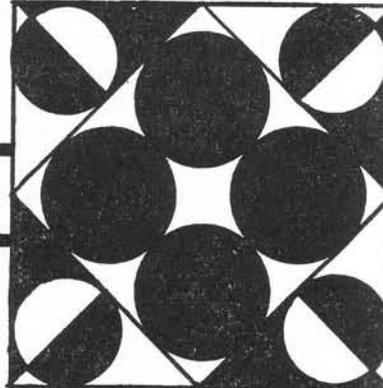


## Idea Corner



### Teaching-Learning Evaluation Program for Soybean Farmers

From 1955 to 1965, Ohio's average soybean yield increased by only one-third a bushel per acre each year. Extension agronomists asked: "Why have soybean yields in Ohio increased so slowly?" In 1965, they decided it was because many farmers weren't using the optimum practices and techniques needed to produce top yields and maximum profits from soybeans.

The problem was probably due to one or both of two possibilities: (1) lack of adequate knowledge about the optimum production practices needed to produce top yields or (2) failure to follow recommendations and adopt new practices that years of research indicated they should use.

To remedy the situation, a statewide Soybean Yield and Efficiency Demonstration was organized. The demonstration was designed to achieve three objectives.

1. To promote the use of optimum production techniques needed to produce high yields.

2. To provide farmers throughout the state an opportunity to learn better production techniques from each other.
3. To provide some measurement of farmer acceptance and application of superior production techniques.

The demonstration consisted of asking farmers throughout the state to complete a questionnaire about the production practices they used in a particular field. It also asked about production costs for such things as seed, fertilizer, land, labor, etc. At harvest time, the grain from the field was weighed, corrected for moisture, and the yield calculated. Production costs and yield were used to calculate the profit per acre of each entry.

The entries were summarized, then grouped into three yield classes and three profit classes (high 25%, medium 50%, and low 25%). Within each profit and yield class, a summary was made of the production practices the group used. In general, the participants falling into the high 25 percent yield class were also in the high 25 percent profit class.

When the results and summaries were presented at meetings throughout the state, it was quite obvious to the farmer that the secret of making a high profit was producing a large yield. The farmer was then interested in learning what production factors contributed to high yields. Using research data and information summarized from the completed questionnaires, agronomists showed them the effect that various cultural practices (planting date, seeding rate, row width, soil fertility, variety, etc.) had on yield.

As expected, the effect of cultural practices on yield in the participant's fields was identical to that obtained from research conducted at the experiment stations. Therefore, the conclusions drawn were in agreement with research results and consistent with recommendations made by Extension agronomists.

A pitfall exists in this kind of approach. Many participants are needed if the results are to be meaningful. In Ohio during the 6-year period from 1966-1971, there were 640 participants, which is probably a minimum. At any rate, "The more the better."

The evaluation aspects of this kind of project come from the ability to compare current production practices used by a participant with those used in the early years of the project. On the average, there has been a significant increase in the use of more nearly optimum production practices by the participants.

This type of educational tool has been most useful in teaching

better methods of production to Ohio's soybean producers. The participants were enthusiastic and have encouraged us to continue the project. Farmers feel the project is of great value since it's carried out in an actual farming situation. It gives them an opportunity to be part of a project that is beneficial to the other farmers in their community and county. It also provides an opportunity for competition among the participants.

After all, what red-blooded, American farmer doesn't like to produce a larger yield, make more profit, or do a more efficient job than the farmer in an adjacent community. Ohio's Extension agronomists label this tool "HIGHLY SUCCESSFUL."

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### **Research! In Extension?**

The University Extension faculty role, as developed in the formative years of Extension, precluded using university resources for faculty research purposes. The rationale behind this was that the Extension role was an applied one with emphasis on service and teaching rather than on research. This was reinforced by the view of many resident faculty members to whom Extension was a vast dissemination mechanism. Extension faculty members, when thought of at all, were viewed as specialists in the interpretation and transmission of pre-packaged ideas.

While there is and ought to be a difference between faculty roles in residence and in Extension in the university, a university appointment implies the obligation to do research. The primary reason for this is that an inquiring mind is the first requirement of any university faculty appointment.

Secondly, the proliferation of scientists and their work suggests that any effective user of research has to be able to discern the significant trends and viable alternative hypotheses being advanced. One's efficacy with respect to this sifting and winnowing is a direct function of his intellectual sieve, and that sieve is a direct function of the continuing practice of independent scholarly inquiry.

In October of 1970, a survey was undertaken to determine the extent of involvement in research among the 451 county-based and 457 campus-based faculty members of The University of Wisconsin-Extension. The study also was designed to provide a description of the nature of the research being done by those who claimed to be doing research.

One hundred and forty-six (33%) of the faculty responding indicated that they had conducted independent scholarly activity, while 301 (67%) of those responding said they hadn't. Review of respondents indicated that about 50 percent of the returns came from county-based faculty members and 50 percent from campus-based faculty. Since the total returns represented only

50 percent of the faculty, it's not appropriate to comment on the total faculty. But, certainly these results suggest a clearer picture of what is than of what needs to be.

To define the kinds of research being done by Extension faculty, responding members were asked to submit abstracts of research reports they'd written. These were sorted into substantively similar groups, with eight general categories of research emerging.

1. *Survey Research — Individual (N=54)*: This type of research is characterized as an individual effort to gain information about some work-related phenomena. Data collected were usually demographic. Although the collection of these data was generally for a specific purpose, such studies tend to yield interesting benchmarks on the status and quality of phenomena in the Extension purview.
2. *Survey Research — Corporate (N=38)*: This type of research is characterized as the effort of an individual Extension member to respond to the expressed needs of a client group. The majority of the studies categorized here were agency sponsored, that is, done for and with support (sometimes only moral) of an agency outside Extension, such as an association or a community. The data generated in these studies are presumed to have led to decisions and actions on

the part of the sponsor and to have helped the Extension faculty member in redefining the Extension role vis-à-vis this sponsor.

3. *Controlled Experiments (N=23)*: This research concerned itself with the differential effects of treatments on criterion variables. Included in this group were studies concerned with land usage and pesticides (among others).
4. *Program Evaluation (N=13)*: "How are we doing?" is the basic question being probed in this kind of research. Evaluative research focuses on the improvement of process as a means to improve function.
5. *Library Research (N=6)*: The majority of such research is the "review-of-the-literature" type. These are basically attempts on the part of Extension personnel to *organize* a body of information for a client group.
6. *Human Relations/Perceptions Surveys (N=5)*: This research is concerned with the collecting of data to generate knowledge concerned with people's feelings about events or relationships.
7. *Qualitative Analyses (N=4)*: Studies sorted here were those concerned with the detailed technical analysis of a phenomenon. An example is a study of the chemical composition of soils.

8. *Historical Study (N=3)*: Historical studies are the analysis of a number of primary and secondary source materials.

In general, these eight categories are kinds of research designed to improve one's own capability to function in his role or to improve the capability of Extension as a corporate entity to perform its function in the university and in society. There can be little question that attainment of either of these goals is completely desirable either in terms of the faculty member, of Extension, or of the people of the state.

What is clear, therefore, is that research, as currently practiced by some Extension faculty members, should be expected of all Extension faculty members. And this means that they should have the right to allocate university resources (time, talent, effort, and money) to such pursuits.

This would mean breaking down some long-term understandings. It would also mean some faculty members would need to acquire some new skills and to reallocate their time.

Change is generally painful and not always good, but a change toward research as a legitimate expression of an Extension appointment, while painful, would certainly be good.

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