Mid-Term Review of Integrated Pest Management Centers

February 14-17, 2006

Review Team Members

Dr. Susan Barefoot, Associate Dean & Chief Operating Officer, Agricultural Experiment Station; Clemson University
Dr. Al Fournier, IPM Manager; University of Arizona
Mr. Arnet Jones, Branch Chief, Office of Pesticide Programs, U.S. Environmental Protection Agency
Dr. Gary Lemme, Dean; South Dakota State University (Team Leader)
Dr. Charles Mellinger, Director of Technical Services; Glades Crop Care, Inc., Jupiter, Florida
Dr. Richard Stuckey, Surprise, Arizona

USDA-CSREES asked the Review Team to perform a mid-term review of its four regional IPM centers. The Review Team's work was based on written materials and presentations provided by CSREES and each Center. The Team also heard presentations from a variety of government and university organizations and held conference calls with stakeholders from each of the four Centers. The Team also held individual meetings with the leadership of each IPM Center.

The Review Team commends the USDA-CSREES for conducting a mid-term review of the Integrated Pest Management (IPM) Center program to establish a culture of continuous improvement. A mid-term review provides an opportunity for assessment, recognition of accomplishments and the implementation of corrective initiatives by IPM Center directors. The leadership teams from the IPM Centers are to be commended for their full and open participation in the review process. The review team is confident that the IPM Center leadership teams will advance the goals of the National IPM Roadmap through their Center programs.

The IPM Centers are a potential model for other USDA-CSREES regional efforts. Many of the guiding principles and protocols developed by the Centers will be applicable to other regional center-based programs. Communications among existing regional center programs should be enhanced to strengthen and permit shared learning and synergy among USDA-CSREES centers.

The Review Team is impressed with the success of the IPM Centers in transitioning from the former National Pesticide Impact Assessment program to a broad spectrum integrated pest management program. The IPM Centers have been successful individually and as a network. The engagement of a wide spectrum of nontraditional partners and reinforcement of established IPM networks by the Centers have facilitated IPM adoption across the nation. The IPM Centers have proven to have the capacity and flexibility to coordinate a positive response among land grant university, public agency and private partners to emerging pest management issues on a regional and national scale. State IPM programs have been positively impacted through multi-state efforts fostered by the IPM Center grant programs. New relationships among scientists, educators, agency

personnel, non-governmental organizations (NGO), and private businesses built in response to IPM Center grant requests for application (RFA) continue to reap benefits through additional externally funded IPM activities.

The Review Team was asked to respond to the following specific questions:

#1. Is the IPM-Center concept viable?

Yes. They are synergistic and increase efficiency, communication, and connections with stakeholders. The IPM Centers have the flexibility to address issues regionally. Each center has demonstrated the capacity to address a specific issue and then share it with other regions to leverage for a national impact.

#2. Are the IPM Centers meeting the original goals and objectives?

The second request for applications for the Regional IPM Centers included eight specific objectives. Each of these objectives is listed below, followed by the review team's comments.

- Objective: Serve as a focal point for interactive communication. In the short time the Centers have been in existence, they have done a good job of serving as regional hubs for communication.
- Objective: Involve stakeholders in identifying needs and priorities for IPM in serving agriculture, food, and natural resource systems. This is quite true for 3 of the 4 regions, with the North Central region being the exception. The North Central region recognizes this and is in the process of re-establishing stakeholder input.
- Objective: Facilitate the development of knowledge, information, technology, communication, and education to enhance IPM for the benefit of regional stakeholders and the environment. This is being done through numerous channels. The regional centers are meeting this goal and have exceeded it in some cases, developing products for the benefit of their own regions and the benefit of other regions and at the national level.
- Objective: Promote interdisciplinary and multi-organizational collaboration. Without a doubt, this is a strength for all Centers. This principle is apparent in how the Centers are organized and in their cooperative leadership.
- Objective: Facilitate relationships with multiple government agencies. This process has begun. It is a good beginning, but there is a ways to go to develop this interaction to the full potential. Expansion of the number of funding agencies remains an objective.
- Objective: Promote collaboration to minimize duplication of effort. There are very good working relationships among the centers. A good example is the PestAlerts initially developed by the North Central IPM Center. They still are produced by the North Central IPM Center but are authored by all regions.

- Objective: Organize responses to emerging regional issues. The Centers have been successful in this. A good example is the Southern IPM Center's work on Asian soybean rust.
- Objective: Manage resources to facilitate regional IPM programs and activities. The Centers have shown impressive and creative use of limited resources to maximize output of projects from the Centers.

#3. Have the IPM Centers taken any broad initiatives?

Each of the regional IPM Centers has taken broad initiatives in delivering programs and has collaborated with each other on other broad initiatives such as:

- National soybean rust risk management program
- Pest Alerts
- Northeast Urban and Community IPM workshop
- Northwest regional working group
- National IPM webpage and database center
- Water Symposium
- School IPM program
- Engagement of environmental and non-agricultural NGOs.

#4. Are there any activities, programs, approaches, or practices that all four IPM centers should consider implementing?

All four IPM centers are functioning well. In some cases, the Review Team believes there is an activity in one region that would benefit all four centers. These include:

- The Northeastern IPM Center's Strategic Plan The Strategic Plan, which is directly related to the National Road Map for IPM, was developed for 2005-2007 by Center staff and collaborators. It contains an overall statement of the Center's mission, outlines the goals needed to achieve the mission, and identifies the strategies that should be used to achieve each goal. The plan also identifies the core activities that are directly related to the strategies and goals. The Strategic Plan is clear and logical and is the result of a collaborative process with the Advisory Committee. One of its major strengths is that it ties specific activities directly to the broader goals and mission of the Center. The Review Team believes that the Centers should consider developing a timeline of activities that would enable staff to identify specific activities and achievements. This could help the Centers develop means to measure concrete achievements that relate to each center's progress in promoting the adoption of IPM in the region.
- Sponsor Meetings and Symposia with a Regional Focus Two examples of meetings sponsored by the Centers in 2005 were discussed during the review.
    - The Western IPM Center sponsored a workshop titled "Water, Wildlife, and Pesticides in the West: Pest Management's Contribution to Solving Environmental Problems."
    - The Northeastern IPM Center sponsored "The Northeastern Regional Urban and Community IPM Conference."

  Both meetings resulted in several positive outcomes:

    - Heightened awareness of the Centers and the importance of adopting IPM practices.
    - Networking opportunity for diverse participants (e.g., representatives from land grant colleges, commodity groups, advocacy groups, industry, various government agencies and programs)
    - Each meeting was used as an opportunity to identify regional IPM priorities.
- Annual Reports The Review Team believes that each center would benefit from an annual report that summarizes each center's accomplishments and successes for the preceding year. The Northeastern and Western centers have prepared annual reports in the past, but the Review Team believes these should be re-focused. Highlighting accomplishments and successes would heighten awareness of the centers, build upon existing networks, and most importantly, would encourage broader adoption of successful IPM practices that the centers had facilitated. A general report covering all four centers should be prepared each year. In addition, a short one to two page non-technical report describing significant accomplishments and impacts should be prepared for marketing the Regional Centers' activities to policy makers and the general public.
- Provide Feedback to Pest Management Strategic Plan Participants One presenter suggested that centers should develop a follow-up system for following up with PMSP participants that would notify participants of the PMSP's status. This could also be used to contact interested parties if the PMSP is revised at a later date.
- Increase Partnering with other Federal Agencies and Programs on a Variety of Activities (e.g., NRCS, Regional Plant Diagnostic Networks) One prominent example that emerged was the IR-4 program. Opportunities for increased IR-4 collaboration include:
    - Invite IR-4 staff to PMSP meetings
    - Use the 25 IR-4 field research centers for demonstration plots
    - Partner with IR-4 on regional pilot efficacy program (if funding available)
    - Develop outreach to growers of and groups representing specialty crops.

  This could help overcome the perception that IPM centers are overly responsive to the needs of field crop producers, presumably at the expense of specialty crop producers. Similar interactions with other agencies and programs could help increase efficiency and reduce duplication of efforts.
- Consider Farmer-Level Grants USDA's Sustainable Agriculture Research and Education (SARE) and other programs provide grants to individual growers. The IPM centers should explore farmer-level grants.
- Develop Linkages with Land-Grant and Other Institutions on Graduate Research The IPM centers should consider partnerships with Land-Grant and other universities that would take advantage of graduate research projects. This could facilitate the centers' emphasis on results-oriented research and help centers leverage other sources of funding.
- Encourage Whole Systems Approaches to Pest Control Two presenters suggested that the IPM centers should encourage research that considers a cropping system approach to pest control that considers a range of factors that affect pest

infestation. The Review Team suggests that the centers consider this when awarding grants.

- Consider Regular Updates from Centers to Stakeholders Centers should consider regular (monthly, bimonthly or quarterly) communication with stakeholders to outline accomplishments and advise of plans for upcoming crop profiles, PMSPs, stakeholder meetings, etc.

#5. What priority should the IPM Centers give to additional responsibilities or the pursuit of new opportunities?

This question addresses priority setting issues and the procurement and allocation of resources. Each Center has established a process to set priorities with its stakeholders. Those priorities are filtered through the lens of the IPM Roadmap; the IPM Center's objectives; regional and national needs; and scientific literature. Priorities for each Center appropriately differ by region and reflect the needs of regional stakeholders.

The Review Team recognizes that assuming additional responsibilities or pursuing new opportunities requires new Center resources. We encourage each Center to continue to partner with other centers to use current resources efficiently, with each Center focusing on its unique strengths and priorities and sharing its products (crop profiles, PMSPs, IPM guidelines, etc.) with the entire system to ensure an effective use of limited resources. Examples of current partnerships between Centers include but are not limited to the following:

- PestAlerts authored by all regions but published by the North Central IPM Center
- Bedbug survey conducted by NE IPM Center and shared with other Centers for dissemination
- Grant-writing training.

We also encourage each regional IPM Center to continue to search for additional resources by partnering with other agencies, businesses, foundations, and other partners to address IPM issues. As funding increases, staffing to address these new opportunities will also increase. Examples of current partnering that has resulted in increased resources include:

- Western Region IPM Weather Systems Work Group formed with Center seed funds secured a $600,000 grant from the USDA CSREES NRICGP.
- Southern Region IPM led the $2.3 million National Legume Risk Management Tool Development Project funded by the Risk Management Agency and CSREES.

#6. Have the IPM Centers had an impact on multi-state collaboration and state-level activity?

One of the expectations in the formation of the regional IPM Centers was that efficiencies would be gained by coordination of IPM efforts across states, and that this structure would help to compensate for shrinking resources available at the state level. The Centers represented a new way of doing business, and included combining expectations and responsibilities from the old NAPIAP program (e.g., pesticide comment coordination and

crop profiles) with the charge of promoting adoption and implementation of IPM. Because the funding for the Centers came from NAPIAP funds and their charge to facilitate IPM, the Center model required combining the efforts previously conducted by people in separate programs. This led to a rocky start for the Centers in many cases, and some serious challenges in gaining buy-in from state IPM Coordinators. However, the Center leaders have made great strides in bringing people and partners together to form a sound foundation for multi-state collaboration, and in fact they have made significant progress on building on that foundation. Many of the stakeholders participating in the review process indicated that the IPM Centers have had a positive impact on multi-state collaboration and communication.

One important mechanism for encouraging this collaborative spirit has been in the leadership structure of the Centers themselves, generally including both IPM and NAPIAP representation. It appears that this kind of partnership at the regional level has, in most cases, encouraged buy-in from state-level participants representing the different roles in their states.

Another way that the IPM Centers have encouraged multi-state collaboration has been in the structure of the RFA for the various grant programs that they manage. In most cases, multi-state collaboration has been strongly encouraged in the RFAs, or is a requirement (e.g., RIPM). This has enhanced multi-state collaboration on research and extension projects targeting issues that span multiple states. In particular, some of the Centers (NC, NE, and W) have encouraged multi-state collaboration through working group proposals that bring people from multiple states together around a commodity or an issue. Although often relatively small grants, these have encouraged collaboration and have often led to some important outcomes and additional funding for projects.

Another important form of multi-state collaboration has been in the form of Information Networks and similar tools for facilitating communication of pesticide use information from knowledgeable stakeholders residing in the states back to decision makers at EPA and USDA. The volume of information requests varies dramatically from region to region, based on the crop mixtures in those states. For example, the Western Region fields large numbers of requests on an annual basis, while far fewer are handled in the Southern Region. Feedback from EPA indicates that the regionalization of these requests through WIPMC information networks has greatly improved the quantity and quality of information to decision makers. As some review participants pointed out, it is not reasonable or efficient in many cases to employ a single contact in each state to handle these requests. Depending on the nature of the request, coordination through the IPM Centers may increase efficiency.

Overall, the IPM Centers have done an outstanding job of facilitating and enhancing multi-state collaboration and communication. Respondents to Frank Zalom's survey listed team building, communication between states and new regional projects and publications as major accomplishments of the IPM Centers. In fact, there are several instances where the Centers have gone above and beyond this charge to enhance collaboration at the multi-regional or national level.

- Pest Alerts originated in the NC region, but are now being produced and shared among regions with a consistent branded look.
- The NE IPM Center developed the framework for the website which is shared by all regions, just pulling the information they need for their own websites.
- Soybean rust national risk management program was an effective multi-state response to a critical issue that was managed and coordinated by the S IPM Center.
- In some cases, PMSPs coordinated by the W IPM Center have represented a multi-regional perspective.

Sharing efforts and projects among the IPM Centers has led to additional efficiencies and should continue to be encouraged. On the negative side, some respondents to Frank Zalom's survey of administrative advisors and regional coordinating committee chairs indicated that the Centers had not impacted regional collaboration—that these efforts were going on before. It is also important to point out that there are instances where multi-state collaboration is neither needed nor appropriate. For example where IPM efforts for a particular crop do not cross state lines.

#7 The activities are being farmed out to the states through the grants. Are state activities enhanced by the existence of the centers?

As resources in the states decrease, so does the ability of the state to address those issues. The IPM Centers facilitate the contacts with the states to help overcome this limitation As state resources decline, the IPM Centers can enhance efficiency on activities that states themselves will not be able to meet, particularly for those activities that cross state lines.

The 2003 RFA for the IPM Centers included the requirement that Centers "organize and develop multi-state communication networks that engage state IPM programs." This has taken different forms in different regions.

Structural components might need to be explained. Through regionalization, some questions were raised by state IPM coordinators about their roles. These state IPM coordinators and/or "state contacts" are clearly links to the state level interests, and many of them serve on Advisory Committees and/or Steering Committees. Some actively participate while others resist participation, but the Center leadership has actively tried to engage and include them.

#8. Are Stakeholder Advisory Committees Working Properly?

Yes, by and large. The Review Team recommends the following approach after evaluating the successes and challenges of the committee structure and contributions at the four regions:

- All Centers should have an Advisory committee comprised of representatives from the stakeholders community
- The number of members should range from 12 to 25

- A rotational system should be established to assure all members of the stakeholder community are included
- The steering committee, as the decision maker and priority setter, be selected from the advisory committee.

National Recommendations

Issues currently being addressed

The following recommendations are currently being done and the Review Team encourages continuation and expansion where feasible:

- CSREES should provide future funding for continuation of the IPM Regional Centers on an equal distribution basis.
- Continue support of the Regional Concepts and the benefits therein derived
- Maintain the freedom of individual Centers to develop their own programs and priorities; Centers each have their unique priorities for their stakeholders
- Endorse Center communications with stakeholders in their region and the interregional communication and collaboration among Center directors and staff.
- Sharing of resources and programs across regions is one of the strengths of the Centers. Several examples have been provided throughout this report. These collaborative efforts should continue to be fostered wherever appropriate.
    - Pest alerts
    - Crop profiles, crop timelines, pest management strategic plans
    - Information technology
    - Web based development
    - Soybean rust project
    - School IPM initiative (in progress)
    - Newsletters
    - Insecticide Resistance Action Committee (IRAC)
    - National IPM Conference
    - Phone training sessions
- Support broad based representation of stakeholders on advisory committees
- Consider the Regional Centers' success as a model (prototype) for other future CSREES programs

Issues that need to be addressed or significantly improved

The Review Team believes that the Centers could benefit from additional support in Washington. The role of CSREES in leading and supporting the Centers should be defined. The details of this support should be agreed upon by CSREES management and the Center directors.

- Centers strive to be timely in response to stakeholders' needs, and by and large are doing a good job. However, CSREES also needs to be more assertive in response and provide leadership to the Centers. The Centers should clearly communicate their needs to CSREES in Washington.
- Centers need to continue efforts to establish positive relationships with other federal agencies. CSREES enlisting collaborative efforts of other federal partners can be helpful in this endeavor.

- The Centers have increased the number of external funding sources from 2 to 6, from 2003 to 2004, respectively. Strong efforts should be made by Centers to continue to secure external funds to leverage the funds received from CSREES and to help support the additional program efforts required. External funding may come from other federal agencies, industry, commodity groups, foundations, or other regional or state entities.
- To be in compliance with the National IPM Roadmap, strategic plans (as developed by the Northeast IPM Center) and Impact Assessment Evaluations should be developed by all Centers.
- The Centers should continue to encourage full participation of state IPM coordinators into Center activities.
- Partnerships with other organizations should be expanded to create greater awareness of and benefits for the Centers.
- CSREES should develop a remittance plan for other agencies that benefit from the use of and request crop timelines, crop profiles, and PMSPs. Such agencies should establish a means to provide the Centers with advanced notice of their needs for new or revised documents, to help the Centers prioritize their efforts.
- Develop user friendly informative annual reports for mass distribution to enhance Center visibility.

Northeast Regional Recommendations

- In the future Northeast Community and Urban Workshop, consider including school IPM and other interest groups
- Provide advice on developing and implementing strategic plans to other regions
- As the region most heavily focused on urban IPM, consider adaptations to Northeast model that are applicable to urban areas in the other regions.

North Central Regional Recommendations

- Appoint an Advisory Committee of representatives of the stakeholders of region
- When the Advisory Committee is formed, consider an executive committee of the Advisory Committee to serve as the Steering Committee
- Continue efforts to draw input from all IPM coordinators of all states in the region.

Southern Regional Recommendations

- Continue efforts to draw on input from IPM coordinators of all states in the region
- Intensify the effort to develop regional priorities
- While the current program is functioning well, consider partnering with another institution in the future proposal to strengthen regionalism.

Western Regional Recommendations

- Periodically evaluate the need for state(s) non-competitive support
- Develop a specialization that is particularly important to the W IPM Center that can be shared with other regional centers

- Explore IT options for greater participation with Pacific Island members and stakeholders

Impediments to Excellence

- The Centers and CSREES should work toward consistent interpretation of CSREES rules. This will result in more efficient processing of requests and greater flexibility in funding grants and extending their timeframe if necessary.
- The timeliness of host institutions' post-award management processes needs to improve.
- Resource limitations are always an issue. The IPM Centers should continue to leverage their programs with external resources and work to improve partnerships with other agencies and programs.