

# Yellow Leaf Blotch Resistance

*Leptotrochila medicaginis* (Fckl.) Schuepp.

M. D. Rumbaugh and F. A. Gray

## PLANT CULTURE

### Greenhouse

- Container ..... Plant bands, cones, pots, flats, or benches
- Media..... Pasturized or pathogen-free nonsteamed loam soil-sand mixture (2:1)
- Temp/Light..... 20 to 25°C; supplemental light as needed for plant development
- No. of Plants..... 25 or more plants per replication
- No. of Reps..... 4 replications minimum
- Other..... Plants should be spaced 7 to 8 cm apart; prune plants several times to promote branching prior to inoculation

## INOCULUM CULTURE

- Source..... Naturally diseased leaves from infected field grown plants
- Storage..... 40 to 50 leaves are placed between two 10 x 15 cm sheets of plasticized fiber glass window screening; leaves are positioned so that the upper surface of leaves are facing the same direction; the pieces of screen are then sewn together
- Temperature..... 20 to 24°C
- Storage Life..... Store the leaves between the screens outdoors from early summer to late fall until apothecia develop

## INOCULATION PROCEDURE

- Age of Plant..... Two to three months
- Type of Inoc ..... Ascospores discharged from apothecia
- Concentration ..... Variable, dependent upon numbers of leaves and apothecia
- Method ..... A wooden frame, previously constructed on the greenhouse bench, is used to support netting or fencing approximately 10 cm above the plants to be inoculated; screens containing diseased leaves with mature apothecia are wetted and then arranged close together while suspended above the plants; the entire bench is covered with clear, 3-mil polyethylene sheeting to enclose the screens and plants; avoid exposure to direct sunlight; greenhouse temperatures should be 20 to 25°C
- Length..... The diseased leaves between the screens are held over the plants for 48 hours and the plastic sheeting is removed 24 hours later, 72 hours after initiation of the inoculation procedure

## INCUBATION

- Location ..... Maintain infected plants in greenhouse
- Culture ..... Maintain vigorous growth
- Age at Rating ..... Two to three weeks after removing the plastic

## RATING

Because of possible nonuniform inoculations, plants should be scored for leaf symptom type so that valid comparisons can be made between evaluations. Leaves are examined and the plants rated on a scale from 1 to 5. A hand lens may be useful in determining the degree of development of pycnidia.

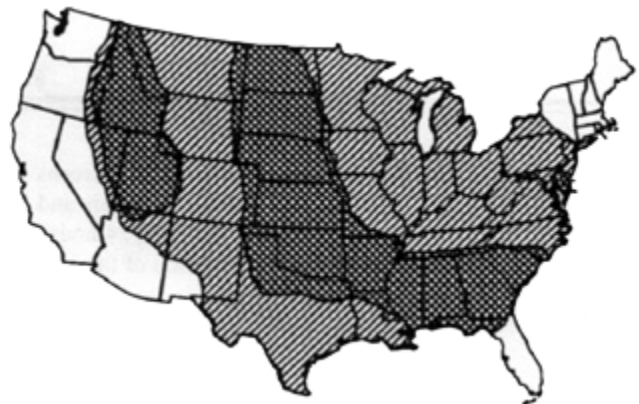
- 1 Resistant.....No evident infection
- 2 Resistant.....Small, dark, circular spots with no chlorosis
- 3 Resistant.....Small, dark, circular spots with chlorosis
- 4 Susceptible .....One or more chlorotic leaf sectors extending from the leaflet edge to the midrib, with incipient pycnidia
- 5 Susceptible .....Most to entire leaflet chlorotic with robust pycnidia and leaf curling

## CHECK CULTIVARS

	Approximate Expected Resistance (%)	Acceptable Range of Reaction (%)
<b>Resistant</b>		
Travois	68	60-75
Vernal	45	30-60
<b>Moderately Resistant</b>		
Ranger	20	10-30

Values for resistant standards include totals of 1's, 2's and 3's.

## DISTRIBUTION AND SEVERITY OF YELLOW LEAF BLOTCH



Yellow leaf blotch, *Leptotrochila medicaginis* (Fckl.) Schuepp.

Click on the map above for a larger version. See also the [KEY](#)

### SCIENTISTS WITH EXPERTISE

Name ..... M. D. Rumbaugh  
Address..... USDA-ARS  
Logan, Utah  
Phone..... 801-750 3077

Name ..... F. A. Gray  
Address..... University of Wyoming  
Phone..... 307-766-3966

### CORRELATION TO FIELD REACTION

Experience indicates a positive association between ratings of clones and cultivars in the greenhouse and those obtained from natural infestations in field environments.

### RACES

There are no known races of *Leptotrochila medicaginis*.

### INOCULATION CONDITIONS AND RANGE OF CONDITIONS

The test is successful only with mature apothecia.

### HELPFUL INFORMATION

This rating system has been used successfully in naturally infected field spaced-plant nurseries. Infected leaves to be used as a source of inoculum may be collected from nonirrigated fields approaching full bloom; usually in mid to late-June. A description of yellow leaf blotch and the fungal pathogen can be found in "A Compendium of Alfalfa Diseases" published by the American Phytopathological Society (1).

### REFERENCES

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