

Plant Protection and Pest Management T



Training at the University of Georgia



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Most students at universities in the United States receive rather specialized training. The emphasis on specialization generally increases with each year of training and is greatest at the advanced degree levels, unfortunately sometimes at the expense of breadth of knowledge. At the University of Georgia, members of the faculty in such disciplines as plant pathology, entomology, and weed science realize that knowledge of pest management is increasing through research and is important to many of our graduates, who will be working with plant producers dealing with a variety of pests.

Philosophy of the Programs

The need for economical plant pest control and for compliance with the many laws and regulations designed to protect both people and the environment has led to an increasing demand for persons trained in the broad aspects of plant protection and pest management.

Field trips, such as this one for weed identification, are emphasized in the training program.

Graduates from conventional single-discipline programs do not acquire the training required for total, integrated plant pest management. The two pest management degree programs at Georgia are producing graduates trained not only to take an interdisciplinary approach to the solution of plant protection and pest management problems but also to consider the influence their decisions will have on environmental quality.

The two approaches to pest management training are the "how" and the "how and why." We teach both the theory and the practice of pest management. Our curriculum and instruction are based on the premise that pest managers who understand the theory can adapt to new practices and discard outdated ones.

History of the Programs

The Department of Plant Pathology has offered an undergraduate option in plant protection for about 15 yr. At first, this option varied little from the traditional program leading to a degree in plant pathology that offers only two or three electives in entomology and weed science. After the Resident Instruction Committee on Organization and Policy Workshop on "Systems of Pest Management and Plant Protection" was held in St. Louis, MO, in June 1972, however, the under-

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The plant protection and pest management program at the University of Georgia includes learning the proper techniques of insect scouting.

graduate program was totally revamped to meet the need for students trained in plant protection and pest management.

Faculty participation was obtained from the four disciplines most closely related to plant protection and pest management, namely, agronomy, horticulture, entomology, and plant pathology; nematology is a part of the Department of Plant Pathology. Representatives of these disciplines and the director of resident instruction agreed on a curriculum leading to a bachelor of science degree in plant protection and pest management.

The program developed by this interdisciplinary committee required courses in all four departments, including pest identification and control, toxicology, and soil and tissue analysis, and a new course in integrated pest management. Additional course requirements included chemistry (inorganic and organic), soils, crop science, ecology, plant physiology, genetics, climatology, economics, and statistics. A bachelor of science degree in plant protection and pest management was officially approved by the University in 1974, and the first student was

graduated in June 1975.

In 1973 the director of resident instruction appointed a committee consisting of two members each from the agronomy, horticulture, entomology, and plant pathology divisions. The committee was charged to draft a proposal for a master's degree in plant protection and pest management. The Department of Plant Pathology initiated this move primarily because of the success of the bachelor of science program. Four disciplines in two colleges of the university were involved in developing a comprehensive curriculum that was approved by the Board of Regents in 1974. We believe the interdisciplinary approach is essential to the successful design and operation of a master's degree program in plant protection and pest management.

Administration of the Programs

The bachelor of science program is administered in the Department of Plant Pathology by the undergraduate advisor, and the faculty makes policy decisions. The master's degree program is administered by a graduate coordinator and a

committee composed of one member each from the entomology, agronomy, horticulture, and plant pathology divisions. The committee enforces policies, provides for exceptions to established policies, suggests policy changes, and approves and administers the final written examination. Suggested policy changes are forwarded to the graduate coordinator, who works through the department heads to determine an interdepartmental consensus.

It should be emphasized that with the exception of the internships and the integrated plant pest management course, which is the capstone in the plant protection and pest management curriculum, the courses taken by students majoring in plant protection and pest management are those normally taken in the B.S., M.S., and Ph.D. programs of the different departments. A comprehensive written examination and an oral examination are given. The written examination is prepared by the interdepartmental committee, and the oral examination is conducted by a student's committee. This committee determines whether the student has satisfactorily

completed both examinations and the requirements for graduation.

The Bachelor's Degree Program

Acceptance of the bachelor's degree program has been very good. The broadly based curriculum equips students to fulfill needs in a variety of specialized areas and is ideally a major both in plant protection and pest management and in horticulture or agronomy. The curriculum for plant protection and pest management, although somewhat regimented, has sufficient electives to accommodate the course work requirements of a double major. The program is successful and appears to have good prospects. The program had 14 graduates in 1978, and enrollment at present is stable at 25-30 students.

The Master's Degree Program

Admission requirements. Applicants for the master's degree program must have a baccalaureate degree from an accredited college or university. Qualification is based on academic grade point average (GPA), scores on the Graduate Record Examination (GRE), and letters of recommendation. In 1977 and 1978,

students entering the master's degree program had an average GPA of 3.15 and an average GRE score of 1,100. Applicants who have a poor understanding of pest management but qualify otherwise visit the university for an interview.

It is desirable for applicants to have an academic background in the agricultural or biological sciences, or both. The following courses, or their equivalents, must have been completed during an undergraduate program or be taken during the graduate program: entomology, plant pathology, agronomic or horticultural science, principles of soils, genetics, and principles of ecology.

The curriculum. Students are required to take 62 quarter hours of course work for completion of the program. The core curriculum of 52 quarter hours is designed to give students the technical and practical training needed to diagnose and evaluate plant pest problems, to design integrated pest management programs with a minimum use of pesticides, and to handle pesticides safely. The core curriculum is: principles of chemical weed control, soil fertility, soil microbiology, soil and plant analysis, insect ecology, advanced agricultural entomology, chemistry and toxicology of

insecticides, mycology, diagnosis and control of plant diseases, integrated plant pest management, etiology of plant diseases, plant protection laboratory, and two 3-mo internships.

An additional 10 quarter hours are required as electives in allied fields in keeping with the student's needs and interests. Flexibility is provided by allowing the student to substitute elective courses for core curriculum courses completed as an undergraduate.

Internships. In lieu of research for a thesis, the graduate program in plant protection and pest management requires two 3-mo internships. The first is designed to strengthen the student's background in agriculture and related areas and to provide experience with research techniques. If the student already has experience in these areas, the internship is modified to meet specific needs, for example, a 6-mo internship with the Cooperative Extension Service or a chemical company. The second 3-mo internship is generally spent with a chemical company or the Cooperative Extension Service and provides an opportunity for the student to apply the principles learned in the program of study and during the first internship.

Postgraduate Employment

Agribusiness acceptance of these programs has been very good. Some

graduates are working for chemical companies or state extension programs. Some are employed by other kinds of

private companies or have started their own agribusiness service. A few have returned home to operate family farms.



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