted severely at Waseca, moderately at Lamberton, and lightly at Morris in southern Minnesota. No stem rust was found further north. Isolates from the summer spread of rust into northeastern Mexico were identified as race 151-QFB. Races present in the first USA collections will be identified this week from disease found in mid-June.

Wheat leaf rust--Leaf rust is light in commercial fields and light to heavy in susceptible cultivars in plots throughout the north-central states. No losses from leaf rust will occur in this area. Losses will be significant in the Pacific northwest where leaf rust has developed to epidemic levels in most of the winter and spring wheat cultivars (Line).

Wheat stripe rust--Throughout much of the Pacific northwest cool, wet weather created ideal conditions for the development of severe levels of stripe rust on many susceptible cultivars. Losses will be significant in fields of Fielder and Fieldwin spring wheat (Line).

Oat stem rust--Stem rust reached epidemic levels in some central Illinois oat nurseries (Jedlinski). In the past two weeks, rust was found in commercial oat fields throughout eastern South Dakota, northwestern Iowa, and southern Minnesota. Severe rust developed in a single trap plot in west central Minnesota. Traces of stem rust were found on susceptible cultivars in nurseries and on wild oats in southeast North Dakota and adjacent Minnesota. Because of advanced crop maturity, low rainfall, and the small inoculum source in the south, disease severities are low and losses will be very light. However, a few late fields in Minnesota could become severely diseased.

Table 1. Preliminary data of the 1980 oat stem rust race survey (7-22-80).

Area	Number of collections	Number of isolates of each race			
		NA-5	NA-16	NA-23	NA-27
South Texas	44	67	2	11	42
Central Texas	93	18	21		235
North Texas	16	5	8	2	29
Georgia	1				3
Louisiana	2		3		3
Oklahoma	1				3
Kansas	1				3
Northeast Mexico	9				13
Central Mexico	8	1	5	1	10
Northwest Mexico	10		14		15

Oat crown rust--Only a few pustules of crown rust were observed in the northern USA commercial oat fields. Inoculum levels have been low and there will be no loss except for fields near buckthorn.

Barley leaf rust--Barley leaf rust was nearly absent in the spring barley area of the Great Plains except for traces in a few South Dakota fields. A major reason for its scarcity was the lack of a southern source of inoculum.

Barberry rust--The first Minnesota aecial collections of 1980 were made June 23 in Fillmore county (Landon, Schulz, Schlick).

CEREAL RUST BULLETIN

FINAL ISSUE
August 5, 1980

From:
CEREAL RUST LABORATORY
U. S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

Issued By:
SCIENCE AND EDUCATION ADMINISTRATION
AGRICULTURAL RESEARCH
U.S. DEPARTMENT OF AGRICULTURE
(In cooperation with the Minnesota Agricultural Experiment Station)

The small grain harvest has progressed into all areas of the northern Great Plains. Much of the barley and oats have been harvested and the spring wheat harvest is gaining momentum. In areas critically short of moisture, much of the small grain acreage was abandoned, cut for hay, or grazed because of poor grain yield potential.

Wheat stem rust--In 1980, no stem rust overwintering centers were located in the USA; the only known overwintering source of stem rust was Mexico, and inoculum arrived in the USA too late, sparse and infrequent to threaten the wheat crop. The first stem rust was found in Dallas, Texas, on June 10, 16 days later than normal for that location. On June 16, trace amounts of stem rust were found in susceptible wheat plots in northern Kansas and southern Nebraska, where the initial infection had occurred in early June. By mid-July, wheat stem rust could be found in susceptible spring and winter wheat plots and in a few commercial fields in the north central states. Preliminary results of the wheat stem rust survey are shown in Table 1. The two most significant facts are the few number of collections and the absence of race 15-TNM. In the previous 10 years, TNM has had the number 1 ranking as the most frequently identified race but race 151-QFB was the most commonly identified race in Mexico and USA this year. How this change will affect rust populations in 1981 is unknown but it could have considerable impact. The effects that could occur are: 1) the loss of a race (virulence/avirulence combination) from the pathogen population; 2) a change in frequency of races; and 3) a very low level of inoculum initially in 1981.

Table 1. Preliminary data of the 1980 wheat stem rust race survey (8/5/80).

Area	No. of collec.	Percent of isolates of each race							
		15	29	56	113		151		
		TNM	HJC	MBC	RPQ	RTQ	QCB	QFB	QSH
Celaya, MX	11				72		12		16
Ciano, MX	11		3	3		27		67	
Nuevo Leon, MX	2		20					40	40
Northern KS	1							100	
Southern NE	3							66	33
Northern TX	2		50				50		
1980[a/] USA Totals	6	0	17	0	0	0	17	50	17
1979 USA	420	38	2	4	*	2	2	19	9
1978 USA	320	57	*	1	1	4	2	5	11
1977 USA	445	53		*	1	3	5	6	17
1976 USA	671	72		*		1	3	3	3
1975 USA	882	68		*	1	1	7	1	8

a/ preliminary data
* less than .6%

Wheat leaf rust--A mild winter and a wet, cool spring after a moderate increase of leaf rust in the fall contributed to the heavy leaf rust severities in some southern USA nurseries. In this area, losses were light in commercial fields because of disease resistance, the late onset of the disease and the rapid crop development. Resistant cultivars and hot, dry conditions in the northern soft red winter, hard red spring, and durum areas prevented losses in these areas.

Oat stem rust--The first oat stem rust collection in the USA was made March 31 in south Texas. Severities were high in Texas nurseries but stem rust was minimal in

growing area. Disease severities were low and losses were light, however, because of earlier than normal crop maturity, low rainfall, and the low amount of inoculum arriving from the south. The majority of the oat stem rust collections from the Dakotas, Iowa, Minnesota, and Wisconsin, were received within the past 3 weeks and still are being processed for race identification. The frequency of race NA-5 has increased but as more collections from the north are processed, race NA-27 is increasing in frequency.

Table 2. Preliminary data of the 1980 oat stem rust survey (8-5-80).

Area	No. of Collec.	NA-5	NA-16	NA-23	NA-27
Georgia	1				100
Illinois	3		20		80
Indiana	1				100
Iowa	9	16			84
Kansas	1				100
Louisiana	2		60		40
Oklahoma	1				100
South Dakota	1				100
Texas, south	47	54	2	9	35
central	95	6	9		85
north	21	9	32	4	55
Mexico, northeast	9				100
central	8	6	29	6	59
northwest	10		48		52
1980[a/] USA Totals	182	19	9	3	69
1979 USA	501	*	2	*	94
1978 USA	422		12		84
1977 USA	762	1	3		95
1976 USA	386		28	*	66
1975 USA	649		28		67

[a/] preliminary data
* less than .6%

Oat crown rust--In 1980, crown rust development throughout the southern USA was light in commercial fields and heavy on susceptible cultivars in nurseries. Generally, light severities of crown rust were observed in the northern USA commercial oat fields due to lack of inoculum and unfavorable environmental conditions. Losses occurred in late maturing fields and fields near buckthorn.

Barley stem rust--In 1980, little stem rust was observed on barley throughout the USA. This is associated with the low incidence of wheat and rye stem rust.

Barley leaf rust--Barley leaf rust was nearly absent in the winter barley growing area of the southern USA. The lack of a southern source of inoculum accounted for the scarcity of leaf rust in the spring barley area of the northern Great Plains. Leaf rust was common in nurseries in the middle Atlantic coast states.

Rye stem rust--Traces of rye stem rust were found in Minnesota and the Virginias. Puccinia graminis f. sp. secalis was identified from these collections.

Rye leaf rust--Leaf rust severities were moderate to heavy on rye. Losses were light and localized.

Barberry rust--Aecial collections were made in West Virginia, Wisconsin, Minnesota and southeastern Canada during 1980. The majority of the aecial collections were identified as Puccinia graminis f. sp. secalis, although a few Puccinia graminis f. sp. avenae races were also identified. Cumminsiella sanguinea was found on Mahonia sp. in a Michigan nursery (Singh).