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**ANNUAL PROGRESS REPORT
TO
NORTH CAROLINA PEANUT GROWERS ASSOCIATION, INC.**

TITLE: New Answers for Insect Control in the Absence of New Products
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DEPARTMENT(S): Entomology and Plant Pathology

REPORT:

This project focused exclusively on upgrading the data base for our control recommendations for insect management in peanuts. Two tasks relative to control recommendations have been accomplished. The ranking of cost effectiveness of various strategies has been completed with unbiased field data used to provide recommendations that encourage the use of the products that provide the greatest return on investment and the presentation of data on the return from less efficacious products. This has permitted a complete overhaul of insect control recommendations over the past two years. These edits and changes in recommendations are the result of funding from the North Carolina Peanut Growers Association and these studies would not have been possible without the support of peanut grower funding. The use of a 3 week post plant foliar spray of acephate has also been thoroughly evaluated and the value of this application is now well documented and become a part of standard pest management procedures.

Studies evaluating alternative control programs for southern rootworm were also conducted with marginally successful results. The results indicate a continued need to evaluate more modern insect chemistries for rootworm control due to the likely loss of the old organophosphate insecticide Lorsban (chlorpyrifos). The impact of these treatments on secondary pests such as potato leafhoppers has also been investigated and the data we have collected indicate we have yet to find a suitable replacement for Lorsban.

The final area of investigation is the development of more cost effective control recommendations for caterpillars at mid to late season growth of the peanut crop. The increasing presence of budworms in the crop (which are more difficult to control than earworms), the persistent presence of moderate insecticide resistance in earworm populations, and the changing crop canopy and pest tolerance of newer varieties of peanut have made control decisions for caterpillar control in peanuts more difficult. Our research in 2016 has revealed control programs that address the first two concerns in a cost effective manner, but have also confirmed the need to completely overhaul the caterpillar control recommendations based on the above concerns. These new strategies will be developed in 2017.

IMPACT STATEMENT

The data developed over the past two years have provided the necessary information to complete an overhaul of the peanut insect control recommendations over the past two years. The new control recommendations focus on cost effectiveness and the move towards newer chemistries and move away from the "old standards" that no longer provides the return on investment. The new recommendations are in place in all extension publications for 2017. All changes in recommendations provide a more comprehensive approach to pest control and integrate newer varieties and their inherent qualities and resistance to pest pressure.