Pesticide Registration & Labeling

Robin Schoen-Nessa, Program Manager, Pesticide Registration & Licensing
Washington State Department of Agriculture
rsnessa@agr.wa.gov
EPA PESTICIDE REGISTRATION

EPA Reviews
- Science Package
- Risk Assessments/Site
- Non-Target Effects Models
- Endangered Species
- Aquatic Review
- EFED, BEAD, Occupational
EPA PESTICIDE REGISTRATION DATA REQUIREMENTS

- Product Chemistry
- Product Performance
- Data from Studies that Determine Hazard to Humans and Domestic Animals **
- Data from Studies that Determine Hazard to Nontarget Organisms
- Post-Application Exposure Studies
- Applicator/User Exposure Studies
- Pesticide Spray Drift Evaluation
- Environmental Fate **
- Residue Chemistry
- Additional information for antimicrobial products
HAZARDS TO HUMANS & DOMESTIC ANIMALS

Data from Studies that Determine Hazard to Humans and Domestic Animals

Assess hazards to humans and domestic animals are derived from a variety of acute, subchronic, and chronic toxicity tests, and tests to assess mutagenicity and pesticide metabolism.

6 Pack...

- Acute oral toxicity
- Acute dermal toxicity
- Acute inhalation toxicity
- Primary eye irritation
- Primary dermal irritation
- Dermal sensitization
ENVIRONMENTAL FATE

810 - Product Performance Test Guidelines
830 - Product Properties Test Guidelines
835 - Fate, Transport and Transformation Test Guidelines
840 - Spray Drift Test Guidelines
850 - Ecological Effects Test Guidelines
860 - Residue Chemistry Test Guidelines
870 - Health Effects Test Guidelines
875 - Occupational and Residential Exposure Test Guidelines
880 - Biochemicals Test Guidelines
885 - Microbial Pesticide Test Guidelines
890 - **Endocrine Disruptor Screening Program Test Guidelines
ENDOCRINE DISRUPTION TESTING

Group A - EDSP Tier 1 Test Guidelines

890.1100 – Amphibian Metamorphosis (Frog)
890.1150 – Androgen Receptor Binding (Rat Prostate)
890.1200 – Aromatase (Human Recombinant)
890.1250 – Estrogen Receptor Binding
890.1300 – Estrogen Receptor Transcriptional Activation (Human Cell Line HeLa-9903)
890.1350 – Fish Short-Term Reproduction
890.1400 – Hershberger (Rat)
890.1450 – Female Pubertal (Rat)
890.1500 – Male Pubertal (Rat)
890.1550 – Steroidogenesis (Human Cell Line – H295R)
890.1600 – Uterotrophic (Rat)

Group B - EDSP Tier 2 Test Guidelines

890.2100 – Avian Two-Generation Toxicity Test in the Japanese Quail
890.2200 – Medaka Extended One Generation Reproduction Test
890.2300 – Larval Amphibian Growth and Development Assay (LAGDA)
Acute and Subacute Studies

The short-term acute and subacute laboratory studies provide basic toxicity

Assess potential effects on fish, wildlife, plants, and other nontarget organisms; and

Indicate whether further laboratory and/or field studies are needed.
EPA PESTICIDE REGISTRATION - RISK ASSESSMENTS

- Ecological Risk Assessment
- Human Health Risk Assessment
- Assessing Pesticide Cumulative Risk Models, Databases, and Guidelines

https://www.epa.gov/risk
What is risk?

EPA considers risk to be the chance of harmful effects to human health or to ecological systems resulting from exposure to an environmental stressor. See **what is risk** for more information.

EPA uses risk assessment to characterize the nature and magnitude of health risks to humans and ecological receptors from chemical contaminants and other stressors that may be present in the environment.
HAZARDS TO HUMANS & DOMESTIC ANIMALS

Post-Application Exposure Studies
Assess hazard to farm employees resulting from reentry into areas treated with pesticides are derived from studies on toxicity, residue dissipation, and human exposure.
PESTICIDE REGISTRATION

- LABELING
  - Toxicity Language
  - First Aid
  - Worker Protection Standards
  - Aquatic Risk Box
  - Prohibitions
  - Buffers
  - State Registration Review
  - Special Cases
LABEL IS THE LAW!

- FIFRA
- WSDA PESTICIDE CONTROL ACT – RCW 15.58
- WSDA PESTICIDE APPLICATION ACT – RCW 17.21
- WSDA GENERAL PESTICIDE RULES – WAC 16-228
- ETC.
Signal Word?

CAUTION

other labels: WARNING, DANGER OR DANGER/POISON

based on toxicity

Examples:

CAUTION – Most Herbicides

WARNING -

DANGER-

Garlon 3A – “Corrosive, Causes Irreversible Eye Damage” – due to Adjuvant not Triclopyr Herbicide Active Ingredient

DANGER/POISON

Paraquat – defoliant - fatal if swallowed or inhaled, causes injury if absorbed through skin
Roundup PRO Concentrate

The complete broad-spectrum postemergence professional herbicide for industrial, turf and ornamental weed control.

Complete Directions for Use
AVOID CONTACT OF HERBICIDE WITH FOLIAGE, STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OR CHERRIES, DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DEATH IS LIKELY TO RESULT.

1.0 INGREDIENT
ACTIVE INGREDIENT
-Glyphosate, N-[(phosphonomethyl)glycine], in the form of the isopropylamine salt .................................................. 50.2%
OTHER INGREDIENTS (including 15% surfactant) .................................................. 49.8%

2.0 IMPORTANT PHONE NUMBERS

3.2 Environmental Hazards
Do not apply directly to water, to areas where surface water is present or to interdunal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washers.

3.3 Physical or Chemical Hazards
Spray solutions of this product can be mixed, stored and applied using only stainless steel, fiberglass, plastic or plastic-lined steel containers.

Glyphosate 50%
2. ENVIRONMENTAL HAZARDS

- Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

- Do not contaminate water by cleaning equipment or disposal of wastes. Do not contaminate water when disposing of equipment washwaters.
Season? Weather, Watering in? REI?

- “Do not apply when weather conditions favor drift from area treated.”
- “Wind: Drift potential is lowest between wind speeds of 2 to 10 miles per hour.”
- “Rainfastness: Heavy rainfall soon after application may wash this product off of the foliage and a repeat application may be required for adequate control.”

REI?

Non-Ag - Do not enter or allow worker entry into treated areas until sprays have dried.
DuPont™ Perspective™
herbicide

Dry Flowable
For Non-Crop Use
Active Ingredients

Aminocyclopropachlor 39.5%
6-amino-5-chloro-2-cyclopropyl-4-
pyrimidinecarboxylic acid
Chlorsulfuron
2-Chloro-N-[4-methoxy-6-methyl-1,3,5-triazin-
2-yl]aminocarbonyl]benzenesulfonamide 15.8%

Other Ingredients 44.7%
TOTAL 100.0%
EPA Reg. No. 352-846
EPA Est. No. 
Nonrefillable Container
Net: 
OR
Refillable Container
Net: 
E. I. duPont de Nemours and Company
1007 Market Street
Wilmington, DE 19898

KEEP OUT OF REACH OF CHILDREN

CAUTION
Si usted no entiende la etiqueta, busque a alguien para que le explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first rinsing both eyes with water. Get medical help.

DENMARK

Hazard Symbols
Signal Word? CAUTION
CAUTION

Personal Protective Equipment (PPE)
Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.
- Shoes plus socks.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse.

Engineering Control Statements
When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a
Pesticide Labels

Equipment, PPE, Rates, Water, **Nozzles**
- **Application Methods (pgs. 4-7!!)**
  - Huge area of focus on Garlon!!
  - Pay attention to Type of Equipment, Methods,
  - High Volume v. Low Volume
  - Broadcast v. Handheld etc.
- **Drift Management!!!**
  - Huge Area – pg. 3 &4
- Precautions, Environmental Hazards,

Prohibitions

“Do not apply this product in a way that will contact workers or other persons, either directly or through drift.”
BEE CAUTION: MAY KILL HONEYBEES AND OTHER BEES IN SUBSTANTIAL NUMBERS.
This product is highly toxic to bees exposed to direct treatment or residues on crops or weeds in bloom.
For crops in bloom, do not apply this product to target crops or weeds in bloom.

This product is extremely toxic to aquatic invertebrates. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.
Common Forest Pesticides (Herbicides!)

**Herbicides – 99% of the time**

- Glyphosate (general control all plants) & Triclopyr (woody species control – alder, etc.) & 2, 4 –D (kicker for broadleaf and woody control, plant growth regulator – plant hormone effects), aminopyralid (broadleaf weeds) – 90% of the time
- Aka – Roundup, Garlon, “” – all low tox. Package for mammals – ok in forest!
- New – imazypyr – grasses – very safe – ok in aquatic settings – not a mammalian or invertebrate (fish) tox.
- Adjuvants – Aquatic Profile?
DuPont™
Escort® xp
herbicide

Dry Flowable

Active Ingredient
By Weight
Metsulfuron methyl
Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]-carbonyl]amino]sulfonyl]benzoate 60%
Inert Ingredients 40%
TOTAL 100%

EPA Reg. No. 352-439
Nonrefillable Container
Net: ____________
OR
Refillable Container
Net: ____________

KEEP OUT OF REACH OF CHILDREN
CAUTION
Si usted no entiende la etiqueta, busque a alguien para que se le explique a usted en detalle. (If you do not understand the label, ask someone to explain it to you.)

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION! Causes eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust or spray mist.

PERSONAL PROTECTIVE EQUIPMENT
Applicators and other handlers must wear:
Long-sleeved shirt and long pants.
Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separate from other laundry.

Active Ingredient?
CAUTION
PPE
Garlon® 3A

Active Ingredient:
- triclopyr: 3,5,6-trichloro-2-pyridinylacetic acid, triethylamine salt 44.4%  
- Other Ingredients: 55.6%  
- Total: 100.0%

Acid equivalent: triclopyr - 31.8% - 3 lb/gal

Use Sites:
- Range,  
- Forests,  
- Rights of Way,  
- Wildlife Openings,  
- Aquatic Sites

Precautionary Statements:
Hazard to Humans and Domestic Animals

Environmental Hazards
Do not contaminate water when cleaning equipment or disposing of equipment washwater. Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may contribute to fish suffocation. This loss can cause fish suffocation. Therefore, to minimize this hazard, do not treat more than one-third to one-half of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency for fish and game before applying to public water to determine if a permit is needed.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards
Combustible. Do not store or place the product near heat or open flame.

Directions for Use
It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.
Pesticide Labels

• Is the Site on the label?
• * Forests

Directions for Use:
• For Control of woody plants, broadleaf weeds in range and pasture, forests and non-crop areas, including...rights-of-way such as . . . roadsides...
Precautions, Environmental Hazards, Prohibitions

- “Do not apply this product in a way that will contact workers or other persons, either directly or through drift.”
NEW CHEMISTRIES

Positives:
- Low Toxicity, Low Env. Hazard To Mammals, Birds, Insects Or Amphibians

Examples:
1. Clopyralid, Aminopyralid—
   1. Low Toxicity
   2. Long term control of broadleafs – less applications needed.
2. Imazypyr, Rodeo, Garlon 4, Etc. –
   1. Same as above &
   2. Aquatic ok!