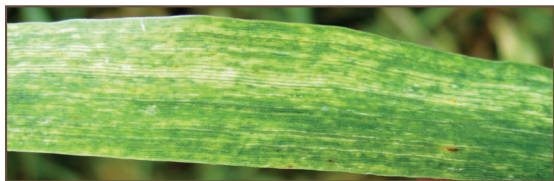


## Virus Identification

### Winter Wheat



#### Mosaic

Young leaves/recent infection



#### Green streaking

Older leaves/aged infection

## Virus Impact

### Barley



### Did you know?

Average yield loss was 62% for fall and 15% for spring WSMV infections compared to non-infected winter wheat (Hunger et al., Oklahoma State Univ., 2004).

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*Winter Cereals: Sustainability in Action* is a joint research and education initiative of Ducks Unlimited and Bayer CropScience. The initiative promotes improving agricultural productivity while maintaining habitat for wildlife by increasing winter wheat acres in the Prairie Pothole Region.



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## Winter Cereals

*Sustainability in Action*

# Wheat Streak Mosaic

## Management Guide



## Wheat Curl Mite Traits

- ▶ Transmits wheat streak mosaic virus.
- ▶ Mites are .01 inch in size.
- ▶ Life cycle is 7-10 days at 75 to 80 degrees.
- ▶ Insecticides/Miticides do not control their spread.
- ▶ The mites spread by wind as the wheat matures. The highest risk fields are those planted zero to 1/2 mile from severely infected fields.

## Mite and Virus Hosts

**Crops Primary:** Wheat, Durum, Barley, Corn - **Seldom:** Rye, Oats, Sorghum and Foxtail Millet

**Weeds** Barnyard Grass, Green Foxtail, Downy Brome, Witchgrass, Crabgrass, Stinkgrass, and Sandbur

## Risk Factors

- ▶ Planting in late August or early September.
- ▶ Planting adjacent to late maturing wheat, volunteer wheat and corn.
- ▶ Warm extended fall.
- ▶ A mild winter with good snow cover increases mite and volunteer survival.
- ▶ Early springs increase mite production.
- ▶ Planting small grains late (May - June).
- ▶ Failure to break the green bridge.

## Management

### “Break the Green Bridge”

- ▶ Destroy volunteer small grain, grass weeds and other WSMV hosts 2 weeks prior to seeding winter wheat with herbicides.
- ▶ Destroy volunteer winter wheat in October or November (best time) or very early spring.
- ▶ Delay planting your winter wheat until mid to late September, and plant your spring wheat early.
- ▶ It's best to avoid wheat-on-wheat rotations and especially avoid planting a spring cereal in prior crop winter wheat fields.

## Wheat Streak Mosaic Cycle

As winter wheat matures, mites move out of protected areas of the plant to the heads and are spread by wind to spring wheat and volunteers. As spring crop hosts mature, mites are spread to early emerging winter wheat.

Mites and the virus overwinter on the winter wheat crop and volunteers to repeat the cycle the following season.

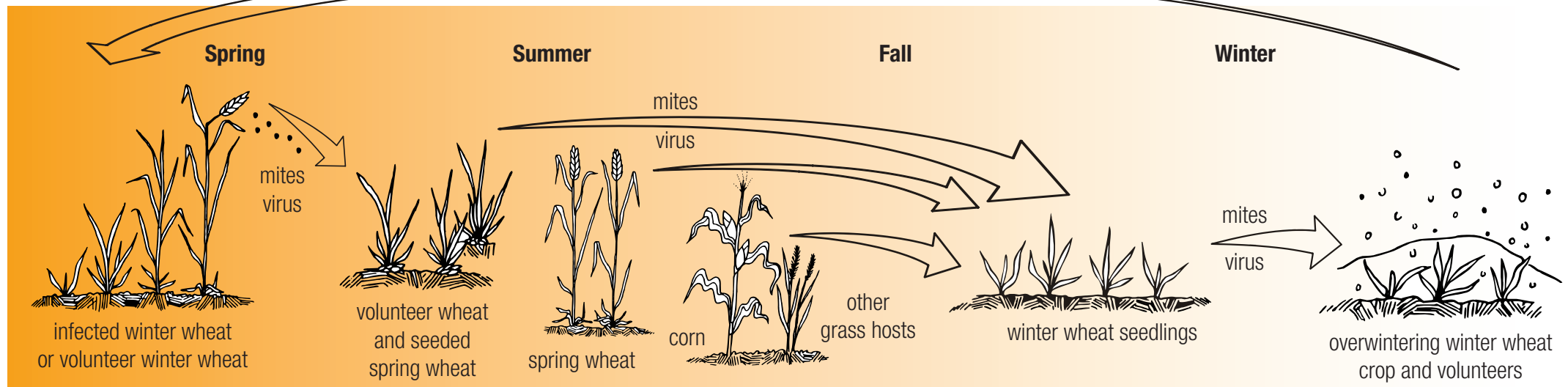


Diagram adapted from NDSU Extension Publication PP-646, Wheat Streak Mosaic (revised 2002)