Agricultural Handlers Exposure Task Force (AHETF)

Study Design, Logistics and Conduct

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AHETF - Scope of Occupational Monitoring

- 33 application scenarios and the associated mixing/loading activities:
  - Aerial
  - Ground
  - Airblast
  - Greenhouse
  - Hand-held sprayers
  - Seed treatment

AHETF - Exposure Monitoring

Occupational Groups

Mixer/Loader (ML) Examples:

- Formulation type – liquid, powder, granule
- Equipment – open vs. closed system
- Packaging – jugs, bags, WSP

Applicator (A) Examples:

- Aerial
- Ground boom – open vs. closed cabs
- Airblast
- Hand carry system

AHETF – Study Design

- Scenario selection defines the set of conditions requiring evaluation
  (i.e. open pour, open cab ground boom)
  - formulation type
  - packaging
  - delivery system
  - application technique
  - active ingredient
    - label restrictions/requirements
    - crop
    - timing (PPI herbicide is only use in the spring, etc.)
    - geographic location
    - PPE

AHETF – Study Design

- Guidelines for Regulatory Studies
  - Regulatory compliance
    - design review with Joint Regulatory Committee
      - FIFRA and Good Laboratory Practices
      - Ethical review (IRB and DPR, HSRB)
  - Monitoring Methodologies
    - Acceptably sensitive analytical methods for a.i.
    - Dosimetry (dermal and inhalation)

AHETF – Study Design

- Understanding of Agronomics of Scenario
  - variations of mix/load and application equipment
  - variations of practices in the field
  - variations of crops
  - typical area treated per day
  - typical volume handled per day

AHETF – Study Logistics

- Relationship between scenario conditions
  - Occupational setting – farm, orchard, forestry area, etc...
  - Workers experienced in activity (tied to location)
  - Appropriate application equipment
  - Monitoring unit capacity (total number of workers and acre available to be treated)
  - Need for the actual treatment
- Relationship between occupational setting manager/operator and local coordinator

AHETF – Study Logistics

- Identify occupational setting – farm, orchard, forestry area, etc...
  - Occupational setting – Controlled by third party, such as Farmer or PCO, etc...
  - Gain approval to utilize facilities and equipment
  - Gain approval to invite employees of the third party to volunteer for the study
  - Each site has a limited pool of authorized ML/A

AHETF – Study Conduct

- Site meets Scenario requirements
  - All equipment present and operational
  - Appropriate quantity of test material is available
  - Study personal ready (1 per MU and 5 supporting)
  - Grower approval secured and worker informed consent acquired
  - Workers prepared with dosimetry and monitored by an observer while performing the normal ML/A activities.
  - Dosimetry collected when monitoring concluded

Summary

- Relationship between Scenario condition requirements are very important
  - Relationship between conditions are very complex and in many cases fixed
  - Testing sites/facility are not owned or controlled by the AHETF.
  - Test sites have a set finite pool of ML/A personal available
- Cost effective random sampling is extremely difficult due to the inherent and unbreakable relationships between so many required conditions
- A cost effective diversify sampling of the population guided by critical factors in determining exposure (varying individuals, AaiH, location, equipment, etc.) based on sound judgment of Ag experts utilize PDS.