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Publication

Byers, R. A. and W. A. Kendall. 1982. Effects of plant genotypes and root nodulation on growth and survival of Sitona spp. larvae. Environ. Entomol. 11: 440-443.

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Texas Agric. Expt. Stn., Lubbock

T. L. Archer, G. C. Peterson and A. J. Bockholt

Sorghum and Corn Resistance to the Banks Grass Mite

Sorghum tolerance to the Banks grass mite, Oligonychus pratensis (Banks), was associated with plant senescence and maturity. A greater leaf area in late maturity sorghum was associated partially with their tolerance to mites. A relationship between carbohydrates and mite resistance in sorghum has been demonstrated in earlier research. The role of individual carbohydrates is being investigated in these experiments.

A corn nursery of exotic germplasm was evaluated for mite resistance during the summer, 1982. Several lines showed acceptable resistance and additional evaluations will be made in 1983.

Publications

Perring, Tom M., T. L. Archer, J. W. Johnson and J. M. Phillips. 1982. Evaluation of several grain sorghum characteristics for resistance to the Banks grass mite. J. Econ. Entomol. 75:257-260.

Perring, Tom M., T. L. Archer, D. L. Krieg and J. W. Johnson. 1983. The relationship between the Banks grass mite and physiological changes of maturing grain sorghum. Environ. Entomol. (submitted).

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Texas A&M Agricultural Experiment Station and the Plant Sciences Dept., Texas A&M Univ., Corpus Christi

J. H. Benedict, L. S. Bird, J. C. Segers and G. R. Zummo

Resistance in Cotton

Investigations of the glandless character in cotton and its interaction with Heliothis spp. and boll weevil were continued during

the 1982 season. Two large plot free choice field tests with RDC-102 (glandless) and SP-37H (glanded) were conducted to compare insect activity and agronomic performance. Fleahopper damage was consistently greater (27%) on glandless. Also of interest, we found parasitism rates on Heliothis spp. eggs were greater (30%) in the glandless cotton. No differences were found in fruiting rates or final yields at either location.

A no-choice cage experiment was repeated in 1982 for Heliothis spp. resistance in selected cultivars. Parameters studied were bollworm plant damage, larval growth and survival, and relative tannin quality and quantity. Results indicated that certain cultivars were significantly more resistant than other cultivars to bollworm damage; they reduced bollworm growth and survival due to antibiosis/feeding nonpreference. Correlations of tannin quality, quantity, and Relative Biological Activity with bollworm growth and survival, and plant damage, identified the most significant correlations as being between tannin Relative Biological Activity and all insects and plant damage parameters except boll damage. Relative Biological Activity appears to be a useful method of determining relative bollworm resistance between cotton cultivars.

Publications

- Benedict, J. H. 1982. Methods of evaluating cotton for resistance to the boll weevil. Southern Coop. Ser. Bull. (In Press).
- Benedict, J. H., T. F. Leigh and A. H. Hyer. 1982. Lygus hesperus oviposition, behavior, growth and survival in relation to cotton trichome density. Environ. Entomol. (In press).
- Benedict, J. H., T. F. Leigh, W. M. Tingey and A. H. Hyer. 1982. Field and laboratory evaluations of various cottons (Gossypium spp.) for resistance to Lygus hesperus. U.S.D.A. ARM-W-33. 29 pp.
- Parker, R. D. and J. H. Benedict. 1982. Management of cotton insects in south and east Texas counties. Tex. Agric. Ext. Ser. B-1204. 15 pp.
- Zummo, G. R., J. H. Benedict and J. C. Segers. 1982. Effect of a plant growth regulator Mepiquat-chloride (PIX) on host plant resistance to Heliothis zea in cotton. In Proc. Beltwide Cotton Prod. Res. Conf. (In Press).

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