

UNIVERSITY OF CALIFORNIA IPM EFFORT IN ALFALFA PRODUCTION

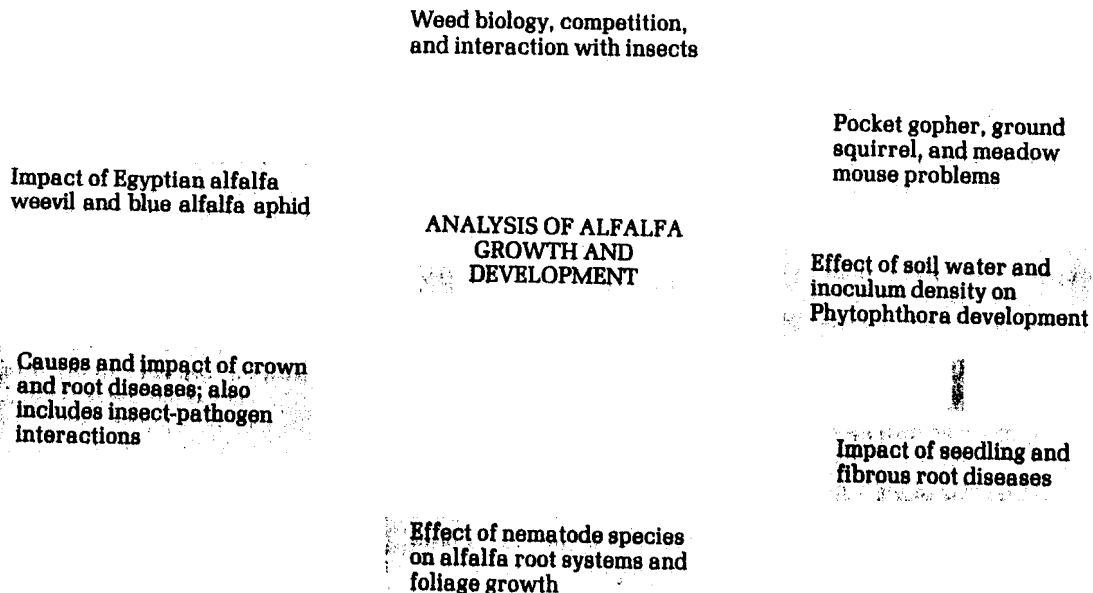
Frank G. Zalom
Extension IPM Specialist
University of California, Davis

The California State Legislature funded the University of California Statewide IPM Project (UC/IPM) to develop, validate and implement IPM practices generated by members of the University's research and extension staff. In its first two years, UC/IPM has developed a structure which permits progress toward achieving these goals in several major crops.

Research

Commodity work groups are the planning units for development in the UC/IPM Project. Members of each group review the status of pest management research, identify data gaps, and solicit and conduct research in their commodity. The Alfalfa Commodity Work Group is chaired by Dr. David Gilchrist, plant pathologist on the Davis Campus, and is composed of research and extension staff systemwide. Interrelationships of sponsored research projects are emphasized, and several interdisciplinary and cooperative studies are in progress. The research goal of the alfalfa work group is to understand how pests affect growth, productivity, and stand longevity under varying environmental conditions. This could lead to a better overall management strategy for maintaining stand productivity.

Alfalfa research linkages



Information Delivery

A major effort of the UC/IPM project is the adaptation and delivery of IPM techniques to growers and PCA's in the major agricultural regions of California. This is being accomplished by the development of a series of IPM manuals, a computerized delivery system, and a Cooperative Extension staff of Area IPM Specialists.

The Integrated Pest Management Manual for Alfalfa Hay was prepared by Dr. Mary Louise Flint in consultation with experiment station researchers, extension specialists, and farm advisors. It is designed to be a field tool for growers and PCA's, providing up-to-date information on pest management and pest identification. The manual is Priced Publication 4104 and is available from Agricultural Sciences Publications of the University of Calif.

The UC/IPM Computer Network will enable UC Farm Advisors to access relevant pest management information including meteorology, degree-day summations, crop management recommendations, and phenological and developmental models. A simulation model for the Egyptian alfalfa weevil is one of the initial programs available on the system. County implementation activities are given priority, but researchers will be allotted computing time for specific IPM research projects.

The extension staff of Area IPM Specialists are responsible for validation and education efforts relative to adapting IPM techniques for field use. Their activities include working through Farm Advisors and PCA's to demonstrate the utility of the research programs. This winter five of the seven Area IPM Specialists are working with extension farm advisors to obtain standardized information on the utility of the Egyptian Alfalfa Weevil model on fields from Butte County to Imperial County. Data obtained in this fashion will permit researchers to analyze factors contributing to any discrepancy in predictions generated by the model. This extension effort is funded in part by USDA-Extension IPM funds.

The components of the UC/IPM alfalfa effort to date include identification of research needs, funding of critical research projects (Table 1), production of an IPM manual for alfalfa hay, development and installation of a model for the Egyptian alfalfa weevil on the IPM computer network, and validation of the Egyptian alfalfa weevil model in the field by extension Area IPM Specialists. The mechanism is in place for the further development, validation, and implementation of IPM systems in alfalfa.

Table 1. UC/IPM Research Efforts in Alfalfa and Principle Investigators

Analysis of Alfalfa Growth and Development

R.T. Travis, Agronomy, Davis Campus
 R.S. Loomis, Agronomy, Davis Campus
 L.R. Teuber, Agronomy, Davis Campus
 D.W. Rains, Agronomy, Davis Campus

Weed Biology and Interactions Between Weeds and Other Pests of Alfalfa

R.F. Norris, Botany, Davis Campus
 R.M. Nowierski, Statewide IPM Project, Berkeley Campus

Egyptian Alfalfa Weevil Phenology, Sampling, Biology, and Impact

C.G. Summers, Entomology, San Joaquin Valley Research and Extension Center

Crown Disease Etiology and Impact and Foliar Pathogen and Insect Impact on Alfalfa Yield Components

D.G. Gilchrist, Plant Pathology, Davis Campus
 L.R. Teuber, Agronomy, Davis Campus
 C.G. Summers, Entomology, San Joaquin Valley Research and Extension Center

Field Sampling Strategies for Phytophthora megasperma and the Effect of Soil Moisture on Inoculum Potential

D. Erwin, Plant Pathology, Riverside Campus

Assessment of Pocket Gopher, Ground Squirrel, and Meadow Mouse Incidence and Impact on Alfalfa Production

W. Howard, Wildlife and Fisheries Biology, Davis Campus
 R. Marsh, Wildlife and Fisheries Biology, Davis Campus
 T. Salmon, Wildlife and Sea Grant, Davis Campus

Seedling and Fibrous Root Disease Impact on Growth, Development and Persistence of Alfalfa

J. Hancock, Plant Pathology, Berkeley Campus

Nematode Etiology, Field Sampling and Impact of Nematodes on Alfalfa

B.F. Lownsbery, Nematology, Davis Campus
 M.V. McHenry, Nematology, San Joaquin Valley Research and Extension Center