

Plant Pathology, Change, and the Future

L. H. PURDY

APS President 1979-80



For several years I have discussed with certain colleagues some of my thoughts relating to the success or failure of adopting proposed changes in practices in various locations, domestic and foreign. To set the stage: In *Webster's New World Dictionary, College Edition*, the definitions of change and the synonyms occupy 10.5 cm of a column. One definition that may apply is "to cause to become different; alter; convert." Others are "to substitute a fresh covering (as a diaper) on [something]" and "something that is or may be

substituted; something of the same kind but new and fresh." One might consider such synonyms as alter, vary, modify, transform, and convert—all apparently various degrees of change.

A definition of change from our standpoint might be "to introduce procedures that will lessen the impact of plant diseases in a production program." Plant pathologists have a history and track record of evaluating, developing, and fostering many substitute or alternative procedures to benefit growers. I believe we have realized considerable success.

We have learned through our experimental processes that certain procedures reduce the impact of disease. We convince ourselves of this and then we set out with more or less deliberate action to convince growers of the benefits to be realized with our new "substitutes." Publications, bulletins, fact sheets, recommendations, radio, and television are employed to spread the word in a language the grower understands—his own. We realize success because the time or climate for change is favorable, not because we really understand the change process. Growers want procedures that reduce disease and increase economic return and, for the most part, rapidly accept changes that do increase economic return.

Without a favorable climate, a proposed change will not be adopted. Two happenings in the past illustrate this. Indians of the U.S. plains accepted gladly and rapidly the introduction of the horse. Why? Because the horse brought them increased mobility, more abundant food supply, and prestige and changed their lives significantly. Modern man did the same thing with the automobile—our horse on wheels. The climate was ideal for

change from more or less immobility to the rapid, expansive mobility that has become one of our characteristics.

Like the individual who depends completely on a horse or the person whose life centers on the automobile, the grower who relies solely on chemical pesticides or other inputs requiring excessive energy for economic survival must change to alternative procedures. The need for change perceived by the target group, however, may not coincide with that perceived by people like us. Growers of crops with high value per acre are not anxious to adopt changes in plant protection because, for a relatively few dollars, applications of a pesticidal chemical reduce the impact of pests. The risk is not great with proved procedures, whereas "introduced changes" may elevate the risk factor to a point where the "new" thing is not accepted.

Alternatives are limited, but we must begin the search for and development of new protection technology. In Florida, we have begun a program called LET (Low Energy Technology) to develop agricultural procedures that will allow our growers to meet the future competitively with substitute procedures requiring less energy. We must succeed because our sand culture requires considerable resource input, but we have not yet developed all the needed substitutes. In addition, we must reeducate growers by showing them the value of a "new" procedure. Others elsewhere talk of and focus attention on SYAE (Sustainable Yield Agro Ecosystem) or some other concept for a viable future for our food-producing activities.

How do we introduce change to achieve LET or SYAE? We have seen or heard of changes introduced by a method as old as mankind—force, without the option for any alternative, a rather unattractive prospect. Existing procedures must be modified or replaced to achieve SYAE generally as well as specifically for individual commodities. Integrated Pest Management (IPM), a concept that is now popular, in reality is an essential component of any and all plant or plant-related production systems. Please recall that one definition of change is "to substitute a fresh covering (as a diaper) on" something. In my opinion, by "diapering" ourselves with a "fresh covering" and "ringing the changes," that is, "to do or say a thing in many and various ways," we will benefit ourselves and support what we must do—manage plant diseases.

Many people, and perhaps even some plant pathologists, believe an introduced change strikes only the designated target; this demonstrates their naiveté. The target might be a plant, a disease, a control or management procedure, or one of many other specific points. Yet the change will affect the social community in various ways. Our—in this case, agriculturalists or those acting as such—failures in the international agricultural arena are replete with episodes in which an obvious lack of appreciation for the culture, including behavioral patterns, of others had been ignored. If such factors had been considered, the probability of success and acceptance of the introduced change would have been greater. In many cases,

Presented at the 72nd annual meeting of The American Phytopathological Society on 27 August 1980 at the University of Minnesota, Minneapolis.