

U.S. EPA Endocrine Disruptor Screening Program Update for PPDC

October 17, 2007

EPA's Statutory Authority

■ Food Quality Protection Act (FQPA)

Requires EPA to: Develop a screening program using validated assays to identify pesticides that may have estrogenic effects in humans.

Authorizes EPA to include:

Other endocrine effects, as designated by the EPA Administrator (e.g., androgen and thyroid; endocrine effects in species other than humans).

Other non-pesticide chemicals that:

- Have “an effect cumulative to that of a pesticide,” and
- To which a substantial human population may be exposed.

■ Safe Drinking Water Act (SDWA) Amendments

Allow EPA to require testing of chemical substances found in sources of drinking water, if a substantial human population may be exposed.

Endocrine Disruptor Screening Program (EDSP)

Established in 1999 following recommendations of:

- the Federal Advisory Committee Act (FACA) chartered Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) of 1996-1998;
- public comment; and
- EPA's Science Advisory Board & FIFRA Scientific Advisory Panel

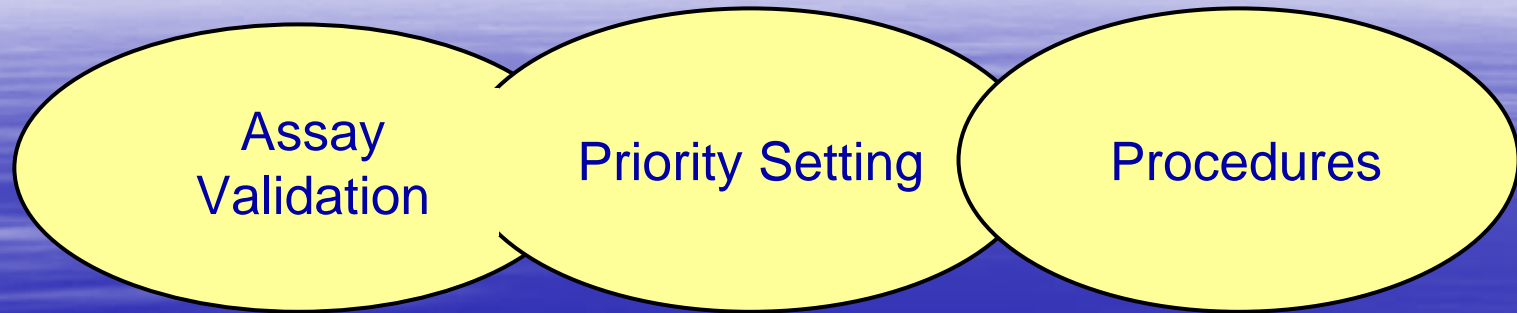
Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC)

- Chartered Oct. 16, 1996
(www.epa.gov/scipoly/oscpendo)
- 39 members representing broad constituencies
- Recommendations proposed in 1998:
 - Estrogen, androgen and thyroid
 - Human and ecological effects
 - Priority setting for broad universe of chemicals
 - 2-Tiered Approach

Two-Tiered Approach

- Tier 1
 - *In vitro* and *in vivo* screens
 - Detect potential to interact with endocrine system
- Tier 2
 - Multi-generation studies covering a broad range of taxa
 - Provide data for hazard assessment

Current EDSP Activities



- **Assay Validation** - Development and validation of test assays (Tier 1 screening & Tier 2 testing)
- Priority Setting - Selecting chemicals to be screened
- Procedures - Developing implementation procedures for requiring testing

Validation Process for EDSP

- Method development and preparation of Detailed Review Paper (DRP)
- Pre-validation
 - Demonstration of relevance
 - Development of standard optimized protocol
 - Determination of readiness for validation
- Validation in multiple laboratories
 - Demonstrate reliability across labs
- Independent scientific peer review of validation effort: Integrated Summary Report (ISR)
- Regulatory acceptance

Validation Update on Tier 1 Assays

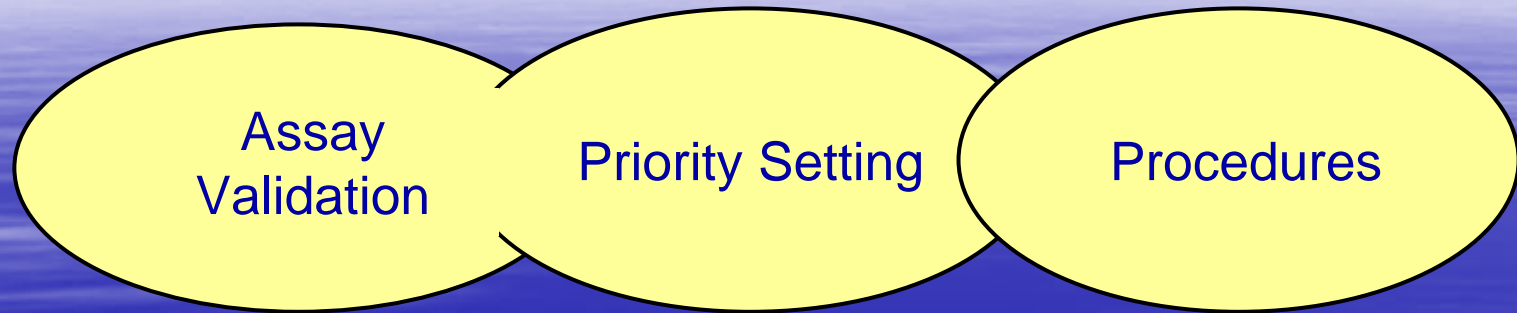
Tentative Peer Review Schedule

- | | |
|---------------------------|-----------|
| ■ Uterotrophic | Complete |
| ■ Hershberger | Complete |
| ■ Adult Male | In Review |
| ■ Female Pubertal | In Review |
| ■ Male Pubertal | In Review |
| ■ AR Binding | 2007-Q4 |
| ■ Aromatase | 2007-Q4 |
| ■ Amphibian Metamorphosis | In Review |
| ■ Fish Screen | 2007-Q4 |
| ■ Steroidogenesis | 2008-Q1 |
| ■ ER Binding | 2008-Q2 |

Validation Update on Tier 2 Assays

- Mammalian 2-generation – Complete
- Avian 2-generation – 2009/10
- Amphibian Growth/Reproduction – 2009/10
- Fish 2-generation – 2009/10
- Mysid 2-generation – 2009/10

Current EDSP Activities



- Assay Validation - Development and validation of test assays (Tier 1 screening & Tier 2 testing)
- **Priority Setting** - Selecting chemicals to be screened
- Procedures - Developing implementation procedures for requiring testing

Priority Setting

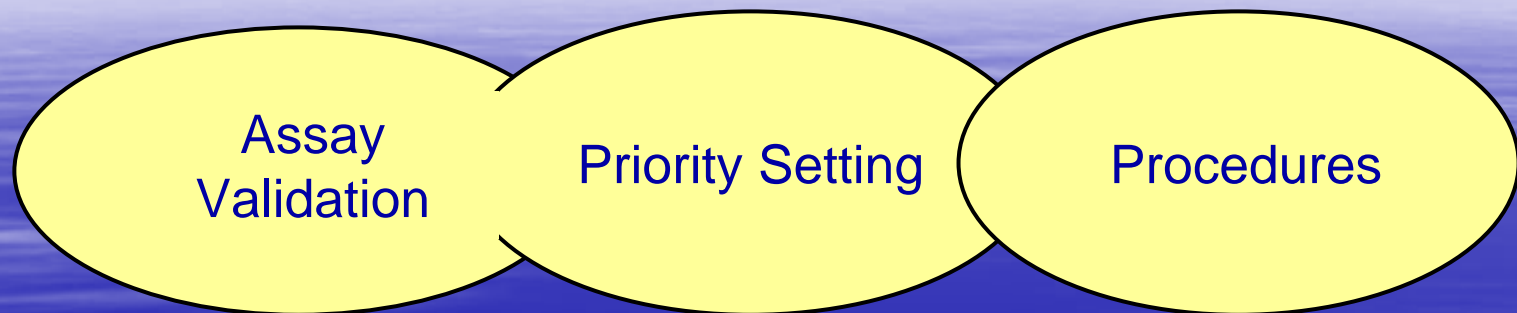
Selection of 73 Chemicals for Initial Screening

- Selection based on potential human exposure
 - PAIs with food, water, residential, occupational exposure*
 - HPV inerts in human and eco biomonitoring, water, air*
- Selection based on chemicals found in multiple pathways
- 64 Pesticide actives and 9 HPVs / pesticide inerts selected
- This is not a list of “known” or “likely” endocrine disruptors

Priority Setting

- Published draft list in FR on June 18, 2007
- 90 day comment period, extended 60 days to November 16, 2007
- EPA will review comments on draft list and finalize list for Tier 1 screening by early 2008

Current EDSP Activities



- Assay Validation - Development and validation of test assays (Tier 1 screening & Tier 2 testing)
- Priority Setting - Selecting chemicals to be screened
- **Procedures** - Developing implementation procedures for requiring testing

Procedures

- Purpose – Develop the processes and procedures the Agency will use to require testing under the EDSP
- Must have an ICR in place to require testing
- Statutory Authority – FFDCA Section 408(p)
- All documents will be available for public comment and will be finalized by the end of 2007 or early 2008
- Public meeting to be held this fall

EDSP Timeline

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

**Proposed Chemical
Selection Strategy**

**Draft
Initial List**

**Initial
List**

**Development of Procedural
Framework**

Final

Tier I Validation

**Screening
Initial list**

Tier II Validation