V.
Recommendations: State Regulation of Pesticides

The N.C. Center for Public Policy Research, in its review of state pesticide regulations, identified strengths and weaknesses in North Carolina's program. On the positive side, our 50-state survey found that North Carolina's pesticide program was among the most comprehensive in the breadth of its responsibilities and extent of its regulatory powers. North Carolina also ranked high in total spending and staffing for pesticide programs, as well as various measures of regulatory activity—including total fines assessed on violators, the number of applicator licenses suspended or revoked, and the number of complaints investigated.

The Center's research also found areas where North Carolina is lagging. Our review of enforcement records found shortcomings in North Carolina's regulation of aerial applicators, its

Ken Taylor, N.C. Wildlife Resources Commission

methods for penalizing violators, and the balance of public interests on the boards that oversee pesticide regulation. In addition, our survey found that North Carolina trails many states in its record-keeping and reporting requirements for pesticide applicators, and the hours of training needed for applicators to renew their licenses and certifications.

North Carolina cannot afford to ignore these shortcomings. Scientific authorities rank pesticides as a relatively high risk compared to other environmental problems in their potential to cause health and ecological damage.[1] Therefore, the Center recommends the following policy actions in areas of pesticide regulation:

1 The N.C. Department of Agriculture and the Pesticide Board should revise their system of punishing violators of pesticide regulations to: (A) assess more consistent fines and penalties; (B) punish more harshly serious violations and repeat offenses; and (C) cease the current practice of negotiating penalty settlements with violators.

The Center's review of the N.C. Department of Agriculture's pesticide enforcement actions found numerous inconsistencies in the amounts of fines and lengths of suspensions assessed on violators. Such inconsistencies were particularly apparent with the Pesticide Board, which negotiates settlements with violators rather than using a system that assigns standard penalties. Consider the following examples, both involving aerial applicators who were penalized by the Pesticide Board for violating pesticide regulations between 1983 and 1992:

- H. Ray Meads of Elizabeth City was fined $250 in 1985 for his first violation incident. In 1990, Meads was fined $2,500 for five separate violation incidents. Yet he was fined only $300 for a seventh incident in 1991. Meads received a two-month suspension for an eighth incident, but he has appealed that penalty.
- D. Carroll Vann of Greenville was fined $1,200 in 1990 his first violation incident, yet only received a warning letter in 1992 for his second and third incidents. In 1993, he was fined $500 and received a one-month license suspension for his fourth and fifth incidents.

Such inconsistencies often give the impression that the severity of penalties is more related to the negotiating skill of violators than the severity of their offenses. *To dispel that notion, the N.C. Center recommends that the Pesticide Board stop its current method of negotiating fines and penalties with violators. Instead, the board should develop a matrix system that sets standard fines and penalties based on factors such as severity of incidents, damage involved, illnesses or deaths caused, and number of previous violations. The new penalty system should include a method for assessing harsher penalties on repeat violators, comparable to the "point system" used for traffic violators.*

North Carolina cannot afford to ignore shortcomings in its programs for regulating pesticides. Scientific authorities rank pesticides as a relatively high risk compared to other environmental problems in their potential to cause health and ecological damage.

Records show that a small percentage of repeat offenders, primarily aerial applicators and exterminators, account for many of the pesticide violations. For example, repeat violators were involved in about 45 percent of all aerial application incidents in 1991 and 1992. The higher violation rates and numbers of repeat offenders among aerial and structural pest applicators also raise serious concerns. That's because those two groups of applicators have perhaps the greatest potential to affect public health and the environment.

Several Pesticide Board members have advocated this point system concept, while criticizing the current method of negotiating fines. For guidance in developing a new penalty system, the Pesticide Board could look to other state panels, such as the Environmental Management Commission, that use matrix systems in assessing fines. In fact, the Department of Agriculture's Structural Pest Control Committee already uses a penalty matrix—resulting in more consistent fines and penalties.

Both the Pesticide Board and the Structural Pest Control Committee should assess higher fines

for more serious incidents and for repeat offenders. State law limits pesticide fines to $2,000 per violation, and the N.C. Center does not propose raising that limit. But the state's pesticide oversight boards rarely assess fines that approach the maximum, and both panels should make more use of their authority within current guidelines. The Pesticide Board averaged $494 per fine from 1988 to 1992, while the Structural Pest Control Committee averaged $668. (See Table 8 on p. 48.) Our survey shows that the average fine assessed on violators in North Carolina is much lower than in many states—even though North Carolina is among the leaders in total fines. (See Table 21 on pp. 80–81.) The average fine assessed in North Carolina from 1990–92 was $601—less than one-fifth of that among other states, which averaged $3,434 per fine.

2 The Pesticide Board should take actions to reduce the numbers of violations by aerial applicators, who account for an undue proportion of the state's pesticide violations. Such actions should include imposing harsher penalties on repeat offenders and requiring aerial applicators to notify nearby residents by posting signs before spraying.

Center research found that, among pesticide users, aerial applicators had the largest violation rate—*or, the number of violation incidents per applicator by type.*[2] From 1988 to 1992, aerial applicators were involved in about 27 violation incidents for every 100 applicators—a rate far higher than any other user category. The second-highest category, exterminators, had a violation rate of seven incidents per 100 applicators. (See Table 10 on p. 52) Put another way, aerial applicators were involved in nearly as many violation incidents as private applicators—even though private licensees outnumbered aerial licensees by 28,650 to 194. Aerial applicators also accounted for more than a third (36 percent) of the *repeat* violators over the five-year period. (See Table 11 on p. 55.)

Pilots say their higher violation rate is due to three factors: their high visibility; the large amount of land they treat relative to other types of applicators; and the strictness of North Carolina's regulations, which they describe as among the harshest in the nation. There is some truth in those claims. But it's also true that aerial spraying is more prone to drift off-site than other types of pesticide application, thereby posing greater hazards to the environment and public health.

North Carolina regulations already prohibit all drift from aerial spraying—it's hard to get much tougher than that. Yet more actions are clearly needed to reduce complaints and violations. Imposing harsher penalties on repeat violators is one step in that direction.

Another much-needed change is requiring aerial applicators to notify nearby residents before spraying fields.[3] Pilots have opposed notification requirements because of the difficulties and delays involved in identifying and contacting residents by letters, telephone calls, or advertisements. Such concerns are legitimate. *The Center recommends instead that pilots provide advance notice to nearby residents by posting standardized signs around target sites before spraying.* Administrators with

We used to read in old poets about the scent of the earth

And grasshoppers. Now we bypass the fields:

Ride as fast as you can through the chemical zone of the farmers

The insect and the bird are extinguished. Far away a bored man

Drags dust with his tractor, an umbrella against the sun.

What do we regret? . . .

—Czeslaw Milosz, Nobel Prize winner, excerpt from the poem, "Advice"

The Center's review of the N.C. Department of Agriculture's pesticide enforcement actions found numerous inconsistencies in the amounts of fines and lengths of suspensions assessed on violators. Such inconsistencies often give the impression that the severity of penalties is more related to the negotiating skill of violators than the severity of their offenses.

the Massachusetts pesticide program say they have reduced aerial application problems since they began requiring pilots to post signs prior to spraying. That seems a reasonable approach.

The Center also recommends that the Pesticide Board and/or the General Assembly ***study the merits*** *of several other proposals aimed at regulating aerial applicators, including: (A) increasing the buffer zones in which spraying is prohibited around residences from the currently required 100 feet to 300 feet; (B) adopting a more lenient standard than the current "no deposit" rule for pesticide drift in buffer zones; (C) requiring mandatory liability insurance for aerial applicators,*[4] *which was required by state law from 1953 to 1971; and (D) adopting stronger training requirements for the renewal of certifications.* (See further discussion of training requirements in Recommendation 6.)

3 The N.C. General Assembly should enact legislation giving the Structural Pest Control Committee the authority to penalize *unlicensed and uncertified* violators of its regulations.

Unlike the Pesticide Board, the Structural Pest Control Committee currently does not have the power to fine or otherwise punish unlicensed or uncertified exterminators who violate state pesticide regulations. As a result, the structural pest board must refer such cases to the courts—thus contributing to the backlog of cases in the court system and resulting in unnecessary costs for taxpayers. In 1992 alone, 12 cases involving unlicensed and uncertified exterminators were tried in the court system. Transferring that authority to the Structural Pest Control Committee would speed up the handling of such cases and rid the court system of an unneeded burden.

4 The N.C. Department of Agriculture should start compiling accurate data on the amounts of pesticides used statewide in order to assess and correct potential health and environmental problems, including groundwater contamination. The state also should develop a mandatory system for the reporting of pesticide-related illnesses, injuries, and deaths.

Available data on pesticide use are, at best, "guesstimates." Neither North Carolina nor the federal government require pesticide applicators to report the amounts of chemicals they use. Therefore, there are no solid numbers on the amounts of pesticides applied by county or by state. The same is true for pesticide-related health records.

Accurate information would be valuable for a number of reasons, including: determining where to concentrate regulatory and training efforts; conducting recalls of canceled pesticide products; monitoring and correcting potential environmental problems, such as groundwater contamination; and detecting and dealing with potential health problems associated with pesticides. The information also could benefit farmers, who are among the most vulnerable to potential groundwater contamination and pesticide-related health problems. About half of North Carolina's citizens and virtually all of its rural residents get their drinking water from wells.

Critics say that compiling pesticide-use data would be a burden for farmers and sap resources from regulatory programs. Yet much information is already available. *Federal law requires applicators of restricted-use pesticides to keep records on their pesticide use for two years following applications.* Applicators must supply those records upon request to regulators, inspectors, or licensed health-care professionals. But the law does not require pesticide users to systematically report that same information to the states or the federal government.

Despite the lack of federal reporting requirements, at least 10 states already collect such data.[5] Some states have been doing so for 20 years or

more, and many of those states have smaller pesticide budgets than North Carolina. For example, New Hampshire has collected pesticide-use reports since 1965—with a budget one-tenth the size of North Carolina's in FY 1992–93. States with reporting requirements have used their records to monitor and deal with health and environmental problems, such as groundwater pollution. The New Hampshire program found from its records that some applicators were misusing the herbicide clomazone, causing contamination problems. Regulators in California used their records to track down users of methyl bromide after studies found that it could pose health risks to people who fumigate buildings with the chemical.

The higher violation rates and numbers of repeat offenders among aerial and structural pest applicators raise serious concerns. That's because those two groups of applicators have perhaps the greatest potential to affect public health and the environment.

The North Carolina Pesticide Law of 1971 gave the Pesticide Board the authority to "collect, analyze and disseminate information necessary for the effective operation of the programs."[6] Currently, the board requires *record-keeping* for: certain sales of restricted-use pesticides by dealers; applications of restricted-use chemicals by licensed users; and use of *all* pesticide products by aerial applicators. But the board has shied away from adopting *reporting* requirements, contending that such regulations would draw resources from existing enforcement efforts. However, such concerns have not deterred the Department of Agriculture from collecting annual production records for a wide variety of crops and livestock across the state. The department also began collecting limited data on pesticide use in 1992, based on a sample of less than 1 percent of the state's 59,000 farms.

Ideally, the Pesticide Board should require all applicators to report their use of all pesticides. But such complete reporting could be expensive and time-consuming to collect and analyze. However, the board could obtain much valuable information on pesticide usage with relatively little effort. *At a minimum, the Pesticide Board and the Department of Agriculture should compile annual statewide pesticide-usage reports based on statistical samples of people who apply restricted-use chemicals. Plus, the General Assembly should appropriate funds for the additional staff and resources that the Agricultural Statistics Division needs to compile and analyze those reports.* Although pesticide applicators may oppose such reporting requirements, federal law already requires them to keep records on their use of all restricted-use chemicals—which comprise only 3 percent of the 12,391 pesticide products registered for use in North Carolina in 1992.[7]

North Carolina also should join the 13 states that require physicians and hospitals to report pesticide-related illnesses, injuries, and deaths. The data compiled from this effort would go hand-in-hand with pesticide-use records in helping to monitor and deal with potential health problems associated with pesticides. The Center's survey found that such reporting is required in about one-third of the states, including neighboring South Carolina.

5 The N.C. General Assembly should rewrite the statutes regarding appointments to the state's three pesticide oversight and advisory panels to ensure that each board includes a broader balance of public interests. Also, the Governor and the N.C. Pesticide Board should closely follow the requirements of the state Pesticide Law when making any new appointments to the state's pesticide oversight and advisory boards.

The three panels include: the Pesticide Board, which regulates agricultural and many commercial uses; the Pesticide Advisory Committee, which provides technical advice to the board; and the Structural Pest Control Committee, which regulates exterminators and fumigators. (See Tables 2–5 on pp. 36–42 for membership requirements of these boards.) Currently, all three boards are heavily weighted with members representing agriculture, industry, and state agencies. The legislature needs to ensure that these panels include representation from other groups that have a stake in pesticide regulation, such as environmentalists, farmworkers, and farmers who use alternative methods of pest control.

The need for change is apparent because two of the boards' membership rosters have violated

the state Pesticide Law. For instance, the law specifies that one at-large member of the Pesticide Board shall be a "nongovernmental conservationist," but no member meets that qualification. Also, neither of the board's current at-large members claim to fill the conservationist seat: Board Chairman Jerry Coker is an engineer with Weyerhaeuser Co. in Plymouth, and Lu Ann Whitaker is a Raleigh homemaker. Likewise, the Pesticide Advisory Committee is supposed to include an "ecologist," yet that seat was filled by a retired farmer until August 1994.[8]

The laws establishing all three pesticide boards need amending to ensure input from groups not currently represented, in particular environmentalists. As noted, the environment-related seats on the Pesticide Board and the Pesticide Advisory Committee have not always been filled by environmentalists. Also, state law does not require the presence of an environmentalist on the Structural Pest Control Committee. In particular, the Center recommends the following changes in the laws specifying appointments to the state's pesticide oversight and advisory boards:

A) The Pesticide Board should include an environmentalist from a non-profit, public-interest group as a substitute for one of its two at-large members.

B) The Structural Pest Control Committee should include an environmentalist from a non-profit, public-interest group as a substitute for one of its two members who are involved in the pest control industry.

C) The Pesticide Advisory Committee, because of its larger size, should include several additional interests that currently are not represented. These include: an environmentalist from a non-profit, public-interest group as a substitute for the committee's conservationist seat; an environmental scientist as a substitute for its ecologist seat; a farmworker advocate as a substitute for its at-large member from the general public; and a researcher or farmer involved in integrated pest management or alternative methods of pest control as a substitute for one of its three practicing farmers.

Regardless of whether the legislature enacts such changes, the Center also recommends that:

D) The Governor—when appointing new members of the Pesticide Board—should select persons with backgrounds that are truly representative of the slots they are supposed to fill under the state Pesticide Law.

E) The Pesticide Board—when appointing new members of the Pesticide Advisory Committee—should select persons with backgrounds that are truly representative of the slots they are supposed to fill under the state Pesticide Law.

Such changes in laws governing appointments to boards and commissions are not without precedent. For instance, in 1991 the legislature amended state law to require the representation of a consumer advocate and a health professional on the Structural Pest Control Committee.[9] In 1989, the legislature more clearly defined the membership of the Coastal Resources Commission—in response to complaints that too many developers were serving on the coastal planning panel.[10]

6 The Pesticide Board and the Structural Pest Control Committee should increase the training requirements for the renewal of pesticide licenses and certifications, particularly with regard to aerial applicators and exterminators. At a minimum, the state should require *all applicators* to complete 10 hours of training every three years.

The Center's nationwide survey found that North Carolina is among the leaders in *penalizing* pesticide violators, but the results suggest that the state could do a better job of *preventing* violations. Stronger educational requirements—that is, longer and more frequent training—are an effective way to put more emphasis on prevention.

Educational requirements are hard to compare because the states often categorize applicators differently. Nevertheless, the Center's survey found that most states have more extensive training requirements than North Carolina. For example, Colorado's requirements range from 36 hours for commercial applicators to 160 hours for extermi-

The North Carolina Pesticide Law of 1971 gave the Pesticide Board the authority to "collect, analyze and disseminate information necessary for the effective operation of the programs."

The state's pesticide oversight and advisory boards are heavily weighted with members representing agriculture, industry, and state agencies. The laws establishing all three boards need amending to ensure input from groups not currently represented, in particular environmentalists.

nators, with a three-year renewal cycle. The state of Washington requires 40 hours of training every five years for all applicators.

North Carolina has different training requirements for many types of applicators, but most are among the weakest of all the states surveyed. Current training requirements range from two hours every three years for private applicators to 10 hours every five years for horticultural applicators. (See Table 7 on p. 47.) Some pesticide applicators are not required to get any training at all. For instance, the lawn-care technicians who apply pesticides around people's homes are supposed to work under the supervision of licensed applicators but have no formal training requirements. *The state should require all pesticide applicators to complete at least 10 hours of training every three years.* This minimum requirement should apply to farmers and other certified private applicators as well as the "technicians" who work under supervision.

Stronger training requirements are particularly important for aerial applicators and exterminators because those groups of applicators cause the most violations and have the greatest potential to affect public health or the environment. Records show that aerial applicators and exterminators have the highest violation rates among pesticide applicators and account for most of the repeat offenses.

At a minimum, the Pesticide Board should require at least 20 hours of training every three years for the certification of aerial applicators, given their high violation rate. Currently, aerial applicators need only four hours of training every two years to renew their certifications—a requirement exceeded by 26 states. States with even stronger training requirements for aerial applicators include: Oregon, 45 hours; Washington, 40 hours; neighboring Tennessee, 28 hours; Rhode Island, 24 hours; California and New Jersey, 20 hours.

Similar steps should be taken by the Structural Pest Control Committee, which should require that all exterminators be certified and complete at least 15 hours of training every three years. Currently, structural pest applicators can be certified by completing as little as five hours of training every five years. Plus, more than half (52 percent) of all structural pest applicators are uncertified technicians, whose sole training requirement is to watch a 45-minute videotape. The Center's survey found that at least 12 states have stronger training requirements for exterminators than North Carolina. States with more extensive requirements include: Oregon, 45 hours; Washington, 40 hours; Tennessee, 28 hours; Rhode Island, 24 hours; and New York and Oklahoma, 20 hours.

7 The Department of Agriculture should expand its public education efforts regarding safe pesticide use to help stem the large number of violations by *unlicensed and uncertified* applicators.

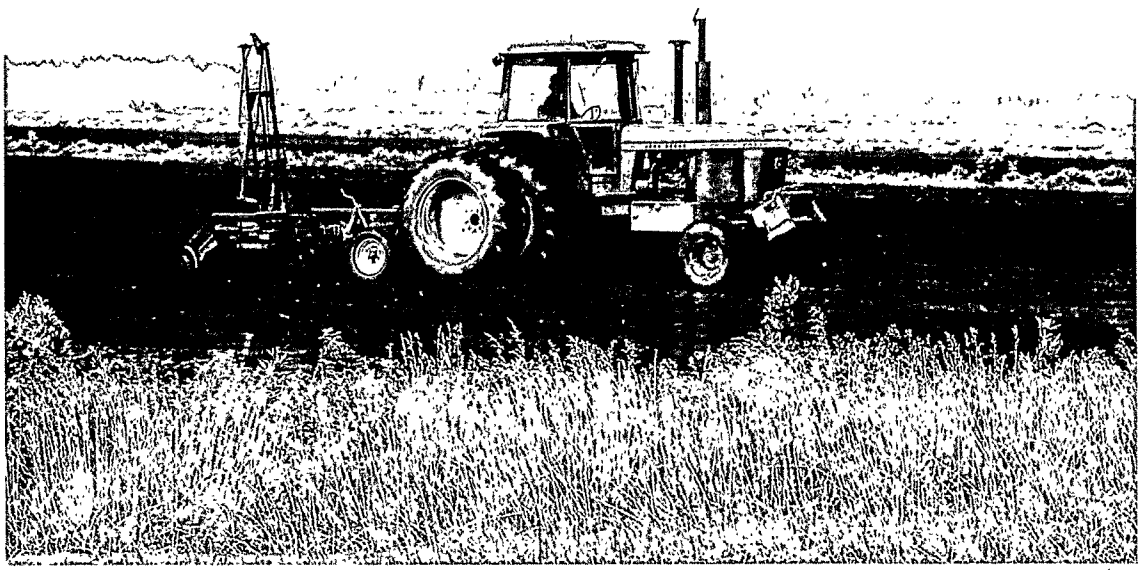
The Center's nationwide survey found that North Carolina is among the leaders in penalizing pesticide violators, but the results suggest that the state could do a better job of preventing violations. Stronger educational requirements —that is, longer and more frequent training—are an effective way to put more emphasis on prevention.

Because you can die of overwork, because you can die of the fire that melts rock, because you can die of the poison that kills the beetle and the slug, we must come again to worship you on our knees, the common living dirt.

—MARGE PIERCY, POET
FROM "THE COMMON LIVING DIRT" IN *STONE, PAPER, KNIFE* (1983)

Unlicensed applicators account for one-fourth of the state's violation incidents—second highest among the types of pesticide users. (See Table 10 on p. 52. These violations generally include two types: home gardeners who carelessly apply pesticides bought from garden centers but aren't required to obtain licenses; and landscape workers and exterminators who illegally apply pesticides for money without obtaining licenses. Most unlicensed applications result in minimal damage, but some have caused serious accidents and injuries. For example, in 1989 an uncertified farmworker in Bladen County accidentally mixed a container of the insecticide Counter with cow feed—killing 125 head of cattle.

The N.C. Department of Agriculture has available pamphlets and posters on pesticide safety that it can supply to dealers and garden shops. But the Pesticide Board does not *require* dealers to provide such information to consumers, and many dealers don't bother. As a result, most gardeners probably are not aware that it is illegal to apply pesticides on someone else's property (or for money) without a license. Many gardeners also



Ken Taylor, N.C. Wildlife Resources Commission

might not know that "the label is the law" regarding pesticide use. That is, it's illegal to apply pesticides in ways inconsistent with the directions listed on the small, hard-to-read labels on pesticide bottles and boxes.

The Department of Agriculture should expand its public education efforts by distributing pesticide-safety information to all dealers and garden shops. The Pesticide Board also should require those dealers, at a minimum, to post signs with basic information on pesticide safety. The state wouldn't have to write such material because of the availability of existing publications. For instance, the EPA publishes an inexpensive, 24-page pamphlet, "Citizen's Guide to Pesticides," that contains all the information the average person needs to know about the safe handling of pesticides.[11]

Many gardeners might not know that "the label is the law" regarding pesticide use. That is, it's illegal to apply pesticides in ways inconsistent with the directions listed on the small, hard-to-read labels on pesticide bottles and boxes.

8 The N.C. General Assembly should establish a study commission to re-examine the merits of moving pesticide regulatory programs from the Department of Agriculture to the Department of Environment, Health, and Natural Resources. The N.C. Center makes no recommendation on whether the program should be moved.

Perhaps no issue in pesticide regulation has caused more debate than this question: Can an agricultural agency regulate pesticide use without favoring farmers at the expense of public health and the environment? Congress considered that issue in 1970, when it transferred pesticide regulation from the U.S. Department of Agriculture to the newly created Environmental Protection Agency. In North Carolina, the state legislature considered the issue in 1989, when it consolidated most of the state's environmental programs into the new Department of Environment, Health, and Natural Resources. At that time, the legislature decided to leave pesticide regulation in the Department of Agriculture.

The Center's research suggests that the legislature should take another look at this issue. Our survey found that pesticides are regulated through agricultural agencies in 43 states (86 percent), environmental agencies in five states (10 percent), and public universities in two states (4 percent). However, our survey found substantial differences in the level of regulatory activity when we compared states with pesticide programs based in agricultural agencies versus those in environmental agencies. (See Table 26 on p. 91.) On average, the environment-based programs levied more fines, suspended or revoked more licenses, and investigated more complaints. The environmental programs also had much larger budgets and staffs. The differences between environment- and agriculture-based pesticide programs held up even when various factors were adjusted for state populations and crop acreages.

Some observers say such discrepancies add weight to environmentalists' contention that having an agricultural agency regulate pesticide use is like letting the fox guard the chicken house. Others, however, could interpret the survey findings differently. Agriculture advocates could argue that the environment-based programs take more regulatory actions because they do a poorer job of educating pesticide applicators and thus have more violations. Nevertheless, the Center's survey found little difference in the educational

On average, the environment-based pesticide programs levied more fines, suspended or revoked more licenses, and investigated more complaints. The environmental programs also had much larger budgets and staffs.

The modern environmental movement, though it has shifted its emphasis from preservation of precious resources to control of pollution caused by our industrial and agricultural practices, declares our dependence on the earth and our responsibility to it...

—WALLACE STEGNER, *WHERE THE BLUEBIRD SINGS*

requirements for states with agriculture-based programs versus those in environment-based programs. Plus, virtually all of the states—including North Carolina—train pesticide applicators through their cooperative extension services.

The issue also hinges on the ageless philosophical debate over the proper role of government regulation. That is, is it better for government agencies to focus on policing and punishing violators of pesticide regulations? Or, is it better for government agencies to stress the promotion of safe pesticide use while taking a more lenient stance against violators? The state legislature is the proper place to resolve such questions.

FOOTNOTES

[1] U.S. Environmental Protection Agency, "Unfinished Business: A Comparative Assessment of Environmental Problems," Office of Policy Analysis, February 1987, pp. 84–86.

[2] The Center calculated violation rates by dividing the number of violation incidents in each applicator type by the number of applicators in that category and multiplying the result by 100. Violation incidents were defined as pesticide cases that culminated in hearings or settlement agreements through the Pesticide Board or the Structural Pest Control Committee.

[3] Currently, North Carolina requires notification in only two limited circumstances: aerial applicators seeking to spray in restricted areas, such as parks; and those spraying within 1/2-mile of registered apiaries (bee colonies).

[4] Aerial applicators were required to carry liability insurance under the N.C. Aerial Crop Dusting Law (G.S. 4B, Chapter 105) from 1953 to 1971. The General Assembly dropped the insurance requirement while enacting the N.C. Pesticide Law of 1971.

[5] The Center's survey identified 10 states that require pesticide applicators to file usage reports, including California, Connecticut, Kansas, Massachusetts, Missouri, Montana, New Hampshire, Rhode Island, Utah, and Vermont. In addition, 13 other states require applicators to report their usage "sometimes."

[6] N.C.G.S. 143-437.3.

[7] According to the N.C. Pesticide Section, manufacturers registered 375 restricted-use pesticides for use in North Carolina in 1992—accounting for 3.0 percent of all registered pesticide products and 8.3 percent of all agricultural-use pesticides.

[8] In response to criticisms, the N.C. Pesticide Board agreed to consider new nominations to the Pesticide Advisory Committee at its August 9, 1994, meeting. At that time, the Board replaced the farmer, John McLaurin of Scotland County, with Dave Adams, a retired N.C. State University forestry professor.

[9] N.C.G.S. 106-65.23.

[10] N.C.G.S. 113A-104.

[11] "Citizen's Guide to Pesticides," U.S. Environmental Protection Agency, Washington, D.C., Publ. No. 20T-1003, 1990, 24 pp.