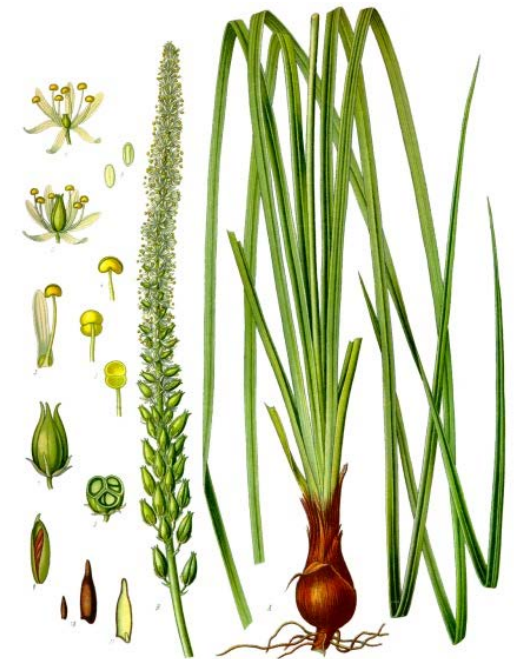


IR-4 Update

VERDIYA™

A “New” Botanical Insecticide

Robert A. Suranyi



Schoenocaulon officinale (Schlt. & Cham.) A. Gray ex Benth.
Image processed by Thomas Schoepke
www.plant-pictures.de

Background: Sabadilla

Scientific name: *Schoenocaulon officinale*

Common name: Sabadilla (green lily)

Order: Liliales

Family: Melanthiaceae

Distribution: New World



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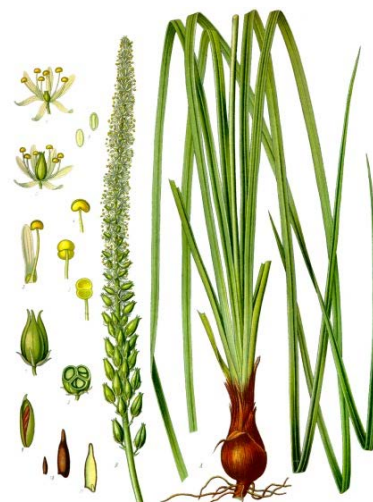
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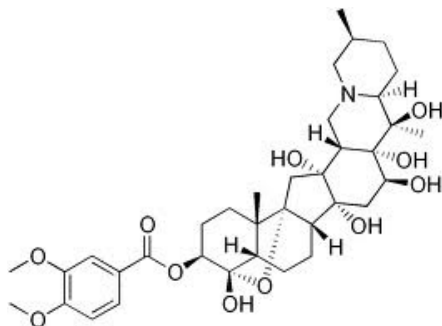
Schoenocaulon officinale (Schlttdl. & Cham.) A. Gray ex Benth.
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- Ethnobotanical uses as an insecticide by Mesoamerican cultures
- Historically 22 EPA registrations of sabadilla containing insecticides
- Only a single EPA registration exist today (Veratran D)

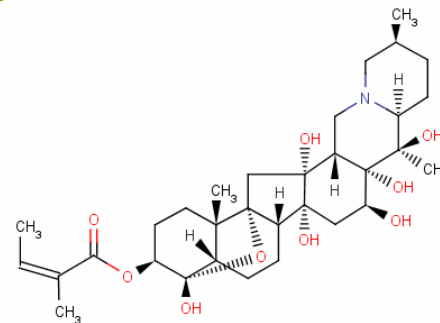


New Mode of Action

- Two insecticidally active alkaloids present in the sabadilla seed
- Target site: Voltage-gated sodium channel
 - Receptor site is different from pyrethroids
- Efficacy against pyrethroid resistant insects (Household and Agriculture)
- Broad spectrum activity
- IRM potential
- IPM / IRM in organic production systems



Veratridine



Cevadine

Efficacy and Crop Safety

- Primary contact activity (limited ingestive toxicity)
- Short residual efficacy
- Rapid decline of residues was observed
- Strong fit for MRL mitigation
- Excellent crop safety profile

Registration Plan

- Formulation Type: 4.2 EC
- Trade Name: TBD
- Primary Target Crops (1st petition):
 - Citrus
 - Berries
 - Fruiting Vegetables
- Target EPA Submission: 2020-21
- Potential Commercial Launch: 2023
- Potential 2nd petition crops:
 - Brassica, leafy vegetables, pome fruits, and cucurbits

Sabadilla Summary

- New MoA botanical insecticide
- OMRI compliant formulation
- Broad spectrum
- Contact activity
- Specialty crop focus: Berries, citrus, fruiting vegetables, brassica, cucurbits, leafy, pome
- VERDIYA™ -- MGK's trademark name for sabadilla active ingredient
- Integrated Solutions Fit
 - **Fills unmet needs** - e.g., new SWD tool
 - **Resistance management tool** - New MoA
 - **Residue mitigation tool** - Short residual



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Thank you very much