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Do We Still Need Agricultural Research?

ONE WAY TO MEASURE success in research is to examine the extent to which products of research—new concepts and new developments—are accepted by others. Using this criterion, the Agricultural Experiment Station has been very successful. Since the founding of AES almost a century ago, agricultural research has resulted in profound improvements in the economy of the state, and in the well-being of its people. The preeminence of the California agricultural industry has been linked closely to the quality and quantity of mission-oriented research conducted by the faculty and staff of the University's Division of Agricultural Sciences.

Is the economy of the state tied to agricultural research as intimately now as in the past? Are the people of California benefiting as much today as in years past from organized research and research-related teaching? Is the modern agribusiness operator still dependent on research produced by AES? Previous writers for this page have editorialized on the frustrations that exist regarding agricultural research and have also raised the question: "Who asks the questions in research?" Perhaps it is time to ask the "gut" question: Is the research carried out under the broad category of agricultural research any longer needed?

If the policy-determining units of the University and state government will ask these questions and research them objectively, then they, and those who are asked to pay the bill for such work, will be in a position to answer the questions. Past successes should not blind these policy groups or the bill payers in their evaluation—nor should they blind us in our self-evaluation.

To obtain the answer to the primary question, several secondary questions must also be asked, and answered. With crop production in California and the nation at its present high level, and economic returns to the producers no greater than they are, why do we need to continue research on new crops or better harvesting methods?

All objective evaluations of future needs for the people in this country, and for the world, dramatically and coldly show that there will not be enough food produced to meet our needs long before

population controls are accepted or are effective in stabilizing the population of this country and of the world. Shall we throw in the towel and watch the two curves come together at an accelerated rate with immense and tragic repercussions, or shall we step in and try to hold the curves apart? Maybe by developing new crops that are adapted to lower water use, or other extreme environmental conditions, or plants that are resistant to pests, or more photosynthetically efficient, we can buy time for the greater problem of population control to be faced and solved. Certainly we must try!

How long will it take to develop such new crops and methods? Can it be done within one, two, or three years of special funding? I seriously doubt it, although the science of genetics has made significant strides in the past few years.

Just as important, when can this new knowledge become applicable to the development of agriculturally useful crops? That question too cannot be answered exactly, but past experience indicates it will occur in less time than it takes to research the basic principles that precede development of new crops.

At the same time, if new crops cannot be developed soon enough to keep the food production and population curves apart, why not get more production out of our present crops? Unfortunately, such adaptive research also takes time and will require development of a large store of new knowledge about the physiological and biochemical processes of organisms and about the cultural and harvesting practices that must be altered to increase yields.

Who takes the lead in developing new knowledge, working out new techniques, and teaching new generations of students the scientific principles needed to overcome the multitude of applied biological, sociobiological, and environmental pollution problems? The Division of Agricultural Sciences of the University, with its strong commitment to scientific research and teaching in the area of applied biology, has long been the bulwark of the state in confronting such problems. To the limit of its resources, it will continue to work on the cutting edge of the state's need in these areas, attempting to provide solutions for the future.