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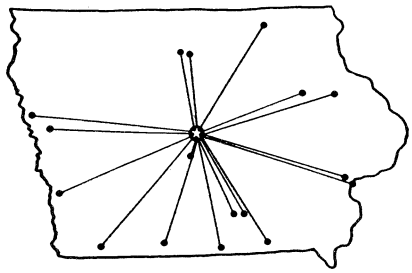


Wildlife, Statistics

Pheasants Nest In Heavy Stand

CONTRARY TO general opinion, pheasants don't necessarily nest along the edges of fields. Wildlife scientists at the Iowa Agricultural Experiment Station have found that the thickness of the stand in the field was a more important factor in nest placement than the distance to the nearest vegetation cover change.

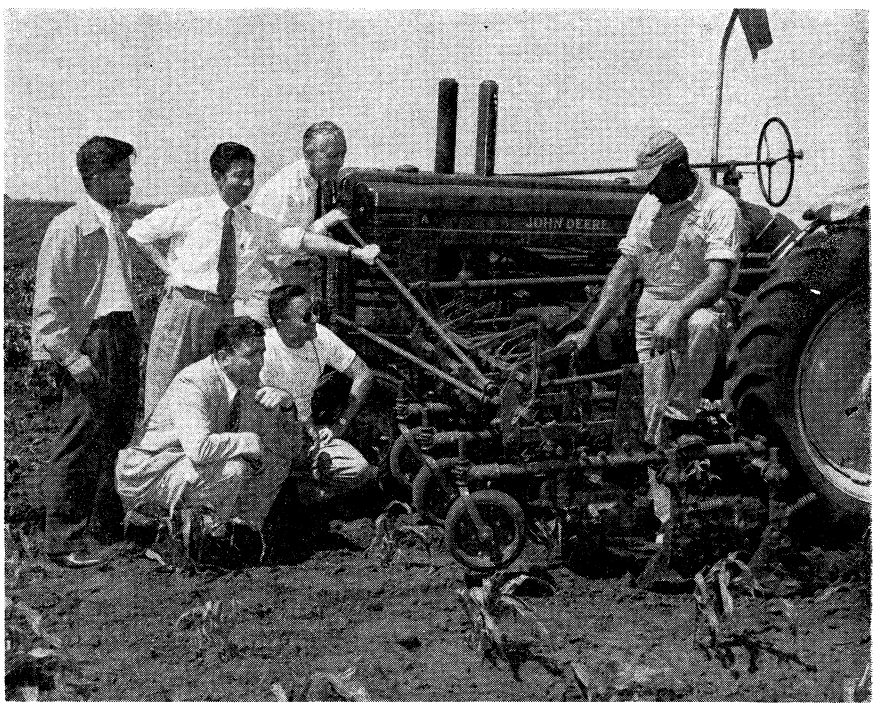
Studies showed that, if the alfalfa stand in a field was heaviest along an edge or corner of the field, this was where most of the nests were found; if the stand was thickest in the center of the field, most of the nests were in this area.

Therefore, the often recommended practice of leaving a strip of unmown hay around the edge of the field to save the pheasants would be of no value in a field where the stand was thickest in the center. A much more reliable method of saving the game is the use of a flushing bar attached to the tractor when mowing.

Science of Statistics Aids Research Work

A GREAT DEAL of statistical know-how and analyzing goes into most of the research done by the Iowa Agricultural Experiment Station. One problem is to decide on the most efficient method of obtaining data for a given piece of research.

In feeding experiments with baby pigs, for example, the statistician may furnish a pattern for the basic plan. Then he may custom-fit it to make best use of experimental materials and meet



Iowa State College attracts many visitors from abroad who come here to study our agricultural methods. Four of the men in this picture visited the college in 1955 to study techniques and procedures used here in collecting agricultural statistics. While here, they visited the farm of Ray Eveland (right foreground) near Kelley. Prof. Emil H. Jebe (standing immediately in front of tractor) of the Department of Statistics acted as their guide. Visitors (l. to r., standing) are Chen-Ling Liang, Taipei, Taiwan, and Choowongse Dhanomkulbutra, Bangkok, Thailand; and, in foreground, Eleftherios Gritsopoulos, Athens, Greece, and Oswald Paul Blaich, Georgetown, British Guiana.

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either time or money limitations.

A small, properly designed sample can be used to represent a much larger situation very closely and to obtain information quickly. Also the cost of getting, say, marketing or other agricultural information from a sample of about 600 Iowa farm operators is considerably less than making a complete "census" of all farmers in the state.

The Statistics Department and Statistical Laboratory at Iowa State College provide computational services and advisory consulting on techniques, experimental design, sample design and conducting of interview surveys, and on statistical analysis and interpretation of experimental and survey data for the research projects of the Experiment Station. In many cases, a statistician is an active co-worker on a particular research project.

Cooperative research between statisticians and other research scientists is a continuous process. Much of it is aimed at reducing the cost of obtaining experimental or survey information — or providing more information for a given cost—as well as improving the "meaningfulness," reliability or accuracy of research results. Sometimes new methods have to be developed specially to meet the demands of a research problem.

A statistical study of methods for getting information in nutrition experiments on chicks and hogs has led to a number of discoveries and changes in procedures. For example, it used to be thought necessary to weigh each individual chick at the beginning of a feeding experiment and at several times during the experiment. Now we know that it is sufficient to weigh each *pen* of chicks being fed a particular ration, rather than the separate chicks—a considerable saving in time when an experiment might involve 320 chicks but only 16 pens.

Statisticians who participate actively on research projects or provide consulting or advisory services include T. A. Bancroft, R. J. Jessen, P. G. Homeyer, Emil H. Jebe, N. V. Strand, Oscar Kempthorne, George W. Snedecor, T. W. Horner, Mary Clem and Gerhard Tintner.

Study Resistance to American Foulbrood

AMERICAN FOULBROOD, a disease which attacks honeybees, is being studied by the Iowa Agricultural Experiment Station in cooperation with the Agricultural Extension Service.

The mechanism of resistance to American foulbrood in honeybees has not been positively identified. Several possible mechanisms of resistance are being investigated. One possibility may be "self-cure." It's possible that nurse bees reared in contact with, but not succumbing to, the disease may be different with respect to disease resistance from those reared in the absence of disease.

Another type of resistance may come from larval immunity. Certain strains of the bees may be born with an immunity to the disease. W. C. Rothenbuhler and coworkers are breeding several generations of disease-resistant bees to investigate this possibility.

Study Wildlife Diseases and Parasites

THE IOWA Agricultural Experiment Station, in cooperation with other agencies, is conducting a survey of the parasites of fish and wildlife. The purpose of this survey is to watch for wildlife diseases which may prove of economic importance. The survey is conducted by Edward L. Kozicky and Paul Bennett.

Save Pheasants With Flushing Bar

A MAJOR proportion of Iowa's pheasants are killed or injured each year by hay mowing. In the fields studied by the Experiment Station, 30 out of 40 cases of nesting hen mortality were due to farm activities. Five out of every six nests were destroyed before they could hatch.

Two types of flushing bars, which can be attached to tractors, were tested at the Experiment Station, in cooperation with other agencies, to check their effectiveness as game savers. The two types tested were the Ohio Flushing Bar, which uses cables and weights to flush the hens, and a bar similar to one developed in Nebraska, which uses 30-inch strips of heavy 6-inch belting painted white. The cables and weights were about 63 percent more efficient than the belt strips in saving hens.

Recent tests with the Ohio Flushing Bar have shown even greater efficiency than earlier tests. There were approximately 75 percent fewer nesting hens killed and injured when this flushing bar was used compared with no bar.