CEREAL RUST BULLETIN

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Issued by:

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- Wheat leaf rust in the upper Midwest is at high severities on susceptible winter wheat and is increasing on susceptible spring wheat.
- Wheat stripe rust is widespread in the Pacific Northwest and has stopped throughout the northern plains wheat growing area.
- Oat crown rust is increasing in the northern oat growing area.

The small grain harvest has commenced from eastern Pennsylvania to southern South Dakota. Winter wheat is generally in good to poor condition and ahead of normal maturity throughout most of the U.S. Spring planted small grain crops are ahead of normal maturity throughout much of the area.

Wheat stem rust. There have been no further reports of wheat stem rust since late-May when rust was reported in Baton Rouge, Louisiana and Kinston, North Carolina soft red winter wheat plots**.**

Stem rust observation maps are now available on the CDL website (http://www.ars.usda.gov/Main/docs.htm?docid=9757).

Wheat leaf rust. In late June, plots of susceptible winter wheat cultivars such as Jagalene, in east central Minnesota and east central South Dakota had 60% rust severities, while resistant cultivars had only trace levels of infection on the flag leaves. By late June, spring wheat had leaf rust severities of trace to 1% on lower leaves in southern Minnesota and North Dakota fields (Fig. 1). Susceptible spring wheat cultivars in southern Minnesota plots had 20% rust severities with most infections on the lower leaves.

This year leaf rust is widespread, but at lower levels than normal in the upper Midwest on both spring and winter wheat. Lower amounts of rust inoculum than in previous years arrived from the winter wheat region because of the persistent drought–like conditions in the southern plains which reduced rust infections in the winter wheat. Drier than normal conditions in May and June in many areas of the northern Great Plains has further slowed rust development.

Some of the spring wheat cultivars currently grown have less effective resistance to leaf rust than those commonly grown 10-15 years ago. Many of the wheat fields in the spring wheat region will be treated with fungicide, which will prevent losses due to leaf rust.

This year more leaf rust was found in Ohio than last year. By mid-June, leaf rust was severe on the upper leaves of susceptible cultivars throughout the northern wheat growing areas of Ohio. The first report of leaf rust in Ohio was during the second week in May in south central Ohio, where the

rust may have over wintered. Moisture conditions throughout this area have been conducive for rust development.

As of late June, no wheat leaf rust had been in found New York.

Wheat stripe rust. By the third week in June, traces of stripe rust were found on a few winter wheat cultivars in east central South Dakota and east central Minnesota plots (Fig. 2). Hot weather has stopped rust production in these plots.

The only report of stripe rust this year in Ohio was in a wheat breeding line. Last year stripe rust was found at a number of locations in Ohio.

By mid-June, stripe rust was widespread in eastern Pacific Northwest fields and plots. On June 16, 30% severities were reported on susceptible winter wheat entries and 10% on susceptible spring wheat entries in disease monitoring nurseries at the Pendleton Experiment Station in Oregon. In nurseries near Walla Walla, Washington stripe rust severities reached 100% on susceptible entries in both winter wheat and spring wheat nurseries. Stripe rust was found in commercial spring wheat fields in the Palouse area, where 10% of the plants were infected with severities less than 5% on lower leaves. The wet and cool conditions the first 3 weeks in June were conducive for rust production.

Cool and wet weather the first half of June have been favorable to stripe rust development in Montana winter wheat. In central and east central Montana 15,000 – 20,000 acres of winter wheat have been sprayed with fungicides. There have been sporadic reports of stripe rust spreading to spring wheat, but the severity has been low. It has been dry and warm since the middle of June and stripe rust development has slowed considerably during the latter part of June.

In mid-June, wheat stripe foci of 60-80% severity where observed in winter wheat nursery plots at Winnipeg, Manitoba, Canada. Infections were noted on lower leaves thus indicating that over wintering may have occurred. Very mild winter conditions with adequate snow cover occurred in 2005-2006, and spring temperatures were near normal, which would have been favorable for stripe rust infection.

Oat stem rust. In late June, 20% stem rust severities were observed on 1% of the plants in an oat plot at Lincoln, Nebraska, growing near an irrigated nursery. The initial rust infection occurred 2-3 weeks ago.

Stem rust observation maps are now available on the CDL website (http://www.ars.usda.gov/Main/docs.htm?docid=9757).

Oat crown rust. In the third week in June, trace to 20% severities were observed in fields from northeastern Nebraska, central Minnesota to southern Wisconsin. Most of the infections in this area originated from infected buckthorn (alternate host for crown rust). Crown rust on oat in the buckthorn nursery at St. Paul, Minnesota had severity levels of up to 25-30% on flag leaves.

Barley stem rust. There have been no reports of barley stem rust this year.

Barley leaf rust. In late June, 10% barley leaf rust severities were observed on the upper leaves of winter barley in east central Nebraska plots at Mead and traces on lower leaves in spring barley in southern and east central Minnesota plots.

Stripe rust on barley. On June 16, 30% barley stripe rust severities were observed on susceptible entries in the disease monitoring nurseries near Walla Walla, Washington.

Barley crown rust. By late June, 20% barley crown rust severities were found on lower leaves of spring barley growing in the St. Paul, Minnesota nursery.

Rye leaf rust. In mid June, 60% leaf rust severities were found on the upper leaves of winter rye and trace severities on lower leaves of spring rye in southern and east central Minnesota plots.

Rye stem rust. There have been no reports of rye stem rust this year.

Stem rust on barberry. There have been no new reports of aecial infection on barberry since CRB # 7. Aecial infections were not observed on common barberry plants located in Ithaca, New York.

Rusts on other grasses. In mid-June, 50% severities of stem rust were found in a perennial ryegrass seed production field at Roseau, Minnesota, which is near the Canadian border in northwest Minnesota. High levels of crown rust (caused by *Puccinia coronata* f. sp. *lolii*) also were found in nearby fields of ryegrass. In the third week in June in southern Wisconsin, 40% severities of crown rust infections were observed on quack grass (*Elytrigia repens*). In the buckthorn nursery in St. Paul, heavy crown rust infections were observed on quack grass, slender wheat grass (*Elymus trachycaulus*), western wheat grass (*Pascopyrum smithii*), Russian wild rye (*Psathyrostachys juncea*), Canada wild rye (*E. canadensis*), and foxtail barley (*Hordeum jubatum*). These grasses normally harbor the barley crown rust *(Puccinia coronata* var. *hordei)*. Crown rust infections were also observed on redtop (*Agrostis gigantea*), tufted hairgrass (*Deschampsia caespitosa*), tall fescue (*Festuca arundinacea*), and smooth brome (*Bromus inermis*). Crown rust infections on smooth brome were widespread across Minnesota, Wisconsin, and the Dakotas.

Fig. 1. Leaf rust severities in wheat fields - June 27, 2006

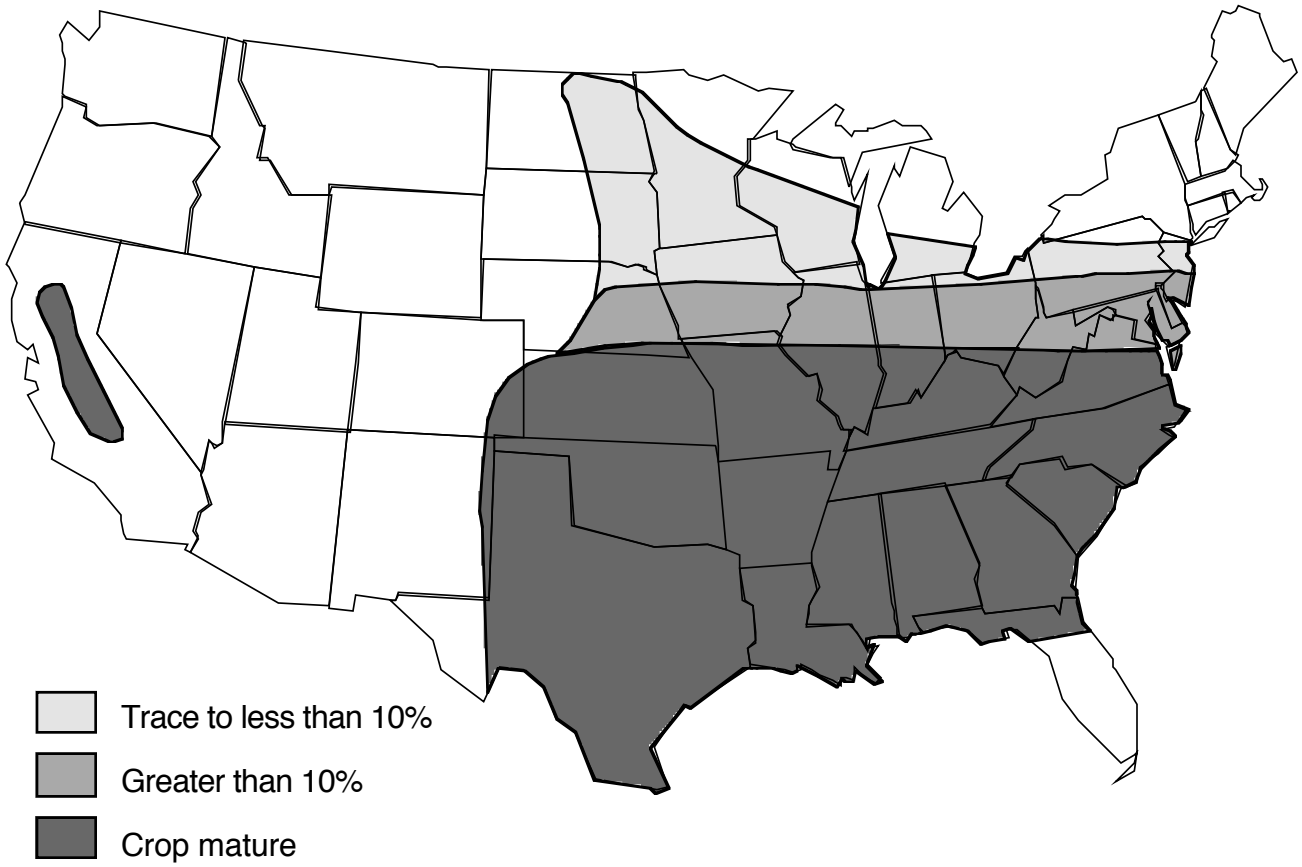

Fig. 2. Stripe rust severities in wheat fields - June 27, 2006