Pesticide Safety Education Program Update

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Part 1.
PSEP History & Overview

USDA, EPA, and PSEP – A Brief History

- 1914 – National Extension Service founded; tied to agricultural research established through land grant colleges in each state
- 1960s – Pesticide Safety program funded at $1M by USDA; one extension pesticide safety specialist in each state
- 1972 – pesticides classified as general or restricted-use (RUP); Congress expected EPA to utilize USDA/Extension Service for outreach/education of RUP applicators
- 1980s - today – Program broadened significantly to include new topics (endangered species, record-keeping, & many others) and new target audiences (general use pesticide applicators, school officials, consumers, etc.)

Who We Are

- **State level**
  - PSEP Coordinators and staff
    - M.S. or Ph.D. in entomology, agronomy, plant pathology, ag. engineering, toxicology, etc.
    - May be anywhere from one part-time PSEP Coordinator to several staff supported through combination of funds
- **County / regional (within state) level**
  - Extension educators (county agents)
    - Supported through combination of state & county funding
    - Strong relationships with growers, custom applicators, green industries (nurseries, landscape businesses, etc.)

Partnering to Increase Quality & Efficiency of PSEPs

- With other state PSEPs
  - Regional and national meetings
  - Professional development courses
  - Coauthoring and sharing materials
- With SLAs
  - Annual meetings
  - Informal communications
  - AAPSE interactions
- With stakeholders
  - Steering committees
- With other experts
  - Steering committees
  - Speakers at training meetings, coauthors of materials, etc.

Who We Educate / Train

- **Occupational Users**
  - Growers
    - Private applicators
      - Agriculture, turf, greenhouse, livestock, etc.
    - Others
  - Applicators for hire
    - Commercial applicators
      - Agriculture, right-of-way, structural, landscape, forest, aquatic, public health, etc.
    - Registered employees / technicians
  - People whose jobs require occasional application
    - Employees of schools, day/nursing care, etc.
- **People exposed occupationally**
  - Handlers
  - Workers

Who We Educate / Train

- **Non-occupational users / People exposed incidentally**
  - Consumers
- **Other educators**
  - County Extension educators
  - Worker Protection trainers
  - Master Gardeners
- **Health care community**
  - Physicians, nurses, first responders
  - Migrant worker clinicians

What We Teach

- **FIFRA standards + more**
  - Pesticide chemistry, mode of action
  - Toxicity, potential effects, exposure & minimization, etc.
  - Environmental fate, drift, leaching, runoff, volatilization, mitigation methods, etc.
  - Pest biology & identification
  - Pest control strategies and tactics, including integrated pest management (IPM) and alternatives to pesticides
  - Application technology
  - Regulations & policies, both federal (EPA, USDA, other) and state
  - **Any subject that will enhance understanding of how to use pesticides in the safest and most effective way**

Professional Development, 2008: Selected Western Region Meeting Topics

- Nevada chloropicrin incident
- Water quality benchmarks
- Surface water monitoring
- Case study – Lake Davis pike eradication
- Navajo sulfuric acid case
- Container/containment update
- Distance education and testing systems
- Kansas sensitive crops website
- Fungicide exposure case studies

Professional Development, 2008: Selected NC Region Meeting Topics

- Improving joint efforts to better serve clientele
- Herbicide drift garden tour
- Aquatic application demonstration
- Needs of bilingual clientele
- Dicamba resistant crops – grower and registrant perspectives
- Sprayer calibration survey
- What do certification test scores really tell us?

Professional Development, 2008: Selected NE Region Meeting Topics

- Global pesticide use and health impacts
- Emerging urban issues: Bed bug resurgence
- Certification test item writing workshop
- Teaching science to the public: Communicating risk
- Tour / demo: Mosquito treatment
- “Arrest the Pests in Your Nest” video series for homeowners
- Audience response system hands-on use with participants


Part 2.
PSEP Funding

PSEP Funding Sources

- EPA – Base funding in form of pass-through dollars through USDA
- USDA – In-kind (administers the pass-through at no cost; provides part-time National Program Leader; tracks data
- Cooperative Extension (State-level) – Direct funding, in-kind contributions
- SLAs – Grants, assistance in training
- State legislatures – Various types of support
- Grants – Competitive or block, from a variety of agencies (USDA, EPA, others) & organizations
- Fees – From training activities, sales of materials

EPA Funding vs. Other PSEP Support

	2002	2003	2004	2005	2006
EPA	1,880,000	700,000	1,200,000	1,200,000	1,200,000
Other	7,200,000	7,700,000	7,300,000	7,700,000	7,800,000
Total	9,080,000	8,400,000	8,500,000	8,900,000	9,000,000

Current Funding

- EPA's share of funding for PSEP has dropped from 50% in 1976 to ~10 to 20% currently:
  - EPA funds have decreased
  - State PSEPs have increased their income from fees, grants, & other sources
- FY 08 allocation = $1.7 million
  - $1.2 M from EPA
  - $0.5 M from PRIA
  - Not yet received by state PSEPs (as of 10/7/2008

Part 3.
PSEP Accomplishments: Data from USDA Report to EPA

PSEP Report on EPA Interagency Agreement

- Separate handout
- Covers 2001 – 2006
- Presents:
  - Numbers trained for train-the-trainer, certification, recertification, non-certification (consumers, Master Gardeners, health care providers, etc.)
  - Funding sources
  - Examples of a state PSEP from each of the 4 USDA regions:

    Western – Washington

    North Central –Illinois

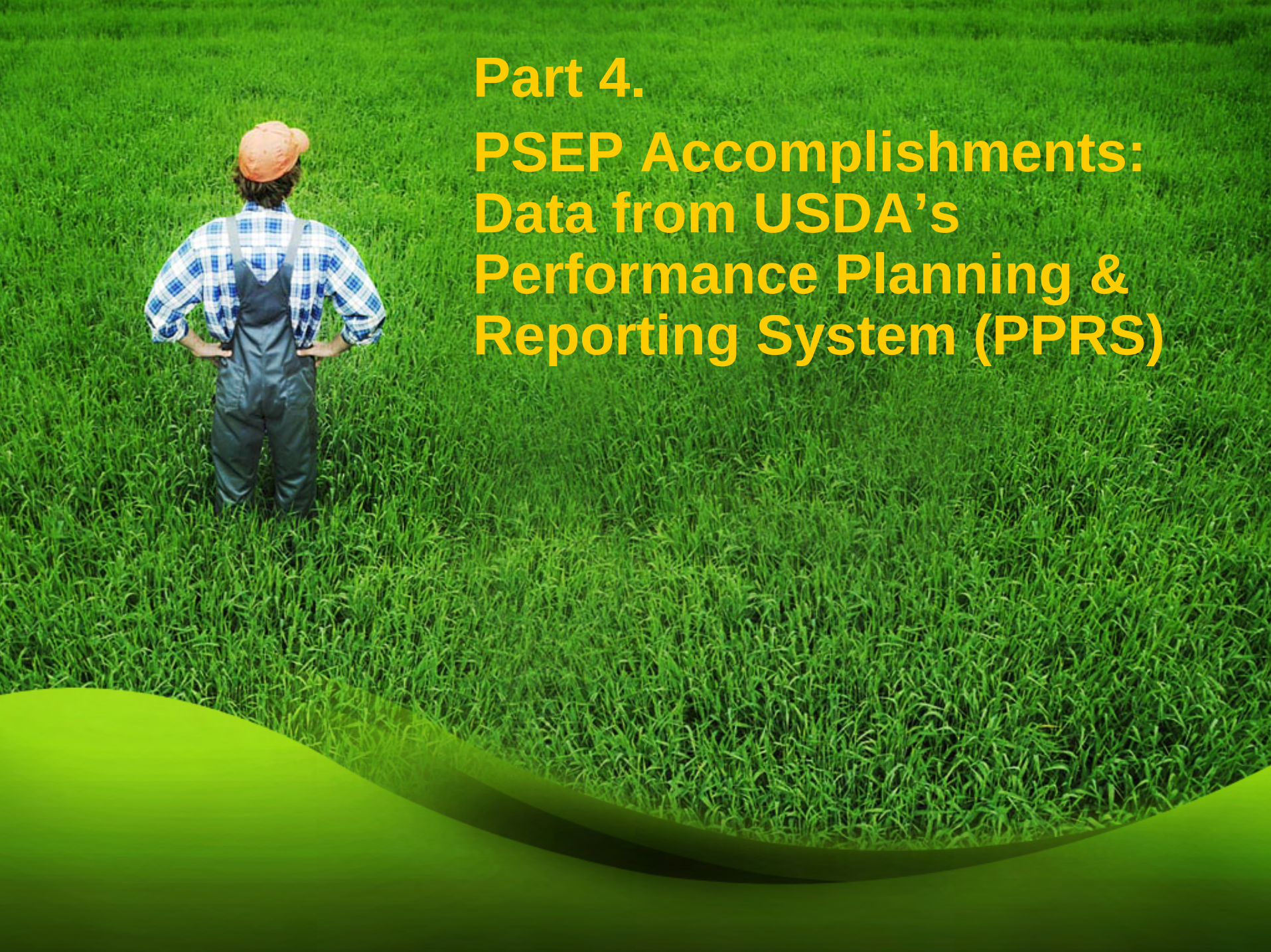
    Northeast – Pennsylvania

    Southern – North Carolina

People Trained through PSEP

	2002	2003	2004	2005	2006
Certification	114,859	102,416	99,878	82,785	94,191
Recertification	311,634	291,685	290,551	291,224	290,947
Non-Certification	285,394	1,091,413	1,001,256	628,824	630,008
Train the Trainer				5,980	5,900
TOTALS	**711,887**	**1,485,514**	**1,391,685**	**1,008,813**	**1,021,046**

Note: Data reflect the 5-yr period from the last Interagency Agreement between USDA and EPA; Train-the-trainer data not compiled prior to 2005



Part 4.
PSEP Accomplishments: Data from USDA's Performance Planning & Reporting System (PPRS)

Performance Planning & Reporting System (PPRS)

- **USDA-required reporting for PSEPs**
  - Required for each state receiving EPA pass-through funding
  - Electronic system began in 2002; previously, reporting was required, but less structured
  - Based on federal fiscal year, so data entered annually in fall/winter

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **Regional fly-in workshops, ID & MT**
  - For aerial pesticide applicators (pilots and operators)
  - 34 aircraft were tested
  - Potential impact is substantial, as a single operator can apply agrichemicals to more than 30,000 acres annually
- **PestSense and HortSense, WA**
  - On-line pest management decision tools
  - Provides information on pest biology & management options
  - STOP sign directs the user to more detailed information if a pesticide is chosen as control option

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **Virtual spray table, IL**
  - On-line tutorial
  - User sees effects of different nozzles, pressure, & wind speed on spray pattern and drift
- **Portable mini-golf course, PA**
  - Each hole includes an educational message
  - Theme in 2006 was the meaning of signal words
    - Mr. Yuk stickers were provided to take home and apply to household pesticides
    - Reached > 15,000 participants

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **Drift garden, IL**
  - "When Herbicide Drift Goes Awry" presented in conjunction w/tour of the drift garden at Turf & Nursery Field Day, 2005
- **"Project Good Neighbor", KS**
  - Voluntary program used by sensitive crop growers and commercial applicators
  - Registry contains 121 'sensitive sites' (2006 data)
  - Applicators can use this information to avoid off-target pesticide applications by drift or volatilization
  - Many applicators have publicized the program to growers of sensitive crops

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **Bilingual General Standards Training, IL**
  - Professional Turf Conference was presented in short passages of English followed immediately by the spoken Spanish translation
- **Master Gardener (MG) education, SD**
  - 60 Master Gardeners were trained on pesticide toxicity, exposure reduction, reading and interpreting labels, food safety issues including residues and tolerances, and selection and use of protective clothing
  - Included hands-on calibration of hand sprayers
    - Nearly all indicated they had not previously calibrated a hand sprayer; most said they would adopt this practice in the future
  - MGs pass on what they have learned to consumers

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **“Latitude Bridge”, IL**
  - Combination of teleconferencing and online content
  - Trainers were able to teach from their offices, with the audio portion of the clinic carried over the telephone and the visual portion shown via the Internet
  - 467 people were trained at the 4 locations, with 9 different trainers participating in the teaching effort

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **On-line national pesticide media database, VA**
  - For Extension faculty & state regulatory officials
  - Holds ~ 1500 images
  - New media and enhancements were added to the site to help Extension agents develop their own training program presentations
- **Outreach for health care providers, CA**
  - 5 workshops on recognizing pesticide illnesses and injuries were conducted in 2004
  - 2 of these workshops were conducted in Arizona and were focused toward Native American community health care providers

Innovative Teaching by PSEPs: Outstanding Examples, 2002 - 2007

- **Principals of social marketing incorporated into certification training, DE**
  - Applicators were asked to list barriers to use of personal protective equipment (PPE)
  - Trainers then rebuffed each barrier
  - 3 applicators were given PPE and asked to apply a “pesticide” (Grape Nuts) to which fluorescent dye had been added
  - After the application, a black light was used to show the pattern of “pesticide” exposure
  - Applicators were given chemically resistant gloves to take back to work

Direct PSEP Impacts

- Although not a required element of PPRS, some PSEPs report on adoption of improved pesticide handling as a result of receiving PSEP training
  - **2004 (31 states reporting):**
    - ~ 64% of applicators trained for certification adopted at least 1 improved practice
    - ~ 55% of applicators trained for recertification adopted at least 1 improved practice
    - ~ 74%% of applicators trained for recertification adopted at least 1 improved practice
  - **2007 (33 states reporting)**
    - ~ 60% of applicators trained for certification/recertification adopted at least one improved practice
    - 4 of the states reported at least 90% or more of their participants adopted at least one improved practice

Practices Improved by PSEP: Wisconsin Example, 2006

- Survey showed individuals seeking certification for the first time plan to adopt more pesticide use practices than recertifying applicators (who have already adopted many of such practices)

- The highest ranking pesticide use practices already adopted included:
  - reading the label
  - storing pesticides in their original container
  - assessing the impact of weather on the pesticide application
  - keeping unprotected people from mixing and loading sites

- The most often listed plan to adopt practices included:
  - locking up pesticides
  - carrying PPE when transporting pesticides
  - using methods to prevent back-siphoning

Practices Improved by PSEP: Maryland Example

- MD PSEP surveys the attendees at the end of selected applicator recertification conferences
  - **Questionnaire 1: What DID you change?**
    - 95% indicated they actually had improved at least one pesticide handling practice based on information learned at the 2006 conference
  - **Questionnaire 2: What do you EXPECT to change?**
    - 90% indicated they expected to improve at least one pesticide handling practice based on information learned in the 2007 training workshop

Practices Improved by PSEP: Maryland Example, 2006

- **Actual changes trainees reported they made based on what they learned from PSEP in 2005:**
  - Improved record keeping (63%)
  - Improved workplace safety (61%)
  - Used new databases / new resources (24%)
  - Avoided practices that contribute to drift (28%)
  - Kept up to date on regulatory changes (36%)
  - Communicated more effectively with customers / public (36%)
  - Read pesticide labels carefully (46%)

Note: Each individual may adopt multiple practices; many have already adopted specific practices

Practices Improved by PSEP: Nebraska Example, 2006

- Surveyed ~ 400 private applicators
- Applicators expressed what they would always do as influenced by their learning experience
  - Consider economic thresholds when using pesticides (56 %)
  - Use multiple IPM approaches to manage weeds, insects, and diseases (58%)
  - Use personal protective equipment and clothing to minimize exposure (71%)
  - Take action to keep residues out of tractor cabs (73%)
  - Wash hands after using / handling pesticides (87%)
  - Consider using drift reduction spray nozzles (67%)

Note: Each individual may adopt multiple practices; many have already adopted specific practices

Practices Improved by PSEP: Hawaii Example, 2006

- People trained by PSEP reported adopting 207 pesticide safety & risk management practices, including:
  - Choose only a pesticide with a people/pets re-entry waiting period suitable for the usual kinds of traffic on the turfgrass/landscaped area you plan to treat
  - Buy only an amount of pesticide you can use in 1 – 2 yrs
  - Store pesticides separately from human & animal food/supplements /medicines
  - Review poisoning signs and symptoms listed on a pesticide's label before using the pesticide
  - Choose a pesticide only if you are willing and able to use suitable clothing and safety equipment
  - Wear at least a long-sleeve shirt and long pants or coveralls when handling pesticides
  - Have a spare set of clean clothing or disposable coveralls available when you apply pesticides.
  - Use spray patterns suitable for drift management
  - Wash safety equipment after each use
  - Store and wash family laundry separately from clothing worn during pesticide applications

Part 5.

Future PSEP Expectations

Future PSEP Reporting Expectations

- State PSEPs will continue to report through PPRS (publicly available)
  - Numbers / categories trained
  - Outputs & outcomes
    - new materials developed
    - successes
    - special accomplishments
  - Impacts
    - if state can cover cost of survey

Future PSEP Reporting Expectations

- Funding from most sources is pooled and used collectively to support program initiatives
  - Supports expertise remaining within the program – both program staff and support staff to develop, implement, & maintain program elements (manuals, websites, etc.)
  - Provides flexibility to address emerging issues, take advantage of new technologies, etc.
- Competitive grants support defined projects
    - However, implementation, & maintenance depends on maintaining the program and support staff and on resources to update and improve the original project

Future PSEP Reporting Expectations

- FY08 funds will not reach the state PSEPs until late 2008
- Annual reports cover accomplishments of the previous federal fiscal year
  - all sources of funding are pooled
  - cannot usually separate out specific projects supported only by individual sources
- Reports covering the first use of PRIA monies will be submitted electronically in winter 2009

Contact Information

State PSEP Coordinators
http://www.ipmcenters.org/contacts/PSEPDirectory.cfm

American Association of Pesticide Safety Educators (AAPSE)
http://aapse.org

Performance Planning & Reporting System (PPRS)
http://www.pprs.info/PSEP/index.cfm

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