

Addendum 1 to letter from So. Region School IPM Group: Detailed Comments on *School IPM 2015*

Comments on fair and balanced views of role of pesticides in school IPM programs:

- Caution should be taken in wording of the often-repeated theme of this document. “More than 50 published studies and surveys since 1994 have documented deficiencies including unmanaged pest infestations, unsafe and illegal use of pesticides, and unnecessary pesticide exposures to individuals at schools.” P. 6 ¶ 1. In this case more than 50 studies were not undertaken to show risks, but to document the current state of IPM in different states. Also contributing to this count are a number of non-peer reviewed reports by anti-pesticide advocacy groups. While there may be value in some of the information in these articles, the PMSP should be careful in how they are cited—particularly when they are integrated alongside more careful, scientifically designed studies. A better citation of these articles might read: “More than 50 formal surveys and advocate reviews of state and local pest control programs in schools since 1994 show significant need for improvement in the way pests are managed and the way pesticide hazards are minimized to keep our children safe in school.”
- P. 6 ¶ 3. “When needed, pesticide products are selected that minimize toxicity and potential for exposure.” Schools should be encouraged to select pesticides that pose minimal risk to children and other school users. **Toxicity is a component of risk, but is not the determining factor. A highly toxic pesticide active ingredient can be used very safely in a school** if it is applied at a low concentration, in a formulation designed to minimize the risk of exposure, etc. A more accurate statement would be “... minimize toxicity *or* the potential for exposure.” This is a better description of how to minimize pesticide risk-- a subtle distinction, but important, in our opinion.
- Unnecessarily prejudicial and at times inflammatory language is used inappropriately in places in the document. For example, why state “hazardous pesticides” or “neurotoxic pesticides” when the term pesticide is sufficient? P. 8 ¶ 5.
- **The document lapses into inappropriate editorial comment in numerous locations**, including p. 10 ¶ 1: “Unknown or poorly understood potential hazards [of pesticide use in schools] argue for additional levels of protection including exposures to multiple pesticides...exposure to chemicals in combination with pesticides... and the general difficulty in attributing chronic illnesses to any one particular issue.” Such statements are clearly speculative and seem to imply that pesticides may be the cause of any number of unexplained illnesses suffered by children. In the same paragraph it is implied that proper pesticide applications can “contaminate baseboards and walls. Such contamination undoubtedly results from inappropriate treatment of baseboards, a practice that should be discouraged. It is our view that the use of inappropriate kinds of applications should be singled out in the PMSP, not the use of pesticides as tools in general.
The alternative view that pesticide levels may be low or infrequent enough to pose a negligible threat is not mentioned, even though there are studies that seem to indicate that at least acute pesticide illnesses in schools are relatively rare.
On p. 57, ¶ 4, the writers editorialize (out of context) against pesticide use in schools for no apparent purpose. We recommend that the document devote a section, perhaps in the introduction, to the cases for and against pesticides. After the case has been made it should not be necessary to repeat the case against pesticide use over and over. (While acknowledging the truth in the comment from this section that pesticide applications are “generally temporary measures and do not solve the underlying problem”, it should be noted that pest removal is often necessary before remediation of the underlying problem.)
- While generally agreeing with storage and licensing recommendations on p. 53 in Table 7.1, Page 54 has a number of statements that we disagree with. In ¶ 1, it states that “all pesticide

applications should be made only after detection of a verifiable pest problem, accurate identification of the pest, review of all available options and use of non-chemical strategies.” This oversimplified approach to pesticide use neglects the idea that some pesticides are best applied prior to pest appearance (e.g., pre-emergent herbicides for weeds, fungicides on certain plants for preventive disease control) or in locations where pests are known to be perennial problems unless controlled (e.g., termites and fire ants). We do not advocate calendar-based pesticide applications, but note that in some limited cases prophylactic treatments are justifiable in an IPM program. Also, in our opinion, **schools should not necessarily have to go through the whole trial and failure process, starting with the least toxic materials, every time a pest problem occurs.** Past experience and advice from experts can serve to guide a school to the best and safest combination of tactics. Wording of this section could be changed to: “In most cases, pesticide applications should be made only after detection of a verified pest problem that exceeds a threshold level for the pest. Exceptions to this rule might include pesticide applications made in anticipation of a pest that research or experience dictates will occur with a high degree of regularity in the absence of the application (e.g., pre-emergent herbicides for certain weeds, or bait applications for fire ants). Routine or regularly scheduled pesticide applications should be rare, especially in indoor environments.”

Page 54 ¶ 3 details how a notification policy be developed. We agree that schools should have a notification policy, but disagree that the PMSP should dictate the appropriate time intervals, placement and manner of notification.

The next several paragraphs on this page attempt to lay out a method for encouraging use of least *toxic* pesticides in schools. **We agree with this effort, but feel the emphasis ought to be on encouraging schools to develop a process for selecting and using the least *hazardous* options available.** For example, page 54 ¶ 4 recommends that schools develop a “pre-approved list” of pesticides. This approach may be appropriate in limited circumstances or for certain school districts as part of a contract with a knowledgeable pest management professional, but in general we find the practice of restricting pesticide use to a static “list” too restrictive and in need of continuous updating. Instead we believe the document should recommend the district working with its applicators to identify preferred products using signal words or other published criteria, leaving the details up to the school district or state regulatory agency.

Page 54 ¶ 5 recommends that products with WARNING or DANGER signal words not be used. **Although we generally support the concept of using the least toxic material that will provide satisfactory control of a pest, a blanket prohibition of the use of certain pesticides without regard to the actual product or situation is overly cautious. In our opinion, if this rule were adopted by schools it would eliminate some useful and (sometimes) irreplaceable tools from the IPM toolbox.** This rule also ignores that in many cases signal words are assigned by the EPA because of potential hazards to *applicators*, and not because of risks to people in the treated environment. In other cases risks can be adequately mitigated by following prudent safety precautions or application techniques. We support policy mechanisms that encourage schools to use the least toxic products in the safest possible ways, but do not believe that prohibiting schools from using large categories of products is in the best interests of IPM implementation. By associating IPM with an increasingly limited set of tools, we believe we may actually *discourage* adoption of IPM among school districts, especially in states where it is not mandatory.

For the same reasons we object to ¶¶ 6-9 on page 54. Certainly we would like to see products used in schools that are not possible carcinogens, endocrine disruptors, or broad-spectrum neurotoxins. When alternatives exist, we would like to see schools take advantage of those alternatives. However there are problems with these recommendations: (1) Schools generally

lack the expertise or resources to recognize or identify such products; (2) classifications of products as carcinogenic or as endocrine disruptors are difficult to find and may be subject to change as additional studies are conducted; (3) inclusion of such language presumes that the regulatory system does not consider such data when issuing label registrations. In fact the U.S. EPA employs toxicologists and experts to review all registrations, consider the implications of such data, and adjust pesticide label requirements accordingly; (4) there are no easy-to-interpret warnings on labels that can be used as points of reference by a pesticide applicator or school decision maker; (5) where data may be available it is often buried in technical EPA websites or in a variety of other less “official” sites.

- On page 55 ¶ 1, this requirement would remove from consideration many or most insecticides.
- On page 55, ¶ 2, high mobility pesticides are principally an environmental concern in areas of the country with highly water permeable soils. Also, this paragraph is so broadly written to also have the effect of excluding use of termiticides with long half-lives (a property that is essential for this category of products) and other longer residual soil-applied pesticides for, say, fire ant control in areas where fire ants pose a special risk to children. **While we recognize and normally encourage the use of products that break down quickly in the environment, we note that use of pesticides with longer residual activity does not necessarily mean increased risk, as use of longer lasting products reduces the need to reapply pesticides on a more frequent basis.**
- On page 55, ¶ 3, a requirement to restrict schools to using only premixed or RTU insecticides would significantly increase the costs of pesticides. While we acknowledge the common sense of avoiding pesticide mixing around areas where children are active, we are unaware that any history of problems connected with pesticide mixing on campuses. In addition, some state laws are in conflict with this recommendation. In Louisiana, for example, termiticides and other insecticides are required to be mixed at the job site. The reason for this requirement is concern that premixed pesticides add to risk of significant spills on the road.
- On page 55, ¶ 5(c) requiring all bait stations to be securely attached to floors would be difficult and unnecessary when placed properly, i.e., out of sight and reach of children.
- In the coverage of pediculicides for control of head lice (p 95), referring to doctor prescriptions, the writers note that certain prescription treatments are “**extremely hazardous** [author’s emphasis] to children and not recommended.” This seems an inappropriate editorial comment for a strategic plan, especially since it refers to a doctor’s prescription and not with school IPM.

Concerns about accuracy or lack of data support:

- P. 6 ¶ 2. “Pest complaints and pesticide use in schools and other public buildings have been reduced by 71-93% through [IPM] with no long-term increase in costs.” Citation needed. We dispute that such results will always be achieved with no increase in cost, as implied by this statement. This has not been well documented and does not make logical sense for some school districts that are currently *under*-spending on pest control (which includes many districts). It is important that we be accurate on this point because we stand to lose credibility when we make claims for IPM that cannot be substantiated or that prove later to be incorrect.
- **We strongly object to using *Beyond Pesticides* reports (e.g., *Beyond Pesticides 2003, 2005, 2007; Beyond Pesticides and School Pesticide Reform Coalition 2003; Owens and Feldman, 1998, 2002*) as citations alongside peer-reviewed citations.** Reports by this anti-pesticide advocacy group represent a non-scientific bias and should not be considered accurate or authoritative. Such citations, when used, should be clearly identified as representing an

advocate's point of view. E.g., P. 8, ¶ 6; P. 9 ¶¶ 5,6,7; Better references could certainly be found, e.g., on p. 9 ¶ 6.

- On p. 9 ¶ 7 **it is implied that legal and proper pesticide use in schools may be impacting the learning ability and long-term health of school children. To our knowledge there is no scientific evidence to support that belief at this time.** The paragraph seems unnecessarily full of innuendo and carries an anti-pesticide slant. "A number of pesticides commonly used in schools have been identified as neurotoxins or possible or known carcinogens or developmental and reproductive toxins by [EPA] and other authorities." The discussion fails to note that many pesticides are neurotoxins by design, and yet the differential toxicity between insects and humans is nowhere acknowledged. A neurotoxic pesticide can be used safely if it breaks down quickly (as is the case with many botanical and synthetic insecticides) or is applied in areas or using formulations with low or no risk of human exposure.
- On page 10, ¶ 1 it is stated that information to fully document the extent and impacts of pest problems and pesticide use in schools is not collected. While impacts of pesticides may not be fully documented, there *have* been notable studies on the effects and impacts of pesticides in and around schools. Alarcon et. al (2005) for example, analyzed surveillance data from 1998 to 2002 of 2593 persons with acute pesticide-related illnesses associated with exposure at schools. The data on which this study is based are limited in scope and detail, however **it appears that occurrences of pesticide-related illnesses are real though relatively low in frequency--approximately the same as exposures to industrial disinfectants (cleaners) such as bleach.** Other state surveys, say from California and Texas, have documented varying levels of complaints about pesticides in schools; however these are not reviewed.
- A citation is needed, or the statement should be changed in the reference to permethrin in Table 8.33 b). It states that permethrin has a lower mammalian toxicity than pyrethrins (not true for the a.i.) and does not cause allergic reactions, implying that pyrethrins do cause allergic reactions. According to the National Pesticide Information Center, purified pyrethrins extracts (the most commonly used form) have not caused allergic dermatitis in guinea pigs—though pyrethrins may be *irritating* to some people. <http://npic.orst.edu/factsheets/pyrethrins.pdf> The same text box lists permethrin as a possible carcinogen (EPA). Again, according to NPIC, "More recently, the U.S. EPA has classified permethrin as 'likely to be carcinogenic to humans' *by ingestion*. This rating is based on benign lung and liver tumors found in mice and similar, though inconclusive, evidence in rats, as well as corroborative Structure-Activity Relationships (SAR) information." **The study and interpretation of cancer rating systems is complex and difficult to explain in an unbiased manner. Though not convinced that this is the purview of a PMSP, we believe that if this subject is to be covered, readers are owed a careful and complete explanation of the implications of such statements.** Otherwise readers are left with an impression that scientific evidence exists that legal and proper use of such pesticides in schools are likely to result in increased cancer risks.

Comments on strategic plans:

- The charge for PMSP developers, as we understand it, is to develop a listing of research, regulatory and extension priorities for a given area of IPM. The plan added an additional set of priorities, labeled Management priorities (p. 14), but never clearly explained how they fit into, or differed from the above three standard categories.
- The currently listed priorities were the result of a group brainstorming session and should serve as a good first step in identifying priorities for action; however, we feel that priorities will differ from region to geographic region. These priorities need additional input and refinement from a

broader array of stakeholders. Ideally, we feel there should be sets of priorities for different regions of the country.

- To be most useful, strategic plans should also identify obstacles or constraints to the success of the various priorities. The plan should identify these obstacles and create a secondary list of priorities that are ordered according to their likelihood of success. The current listing of priorities (pp. 14-17) seems idealistic and not very practical considering current lack of awareness or concern about pest control in many school systems and lack of governmental or local funding for IPM diffusion. **We encourage you to expand your work on priorities, soliciting additional ideas and rankings of priorities from a wider array of stakeholders, including fair representation from the southern region.**
- Under overall timelines and milestones, it is unclear as to how the various activities are to be funded, who will be the implementers in various states, and how obstacles to completion will be overcome. Some objectives are clearly impractical. For example, on p. 20 under the 2008 objectives, **one of the objectives is to build a database of people with pest management responsibilities in each school district [throughout the country]**. First, in most states there are no single responsible persons for pest control in a given school district; many schools coordinate their own pest control, have separate individuals for landscape and structural pest control, or contract all pest control responsibilities to outside contractors. Second, no states, to our knowledge, currently possess full lists of individuals. Third, should full or partial lists exist, many states would be reluctant to provide mailing lists to a national school IPM group (which is not identified in the document), for fear of losing control or compromising their relationship with carefully courted contacts. **A national coordinator should instead be charged to support regional groups and/or individual states in collecting local information on their own school districts. This would, we believe, be more effective than attempting to create a national database that (we fear) could easily be used to bypass the state and local change agents.**
- Metrics are important to establish with the School IPM 2015 plan; however, there are obstacles to outcome measurement that have not been adequately addressed. One comment directed to the writing team last year was that the national school IPM report card (Appendix C) document would be difficult for most states to complete accurately. **As it currently exists, we believe the report card is too long and complicated and many states will not have data allowing them to accurately answer questions.** We believe it would be better conducted as an oral survey, where the surveyor could better assure (than a letter) that the best contact person in each state was contacted and where a level of certainty about the data could be better assessed by the surveyor. **We also believe that grant dollars will be necessary to assure that quality surveys could be supported in states where data is unknown or does not exist.** We believe that a random survey of selected states every two or three years would be more useful than an annual census of all states with poor, inaccurate or missing information.

Comments about length of document:

- Part of the length of the document has to do with its redundancy. Page 61 in Chapter 8 is an example. Paragraph 1, starting with “Pesticides should not be used on a routine or calendar-based schedule...” is unnecessary and repetitious. (Keep paragraph 2, but modify as follows: “Pesticide options that reduce potential for exposure include insecticide baits. **Baits may be applied in a broadcast fashion** or can be delivered in pre-manufactured, enclosed bait stations and gel or liquid baits placed in cracks and crevices. Effective baits are available for most nuisance ant species.”) Paragraph 3 can be eliminated as general discussions about pesticide

selection and use should be consolidated in a separate section and do not need to be repeated over and over.

- As we understand the purpose of PMSPs, the focus of the document should be to summarize current situation and needs with respect to regulatory, research and extension priorities. We fail to see the relevance of, and usefulness of exhaustive listings and categorizing of pesticides for every major pest (Chapter 8), with relatively little attention paid to research, extension or regulatory priorities for these pest problems. More input from a wider group of people is certainly needed on these research priorities.
- In Chapter 8 pesticide options are provided for each pest reviewed. These options are divided into CAUTION labels with minimal exposure risk, CAUTION labels with greater exposure risk, and CAUTION labels with greater potential risk for toxicity or exposure. These categories seem to us to be based on subjective judgments with little data to support the assertions, and little relevancy to the purpose of the overall strategic plan. Citations should be provided, or, if data is lacking, the need for more data should be listed in the research needs section. We feel that rather than listing individual active ingredients (which change relatively quickly) it would be better to list principal chemical families and/or formulations in use.
- There is repetition of information in chapters 6 and 8. These chapters could easily be combined.
- Over 6 pages alone are used to cover the issue of head louse treatment, a medical pest problem and one that does not require environmental treatment.
- Some of us feel Chapter 5 could be eliminated. See comment in “Other Comments” below.

Other comments:

- The term “high-level IPM” is introduced and used repeatedly throughout the document, yet there is no section in the introduction (Chapter 2) that discusses the *IPM continuum* in schools. This would be helpful in defining what the authors mean by high-level IPM and could provide a basis for identifying where schools stand in the IPM continuum. A continuum model would be a useful contribution to the dialogue about school IPM. Table 4.1 might be more appropriately placed in the introduction where the high-level IPM concept is introduced.
- Chapter 5, on the adoption process in schools, provides a generalized discussion on the innovation-diffusion process as it relates to school IPM. Such scholarly, theoretical information about a concept could have been referred to by citation, if necessary, and in our opinion is of limited value to the PMSP. What would make this section worth keeping would be to include case studies of how the diffusion process has been successfully implemented in schools, using the diffusion/adoption process. Of equal importance, however, is that the chapter does not provide alternative models to the innovation-diffusion process when at least one arguably successful alternative clearly exists. Experience over the past ten years seems to indicate that the most successful states in implementing IPM are those where some form of IPM mandate has been enacted by state governments (e.g., Texas, California, and Michigan). **Two major shortcoming of this PMSP are (1) the lack of discussion about alternative approaches to encouraging adoption of school IPM, and (2) how to successfully overcome barriers to the diffusion process**, most especially how to persuade decision makers, school maintenance departments, principals and other to adopt IPM. This seems to be a major hurdle to IPM adoption, and one that has not yet been solved satisfactorily.
- For such a large document, this is by necessity a sample, and not a comprehensive list of concerns about the *School IPM 2015* PMSP. In many instances time has not allowed us to suggest alternative approaches or language to the plan (please see addendum 2 for additional comments on Chapter 8). We have, by necessity, been restricted to a critical appraisal of the

weaknesses of the document. We look forward to a true place at the table in providing constructive suggestions on later versions of this document. We encourage the national IPM team to set aside a significant portion of a day, perhaps at the ESA meeting in Indianapolis to allow for open constructive review, criticism and update of the PMSP. Last year's meeting in Reno was not, in our opinion, well structured for frank and open discussion about the plan.

Final Draft