

SPOTTED ALFALFA APHID RESISTANCE

Test accepted: March, 1991

Pest: *Therioaphis maoulata* (Buckton)

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PLANT CULTURE

Greenhouse

Container Flat (6 x 31 x 55 cm or similar size)

Medium Soil mix (eg., 8 parts sand; 3 parts peat; 3 parts 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 Approximately 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

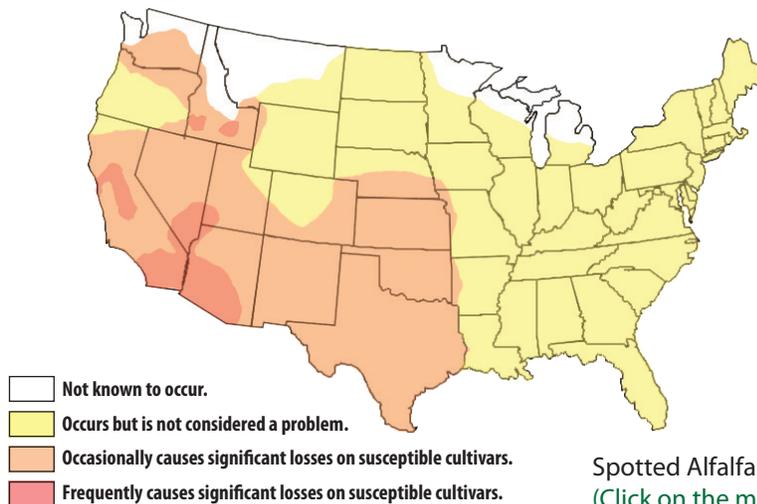
5 Susceptible Dead (= total emerged - classes 1 to 4)

CHECK CULTIVARS

	Approximate Expected Resistance (%)	Acceptable Range of Resistance (%)
Resistant		
CUF-101**	60	45-75
Baker**	50	35-65
Mesa-Sirsa	50	40-60
Kanza	35	30-45
Susceptible		
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. **Checks used by AOSCA Alfalfa and Miscellaneous Legumes Variety Review Board for variety certification.

DISTRIBUTION AND SEVERITY OF SPOTTED ALFALFA APHID



Spotted Alfalfa Aphid, *Therioaphis maculata* (Buckton)
(Click on the map above for a larger version.)

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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