



Valent U.S.A. LLC - IR-4 Project

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- Herbicides
 - Flumioxazin – Chateau[®] Herbicide
 - Flumioxazin + Pyroxasulfone – Fierce[®] Herbicide
 - Lactofen – Cobra[®] Herbicide
 - Clethodim – Select Max[®] Herbicide
- Fungicides
 - Fluopicolide – Presidio[®] Fungicide
 - Mandestrobin – Intuity[™] Fungicide
 - Ethaboxam – Elumin[™] Fungicide
 - Inpyrfluxam – Indiflin[™] Fungicide

- Active ingredient: flumioxazin
- Target: small seeded broadleaf weeds
- Timing: preemergence, preplant burndown
- Mode of action: PPO inhibitor
- HRAC group: 14
- IR-4 activity
 - Citrus and caneberry
 - Approved December 2016
 - Sold as Chateau[®] Herbicide
 - Thank you!

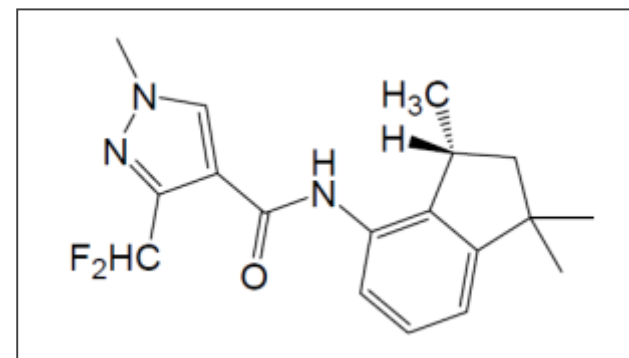
- Active ingredients: flumioxazin + pyroxasulfone
- Target: small seeded broadleaf and grass
- Mode of action: PPO inhibitor + Fatty Acid Inhibitor
- HRAC group: 14 + 15
- IR-4 activity:
 - PCR's submitted for tomato, pepper and strawberry
 - Weed control in row middles
 - Dr. Nathan Boyd, University of Florida
 - Grasses grown for seed: Pending with EPA
 - Delayed due to consolidation with other submissions

- Active ingredient: lactofen
- Target: broadleaf weeds
- Timing: postemergence
- Mode of action: PPO inhibitor
- IR-4 activity
 - PCR submitted
 - Strawberry
 - Dr. Nathan Boyd, University of Florida
 - Interest – Tropical Fruit
 - Parthenium ragweed control
 - Avocado, Dragon Fruit, Lychee
 - Brooks Botanicals

- Active ingredient: clethodim
- Target: grass weeds
- Timing: postemergence
- Mode of action: ACCase inhibitor
- HRAC group: 1
- IR-4 activity
 - Many crops added over the last several years
 - Thank you!

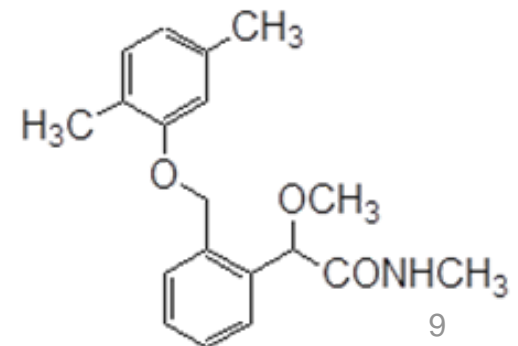
Indiflin™ Fungicide

- Proprietary chemistry from SCC
 - Code = S-2399
- ISO common name: inpyrfluxam
- Group: pyrazole-4-carboxamide
- Mode of action: SDHI (FRAC group 7)
- AI “nickname”: Indiflin™
- Formulation: 2.84SC
- Strengths
 - *Rhizoctonia*, *Sclerotium*, rusts
 - *Venturia*
 - Powdery mildew

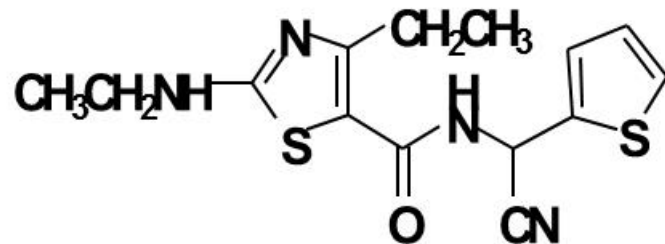


- First petition – submitted Oct 2017
 - Row crops
 - Seed treatment
 - Apple
- Use pattern note:
 - 9 month plant back to non-labeled crops
- Introduced to IR-4 HQ
 - July 11th
- **Potential IR-4 projects**
 - Grape (powdery mildew)
 - Ornamentals (*R. solani*, rusts)
 - Hops (powdery mildew)
 - Fruiting veg (*S. rolfsii*)
 - Cucurbits (powdery mildew)
 - Brassicas (*R. solani*)

- Active ingredient:
mandestrobin
- Valent code: S-2200
- FRAC group: 11
 - Quinone outside inhibitor (QoI) - strobilurin
- Formulation: 4SC
- Labeled crops
 - Grapes, strawberries, turf
- Strengths
 - *Botrytis*
 - *Sclerotinia*
- **Current IR-4 projects**
 - Lettuce (*Sclerotinia*)
- **Potential IR-4 projects**
 - Sweetpotato (black rot)
 - Legume veg (*Sclerotinia*, *Botrytis*)
 - Tomato (*Sclerotinia*, *Botrytis*)



- Active ingredient: ethaboxam
- Spectrum: oomycetes
 - Downy mildews, *Phytophthora* and *Pythium* species
- Group: thiazole carboxamide
- Formulation: 4SC
- FRAC group: 22
 - Zoxamide only other member
- **Current IR-4 projects**
 - Broccoli (downy mildew)
 - Cabbage (downy)
 - Mustard greens (downy)



- Active ingredient: fluopicolide
- Pest spectrum: oomycetes
 - Downy mildews, *Phytophthora* and *Pythium* species
- Chemistry: benzamide
- FRAC Group: 43
- Contact, locally systemic, translaminar
- Formulation: 4SC
- **Recent IR-4 projects**
 - Citrus
 - Succulent legumes
 - Hops
 - Registered 4/2018
 - Thank you!

- Etoxazole
- Pyriproxyfen
- Dinotefuran
- Clothianidin
- Fenpropathrin
- Esfenvalerate



Questions?