

# Anthracnose Resistance

*Colletotrichum trifolii* Bain & Essary

Nichole O'Neill

## PLANT CULTURE

### Growth Chamber

Container ..... 10-cm plastic pots or flats  
 Medium ..... Potting soil mix  
 Temp/Light ..... 23°C; 16+ hour daylength  
 No. of Plants ..... 50 per replication  
 No. of Reps ..... 14 minimum  
 Other ..... Control insects and fertilize as necessary

### INOCULUM CULTURE

Source ..... Infected stem tissue  
 Storage ..... Soil or silica gel (7)  
 Temperature ..... 4°C  
 Storage Life ..... Up to several years

### INOCULATION PROCEDURE

Age of Plant ..... 7-14 days (take stand counts at 7 days)  
 Type of Inoc ..... Spore suspension with 2 drops Tween per L distilled water, taken from 7 day old cultures incubated at 23°C on half strength oatmeal agar  
 Concentration ..... 2X10<sup>6</sup> spores per mL  
 Method ..... Spray to runoff, approx. 3 mL per pot or 5 to 10 mL per flat; place in mist chamber to maintain 100% R.H. for 48 hours 23°C

### INCUBATION

Location ..... Growth room or greenhouse at 23°C  
 Age at Rating ..... 10 to 14 days after inoculation

### RATING

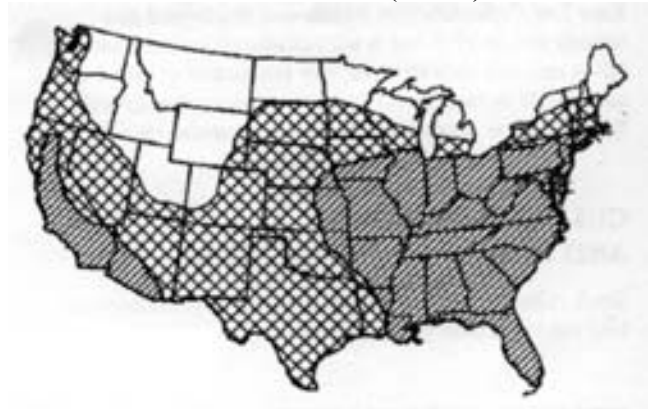
Resistance is assessed as a percent of the stand surviving 10 to 14 days after inoculation.

### CHECK CULTIVARS (Race 1)

	Approximate Expected Resistance (%)	Acceptable Range of Reaction (%)
<b>Resistant</b>		
Arc**	65-70	45-80
Saranac AR**	45	40-60
<b>Susceptible</b>		
Saranac**	1	0-5

Values for resistant standards are percent survivors.

## DISTRIBUTION AND SEVERITY OF ANTHRACNOSE (Race 1)



Anthracnose, *Colletotrichum trifolii* Bain & Essary (Click on the map for a larger version; see the [key](#) here).

### SOURCE OF INOCULUM

Name ..... Nichole O'Neill  
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### SCIENTISTS WITH EXPERTISE

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### CORRELATION TO FIELD REACTION

Cultivars occasionally appear more resistant in the field than indicated by seedling tests, but generally, good correlations are observed between greenhouse and field tests.

## RACES

Race 2 of *Colletotrichum trifolii* was discovered in a limited area in 1978 but is not considered serious. Saranac AR is resistant to both races, Arc is resistant to race 1 and susceptible to race 2, and Saranac is susceptible to both. Saranac AR is approximately 45% resistant to race 2.

## CULTURE OPTIONS AND RANGE OF CONDITIONS

Stock cultures should be maintained because cultures can lose virulence after several transfers.

## HELPFUL INFORMATION

Using mixtures of isolates will minimize error due to differences in virulence among isolates.

## ALTERNATIVE METHODS

Succulent stems of mature plants can be tested for susceptibility by needle inoculation (5). Individual seedlings can be evaluated by cotyledon assay (1). A very young seedling test also gives good results very quickly if only percent resistance is required (3).

## REFERENCES

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