

# Spotted Alfalfa Aphid Resistance

*Therioaphis maculata* (Buckton)

R. C. Berberet, J. L. Caddel, and A. A. Zarrabi

## PLANT CULTURE

### Greenhouse

Container ..... Flat (6 x 31 x 55 cm or similar size)  
 Medium ..... Soil mix (eg. 8 parts sand; 3 peat; 3 perlite; 1.4% by lime)  
 Temp/Light ..... 26+ 4°C and 18 hour daylength  
 No. of plants ..... 50 to 70 per replicate in rows 3 cm apart  
 No. of reps ..... 3 minimum  
 Other ..... Scarify seed and treat with fungicide to prevent damping-off; sow seed 1 cm deep and cover with vermiculite

### APHID COLONY

Source ..... Colony consisting of blend of several field collections from area of adaptation, replenished annually  
 Rearing ..... Susceptible plants in greenhouse (eg. Arc, Caliverde)  
 Temp/Light ..... 26 + 4°C and 18 hour daylength

### INFESTATION PROCEDURE

Age of plant ..... 7 to 8 days after emergence; unifoliolate stage; count plants at time of infestation  
 Method ..... Sprinkle aphids onto plants  
 Rate ..... Minimum of 2 aphids per plant  
 Length ..... Approx. 18 days or when over 85% of susceptible check plants are dead and resistant check is within the expected range; spray with malathion or diazinon to terminate infestation; rate plants 10 to 15 days after spraying

### RATING

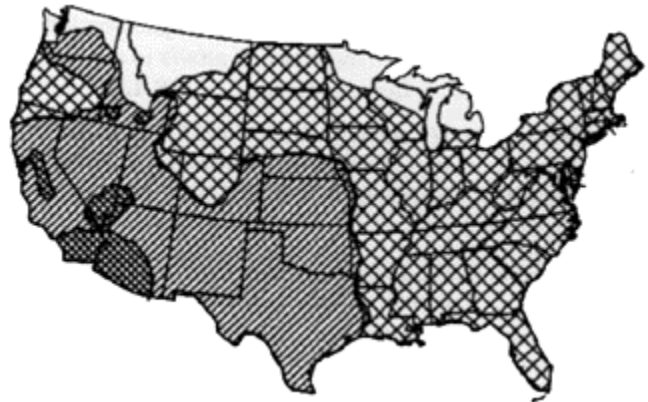
1-2 Resistant ..... Plant has formed at least one trifoliolate (includes plants with both high and moderate levels of resistance)  
 3 Susceptible ..... Plant has developed very little during infestation  
 4 Susceptible ..... Plant living but has formed no trifoliolates  
 5 Susceptible ..... Dead (= total emerged - classes 1 to 4)

## CHECK CULTIVARS

	Approximate Expected Resistance(%)	Acceptable Range of Resistance(%)
<b>Resistant</b>		
CUF-101**	60	45-75
Baker**	50	35-65
Mesa-Sirsa	50	40-60
Kanza	35	30-45
<b>Susceptible</b>		
Caliverde**	3	0-5
Arc**	3	0-5
OK08	3	0-5
Ranger	3	0-5

Values for resistant standards are totals of 1's and 2's. Percentage of plants surviving may be higher but may include many plants with little or no resistance.

### DISTRIBUTION AND SEVERITY OF SPOTTED ALFALFA APHID



Spotted Alfalfa Aphid, *Therioaphis maculata* (Buckton)

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

### SCIENTIST WITH EXPERTISE

Name ..... R.C. Berberet  
 Address ..... Department of Entomology  
 Oklahoma State University  
 Stillwater, OK 74078  
 Phone ..... 405-744-5527

## CORRELATION TO FIELD REACTION

Field performance of alfalfa selected for resistance to spotted alfalfa aphid has conformed closely with expected results based on greenhouse evaluations.

## BIOTYPES

Several biotypes of spotted alfalfa aphid are known to exist in the Southwest, and performance of resistant cultivars may vary depending upon the biotype(s) present. It would be advisable to test cultivars against aphid populations in areas where they will be grown.

## HELPFUL INFORMATION

The best procedure for collecting aphids from fields for colony establishment is tapping from infested stems. Fewer will be injured and chances of including natural enemies will be much reduced compared to sweeping. Field collected aphids should be held in isolation for 2-3 weeks to check for presence of parasites.

## REFERENCES

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