

## The History of Pesticide Applicator Training<sup>1</sup>

John V. Osmun

The statewide programs of federal/state training and certification of pesticide applicators were conceived and developed in the mid 1970s. A new federal pesticide law, best known as *FIFRA amended*, required that persons applying restricted use pesticides become certified through a state lead agency. Many states expanded that provision to include most pesticides. "Certification" implies knowledge and, to assure competency, the new program needed to be undergirded with appropriate training. Thus, there emerged what has become known as PAT: Pesticide Applicator Training. My talk is about the *early* history.

It was initiated 25 years ago and, although the program is not perfect in every detail, it has stood the test of time. We have seen a period of great strides that have taken us out of an era of sometimes irresponsible use of pesticides to a position of increased technical competence, integrated procedures (IPM), safer techniques, and environmental awareness. When properly managed, and when not politically impeded, applicator certification assures the continuing use of valuable pesticides that otherwise would have lost their registrations.

The road to the final four (i.e., FIFRA, Sec. 4), and that also included having PAT in place, was not a smooth one.

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Let's go back to the years before 1946. Then we lived with—and had to accept—a multitude of pests: hoards of flies, mosquitoes, lice, the corn borer, boll weevil, weeds, plant diseases, and many, many more. Chemicals for control were few, and use regulations nearly nonexistent. The turning point came with the sudden availability of the life-saving insecticide DDT. It opened a Pandora's box of new pesticides, and the public clamored for them. We witnessed a period of unbridled use of broad spectrum chemicals, and man believed himself in complete command of nature and of his own destiny. Before long, however, ominous signals appeared. The first was the unexpected development of insect resistance to many usually effective insecticides. Second was the publication of Rachel Carson's *Silent Spring* in 1962. As startled and defensive as many persons were at its content, there arose a new awareness of ecology, pollution, and the fragile aspects of the environment. A major result was that *pesticides in their entirety* were caught up in a tide of discontent.

Thus the 1970s became an era of laws and regulations. First, EPA was established (1970), and next, Congress enacted a "new" law: the elaborate amendment of FIFRA. Its provision for pesticide applicator certification required the setting of standards, and extensive work on this commenced in 1973. In order to assure that applicators would have the required knowledge, some provision had to be made to provide extensive training, nationwide. From the very beginning, the EPA Operations Division consulted the states through direct contact with CES specialists and lead agencies, and by having informal opinion-gathering hearings at various places across the country. Within EPA, however, there were various strong feelings as to how the agency should develop standards. Some thought standards of applicator competency should be defined for every product. Another group argued that toxicity should be the criteria and that standards should be based on specific knowledge of degrees of toxicity for every chemical. In the

end, these approaches were not deemed workable. There were other complicating and delaying factors, including the fact that our competency standards had to be established before the then tardy pesticide classification system would even be known. It was decided that the way to proceed was to identify first the principles and then the practical knowledge needed to use pesticides properly.

Considered initially were the standards for commercial applicators. It was Extension Service experience that led us to the format adopted for commercial applicators. For years, specialists had been working with groups by occupation, e.g., agricultural crop applicators, the urban pest control industry, ornamental and turf applicators, and public health organizations. Within each of these, there were special knowledge needs relative to pesticide use, and especially important was the fact that the applicators themselves were easy to identify and corral! We concentrated on the needs of individuals rather than on the chemicals themselves. With this in mind, ten categories of applicators were established, along with appropriate competency standards, plus we identified a common core of knowledge that should be required in all categories. States could then add as many subcategories as they wished, providing they were identifiable within the basic ten.

Within EPA's Operations Division, formalizing the standards moved forward rather well. However, it took nearly a year of excruciating due process and circumventing obstructionists to get the standards approved. Fortunately, the legal counsel was excellent and the suggestions from states' regulatory agencies and various environmental groups extremely helpful. After all, no law nor attending regulations can work unless they have agreement and support of the people concerned. In final analysis, that is what we had.

Setting standards for the private applicator was actually more difficult than developing standards for commercial applicators. Congress repeatedly stated that although the farmer was to

be knowledgeable regarding pesticide use, he was not to be burdened by maintaining records nor filing reports. And, most importantly, EPA was to establish separate standards for the private applicators. Fortunately, there was always agreement that there must be a common core of knowledge (private or commercial) for which everyone should be responsible.

It was one thing to develop standards of competency for both private and commercial applicators—in retrospect, that went relatively well—but it was another to formulate palatable regulations for the development of state plans. Some states had been licensing certain categories of applicators for years; but, on the other hand, most states had nothing. One of the primary objectives, therefore, was to draft regulations that would accommodate existing state programs and, at the same time, be realistic from the standpoint of those states that had to start from scratch. Some states rebelled against being told how they were to do this; one state accused EPA of fascist tactics! Proposals had to be revised and then again reviewed, but finally diplomacy prevailed. Eventually, all but two state governors signed off, and a national program of certification was underway. From there on, the focus was the programs of each state, all working toward a common goal under the auspices of the federal government.

The standards for certification could have been more rigorous and more specific. Congress intended, however, that practical, usable knowledge be required. The goal was to train applicators in such a way that they could handle in a competent manner the pesticides they needed, and do so with confidence, and that, in the process, they would acquire knowledge not entirely conveyable through labeling. This seemed to be a sound approach because, after all, training is a principal assurance that standards will be met. One of the most important underlying philosophies of FIFRA relates to knowledge and competency. What really happened was that Congress, in structuring FIFRA, had given formal endorsement to the principle that training is a

reliable and workable ingredient in a regulatory process. It is the legal recognition of the essentiality of education and the competent person!

All through the process of developing standards, those of us in the Operations Division were confident that the Cooperative Extension Service would play a major role. However, there was one group within EPA who felt strongly that the agency itself should develop an extension service of widespread proportions. Fortunately, the cost of doing this was prohibitive, and that notion did not prevail. There was an even closer call, however, when another group advocated that the state vo-ag system should be used as the sole outreach for pesticide applicator training. Finally, it was realized that the Cooperative Extension Service was the only organization that had the technical know-how, the experience in instruction, the available supporting materials, and a profound network that reached to the heart of every county in every state in the country. The extension directors throughout the country accepted this challenge, and the Secretary of Agriculture pledged full support.

There remained a number of nagging problems that extended for several years after the program was initiated. These problems might have been resolved by modifying regulations; but, strangely, it was found easier to amend the law than to modify an EPA position. Congress strengthened FIFRA by stating that the Extension Service shall be used to further education and that the philosophy of integrated pest management (IPM) could not be a regulatory tool, but would be part of the education process. Another amendment stated that before EPA could cancel a pesticide, its use must be considered for restricted use by certified applicators. Congress also amended FIFRA to clarify EPA's obligation to appropriate funds annually, on a matching basis, for training.

Principal credit for the success of training programs for pesticide applicators has been given to the SCESs. That is as it should be because, in each state, the pesticide coordinator has orchestrated the process, and many improvements have been incorporated along the way. It is very important to note, however, that many major contributions to training have been from the private sector. Hats off to the workshops, the seminars of chemical/equipment suppliers, consultants, associations, correspondent courses, and technically oriented trade journals. All in all, PAT has been an amazingly successful program for 25 years. The key to this success is that the programs of training and regulation have been, in most states, a true partnership. Those organizations, businesses, and individuals that believe in education and know how to reach the public have been accepted by state regulatory agencies as being essential ingredients in achieving a workable pesticide applicator certification system.

Now about the people involved. Most federal government regulations and programs are published as anonymous. That was the case with the pesticide certification standards and the PAT programs. Please note that regulations do not arise by spontaneous generation; they are not anonymous. Before it is too late, let the records show a number of names of those deeply involved.

Jim White, originally with USDA's pesticide registration program, moved to EPA when FIFRA was enacted. He and his subgroup entomologist, Burton Evans, drafted the early ideas regarding the bases for certification standards and Jim became a branch chief in my Operations Division. His contact with state regulatory persons responsible for pesticides was invaluable, as was his appreciation of the Cooperative Extension Service. He wrote well and had a great sense about what ought to be done.

The late Dr. Frederick Whittemore was another member of our team which basically authored the certification program. We lured him away from FAO in Rome. He had a lot of savvy and always had a better way of saying something; and he had no equal when it came to scientific argument.

William Holmberg, ex-marine and a gutsy, unfailing facilitator, took my position as Operations Division director when I returned to Purdue. He deserves the credit for convincing the states to accept the State Plans part of the program. No one else could have done it.

There were others involved in various aspects of the initial undertaking. The late Henry Korp, administrator, Office of Pesticide Programs, was very supportive of what we were doing, as was his deputy, Ed Johnson. Lowell Miller was the OPP attorney; he was rational and helpful. He used to tell me, "Don't worry, John. Many people in this agency simply don't understand the substantive reason we are here. You're on the right track; just keep going."

Those of you who may have had the good fortune of having a super secretary will understand my including Sue Schmaltz. From day one, she was devoted to the program: days, weekends, evenings, whatever was necessary; and she stood her ground with everyone. She was an essential part of the team.

Another member of the group was Dr. Gerald Weekman, on loan from NC State. We connived with Extension Administrator Kirby to have him as a joint employee of USDA and EPA. He wrote the early training manuals, e.g., *Using Pesticides Correctly*. Dr. Paul Bergman and Ray Scott were the movers for USDA/Extension, and Paul drafted early suggested questions for the states to use as certification exams. At the state directors' level, the early supporters were George Hiatt (NC) and Roland Abraham (MN); Carlton Blalock (NC) was a strong advocate of our proposal to use "continuing education" (later called "continuing certification units") as a

viable method for applicators to renew their certification. And we should never forget that Secretary of Agriculture Earl Butz, together with EPA Administrator Russell Train, publicly strongly endorsed the concept of training and certification.

A lot of water has poured over the dam since the 1970s—and it has been you people in the audience who have made PAT and certification work.

You have been imaginative, resourceful, open-minded, cooperative, and dedicated to high standards and to appropriate compliance. Your CTAG and AAPSE are impressive.

Principles don't change, but problems and attitudes do—and I commend you for your accomplishments down through the years and for the plans you have for the future!

Jim White and I were talking just a few weeks ago about the early days when we were developing the regulations for Sec. 4. We were all so fortunate to have had the opportunity; we were at the right place at the right time. Both of us immediately agreed that, for some of us, it had been a crusade and that the dedication of our staff and cooperators was unreal! For an enforcement-oriented federal agency to put education up front was completely foreign, and to some internally, distasteful. Perhaps that motley team that put this all together was the proverbial “lucky accident” but, we not only knew where we were going, our program for Sec. 4 moved so successfully that it became the first major requirement in FIFRA to be signed into law. It was a partnership then; it still is a partnership. And, its basic premises are still viable and generally workable a quarter of a century later.