NEW RESEARCH IN PESTICIDE RESIDUES

By George W. Ware

With increasing use of agricultural chemicals in Arizona, particularly the insecticides, herbicides, fungicides and defoliants, the need for additional field and laboratory research also has increased. This need — to insure complete safety for humans, animals and food products — has been met with new research projects and increased research facilities dealing with pesticide residues.

Parts per million (P.P.M.) and parts per billion (P.P.B.) are terms used rather commonly throughout agriculture today, usually with reference to pesticides. These are terms that the Pesticide Residue Laboratory in the Department of Entomology, now in its 10th year of operation, is chiefly concerned with on a practical basis.

Fine Research Projects

There are currently four agriculturally related research projects and one sponsored by the U. S. Public Health Service within the Department of Entomology. The agricultural projects include one dealing with the total fate of chlorinated insecticides in plants, another concerned with drift from aerial and ground applications, a third involves methods of removing residues from marketable products, and the last is directed toward solving residue problems unique to Arizona agriculture.

The research sponsored by the Public Health Service is known as the Arizona Community Pesticides Project, and is conducted on a contract basis by the College of Agriculture for the U. S. Department of Health, Education and Welfare.

This project is directed by Dr. Laurence S. Maynard, M.D., an epidemiologist, and includes one clinical and four analytical chemists. Related to 11 similar research contracts across the nation, the Community Pesticides Project was located at the University of Arizona to study pesticide effects in an arid climate.

New Building Addition

Additional facilities for the expanded pesticide research have been provided by the College of Agriculture with the completion of the underground level in the Agricultural Sciences Building in January. This new space will be occupied primarily by pesticide projects in the Departments of Entomology and Dairy Science.

The role of the entomologist has changed drastically with the development of more sensitive analytical (Continued on Next Page)
DURING A METABOLISM study, the technician adds trace quantities of insecticides to the dairy cow's ration.

(Continued from Previous Page)

methods for pesticides. When the organic insecticides were introduced to agriculture in the mid 1940's, the entomologist utilized fruit flies and mosquito larvae to assay residues biologically, since this was usually the most sensitive method of detection at that time.

Gradually analytical methods improved, while residue analysis remained the responsibility of entomology, until today when we find the chemist-entomologist employing the most sophisticated of analytical methods. These range from electron capture and microcoulometric gas chromatography to atomic absorption spectrometry and neutron activation analysis.

Scrutiny Wider, Deeper

Not only has his research role changed, but also the subject matter. The entomologist-residue analyst now investigates minute traces of pesticides in water, soil, and occasionally air, in addition to the subjects which originally captured his attention, hay, milk and vegetables.

Yuma-Imperial Area's Cotton Costs are Low

Do you know how much it costs to produce a pound of cotton on your farm? In Yuma and Imperial Counties it figures an average of 24.3 cents per pound. This compares with 31 cents in the San Joaquin area and 31.9 cents for the rest of Arizona.

The Yuma-Imperial figure is the lowest in the nation except the Mississippi Delta region of 23.4 cents per pound.

In 1965 a survey was made throughout the United States by USDA to measure the cost of producing upland cotton. For the nation as a whole the average was 29.3 cents.

Surveyed in the Yuma-Imperial area were 190 farms comprising 33,888 acres of cotton. A proportional sample of cotton producers was drawn from each county.

— James Hazlitt, Yuma County Agent

Cochise County
KAWT, Douglas — 6:15 a.m. Mon. through Fri., 12:20 p.m. Monday through Friday
KHIL, Willcox — Mon. thru Fri., 6:05 a.m.

Coconino County
KCLS, Flagstaff — Tues. and Thurs., 8:45 a.m.
KCLS, Flagstaff (Home Agent) — Wed., 10:15 a.m.

Gila County
KIKO, Globe-Miami Monday, 12:45 p.m.

Graham County
KATO, Safford—Sat., 9:30 a.m. Mon. thru Fri., 12:45 p.m. (daily)

Maricopa County
KTAR, Phoenix—Mon. thru Fri., 5:55 a.m.
KOY, Phoenix—Tues. thru Sat., 5:40 a.m.
KHQ, Phoenix—Sunday Garden Club of The Air, 8:35 a.m.
KPHO, Phoenix—Mon., Cotton Report, 12:40 p.m.
KPHO, Phoenix—Thurs., Dairy and Livestock Report, 12:40 p.m.
KUPD, Phoenix—Mon. thru Fri., 5:30 a.m. and 12:30 p.m.

Mohave County
KAAA, Kingman — Mon., 9:06 a.m. (Extension Home Economist)

Nevada County
KDJI, Holbrook — Tues., 12:15 to 12:30 p.m.
KINO, Winslow — Sat., 12:15 to 12:30 p.m.

Pinal County
KPIN, Case Grande—Mon. thru Sat., 6:55 a.m.; Mon and Fri., 9:30 a.m.; Tues., Thurs. 11:30 a.m. on Monday and Wednesday and Sat., 12:20 p.m.

Yavapai County
KYCA, Prescott — Mon., Wed., Thurs. and Fri., 3:45 p.m.
KNOT, Prescott — Mon., Wed. and Fri., 6:25 a.m.
KVIO, Cottonwood—Mon. and Fri., 8:15 a.m.

Yuma County
KVOY, Yuma — Mon. thru Fri., 5:45 a.m.
KYUM, Yuma — Tues., Thurs. and Sat., 6:25 a.m.
KYUM, Yuma — Saturday, 4-H Program, 10:05 a.m.