

## Research: Peddling the Product

WILLIAM MERRILL

Department of Plant Pathology, The Pennsylvania State University, University Park



Information without application is sterile. Therefore, at least 50% of the phytopathological papers published in the past two decades are sterile—there are no immediate, or immediately foreseeable, applications. I am not saying that the contributing research was useless, because it probably had a very important use: 1) a basis for a thesis for an advanced degree or 2) a basis to justify granting promotion, tenure, or salary increment. But from the standpoint of production agriculture, the information

is useless, at least at present. Applications *may* be found by future generations, but I wouldn't wager much on that!

But consider the phytopathological research having immediate or foreseeable applications. Plant diseases have a direct and detrimental impact on the production and utilization of food, feed, and fiber, as well as on the aesthetic appearance of the landscape. Many producers are aware of this and of the need to reduce losses to an economic threshold level. We have vital information. People should be pounding on our doors, clamoring for THE WORD. Yet often even the innovators and early adopters never hear of research results that could profoundly affect production practices. Why?

It is a rare and unusual grower who can gain anything worthwhile from a paper in *Phytopathology*. Indeed, there seems to be a consensus among plant pathologists that few of them can gain much from such papers either! Apparently pathologists have somewhat higher hopes for the fledgling PLANT DISEASE. Time will tell. Of course, it can be argued (legitimately) that papers published for the "scientific world" are not intended to be read by anyone other than a few of the author's colleagues privy to the esoteric jargon and stilted, stereotyped style of such papers. Papers for the layman must be written with different style and emphasis. But far too few researchers ever take the time to write papers for a more general audience. Again, why? Simply because such papers earn few, if any, brownie points towards tenure, promotion, or salary increment. Not only is there no incentive to write such papers, but such writing consumes time that can be spent doing things that *will* contribute to promotion, tenure, and salary increment. Indeed, it is precisely the fact that nonrefereed papers are almost totally disregarded by administrators that led to the demise of the late, lamented *Plant Disease Reporter* (may it rest in peace).

Usually the writing of popular articles explaining research or relating it to practice is left to extension specialists—or worse, to textbook writers. But how can one or two people per state handle the bulk of material emanating from research laboratories dealing with all manner of diseases on a vast array of cultivated and noncultivated plants? The answer is simple: They can't and they don't! Harried and overburdened extension specialists process a small amount of material relating to a few of the major crops in their area and get THE WORD out to a few growers. The teacher of an introductory course may spread THE WORD to a few dozen students per year. But much

information is overlooked and little ever reaches the public.

Researchers shy away from the public, and those who don't often are ostracized by their peers. Most scientists feel that communicating with the general public "taints" them, that somehow it is "unprofessional." Most think the public doesn't care or won't understand. Perhaps the latter is due in great part to the method of peddling the product.

In the Neanderthal thinking of many extension specialists (and virtually all agricultural administrators) a one-page mimeo "fact sheet" naming a disease and briefly describing the current control recommendations is the zenith of SPREADING THE WORD. We have progressed little beyond this in the past 50 years. Only relatively recently have a few stations used color photos, and few offer for-sale publications. The consumer is well aware that you get what you pay for. Single-page mimeos are not highly regarded, have little lasting impact, and generally are of no use or interest to the general public. With an audience thoroughly conditioned by the advertising media to expect slickly done, professional communications, agricultural communications are unappealingly kindergartenish, at best. But if the packaging is professionally well done, if the message is interesting and intelligible, the general public will beat a path to the door and not quibble about paying for the product. The huge success of Al Shigo's packaging of tree decay information proves the point.

Plant pathologists have a vast stockpile of information not only of use to growers but utterly fascinating to the general public *IF* the material were to be packaged in a pleasing and comprehensible format. The *Compendia* published by the American Phytopathological Society (of very limited value or interest to most people) are only the first staggering infantile steps on the pathway to peddling the product. We haven't even scratched the surface yet.

The cost of packaging may be great, although with large volume the cost per unit will be low. But the efforts can be self-sustaining. The major hurdles are 1) to overcome the resistance of our Pleistocene-age administrators to for-sale publications and to the popularization of research information and 2) to modify the reward structure so there is suitable incentive to develop such packages.

Taxpayers are becoming increasingly concerned about where, why, and how tax dollars are being spent. Few have yet focused on the agricultural experiment stations to see what return is being realized on monies invested in research. In 1979, direct costs of conducting phytopathological research were estimated to be about \$65,000 per refereed journal paper. Total direct and indirect costs to society were probably five times that, or about \$325,000 per refereed paper. For every such paper, the taxpayers are buying the equivalent of 16 Lincoln Continental Mark VIs, automobiles they never even get to see, let alone ride in!

Agricultural experiment stations are factories; their product is new knowledge gained through research. To date, all emphasis has been on *producing* the product. Such an attitude is a luxury we will not be able to enjoy much longer, particularly in view of rapidly escalating costs of doing research. If we want to remain in business, we should begin to place equal emphasis on packaging and peddling the product.

The views expressed are solely the author's and in no way reflect the views of the Department of Plant Pathology or the College of Agriculture, The Pennsylvania State University, nor the views of the author's wife, children, relatives, in-laws, colleagues, friends, or casual acquaintances.