





# 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



# 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

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>EPA</b>	1,880,000	700,000	1,200,000	1,200,000	1,200,000
<b>Other</b>	7,200,000	7,700,000	7,300,000	7,700,000	7,800,000
<b>Total</b>	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)



# 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

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

*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*



# 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



# 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

