

# BEEKEEPING WITHIN AGRICULTURE:

## What farmers know about pesticide risks to pollinators

- pesticide training/certification for farmers
- Known pesticide risks to pollinators
- Best practices to reduce the risks



Ontario Beekeepers Association  
Annual General Meeting  
16 November 2019

“Farmers who want to buy and use Class 2 or 3 pesticides in Ontario *must* be a Certified Farmer”.

(Regulation 63/09, Ontario Pesticides Act)



The image shows a certificate form for the Grower Pesticide Safety Course. At the top, there are logos for Ontario, Farm & Food Care Ontario, and the University of Guelph Ridgetown Campus. Below the logos, the title "Grower Pesticide Safety Course" is prominently displayed in a green banner. The form includes fields for "CERTIFICATE #" and "EXPIRY YEAR/MONTH". At the bottom, there is a large white rectangular area for a signature, with the word "SIGNATURE" printed below it.

### Ontario Pesticide Education Program

U of Guelph –Ridgetown

Every 5 years farmers must re-certify by examination (~5000 farmers/yr)

~30 instructors, field crops and greenhouse

Currently Certified or Trained

- Certified Vendors 1,307
- Certified Farmers 22,594
- On-Farm Instructors 344
- Farmer Assistants to Certified Farmers 2,007

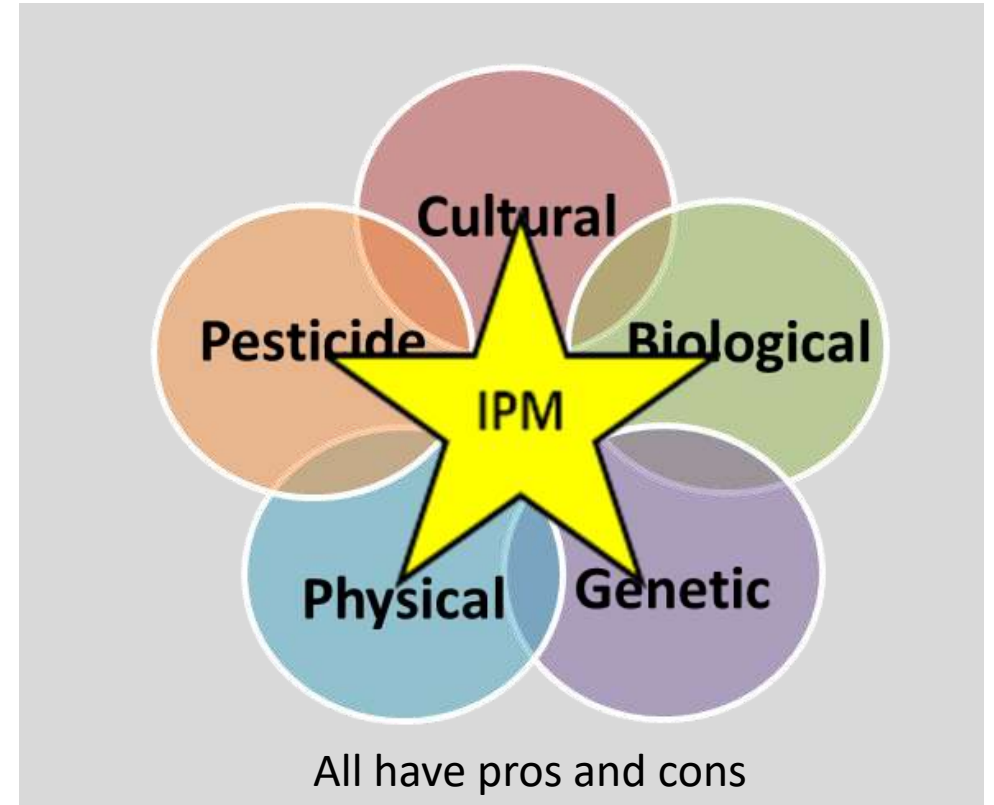
# What **OPEP** teaches...

- ▶ **Product information:** regulations, labels, formulations, IPM, pesticide resistance
- ▶ **Pesticide safety practices:** PPE, transportation, storage and disposal, spills
- ▶ **Pesticide application:** calibration/rates of application, drift, residues, records
- ▶ **Health/Environmental Risk Management:** hazards to health of humans, environment, and **non-target species (pollinators)**

# Integrated Pest Management

## Five Components of IPM

- Identification
- Monitoring
- Thresholds
- Methods of Control
- Evaluation



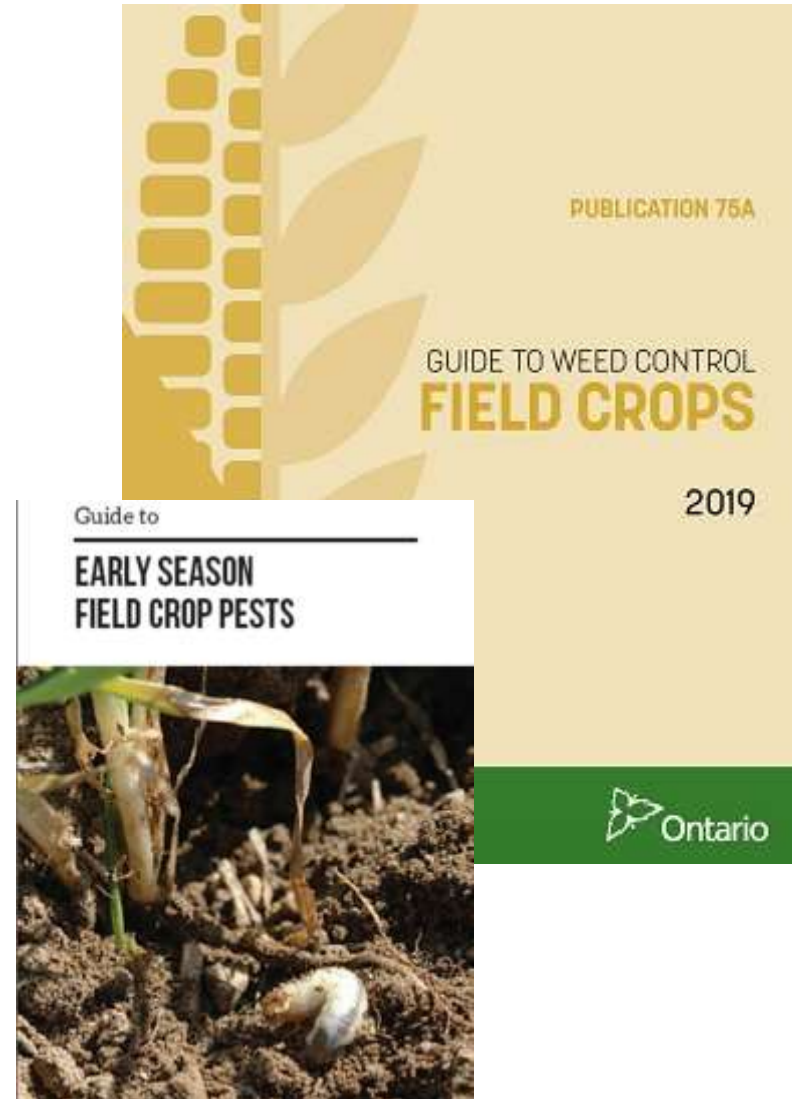
identification

monitoring

thresholds



OMAFRA, GFO, UofG Ridgetown  
Tracey Baute *et al.* 2014





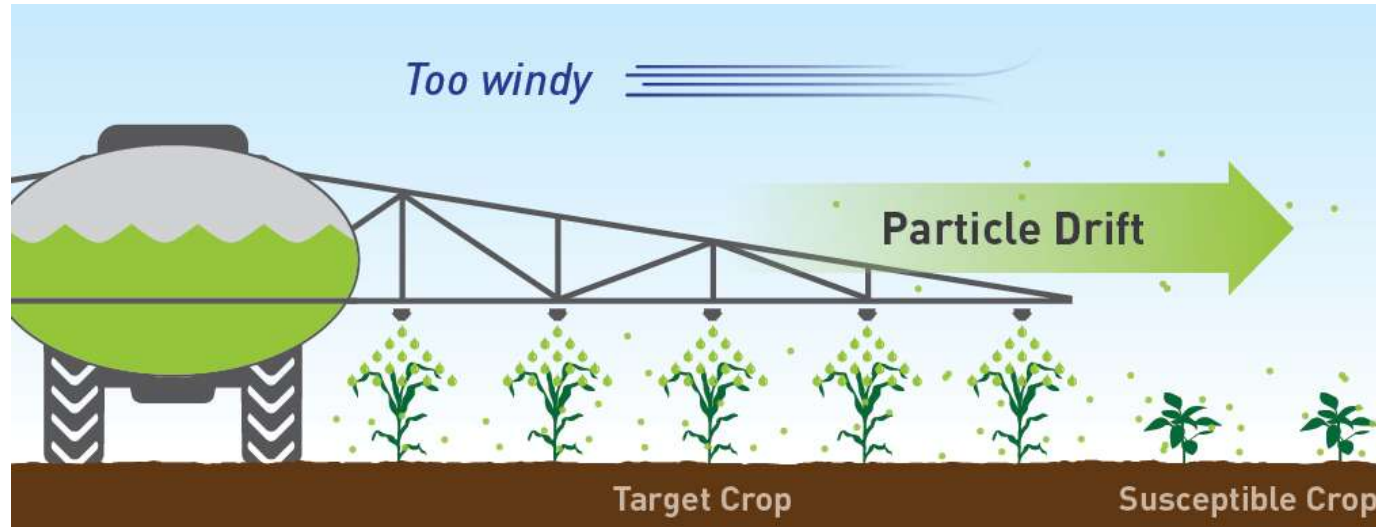
## IPM – Pesticide methods of control

### Ontario Pesticide Classification – Sale and Use (under Review)

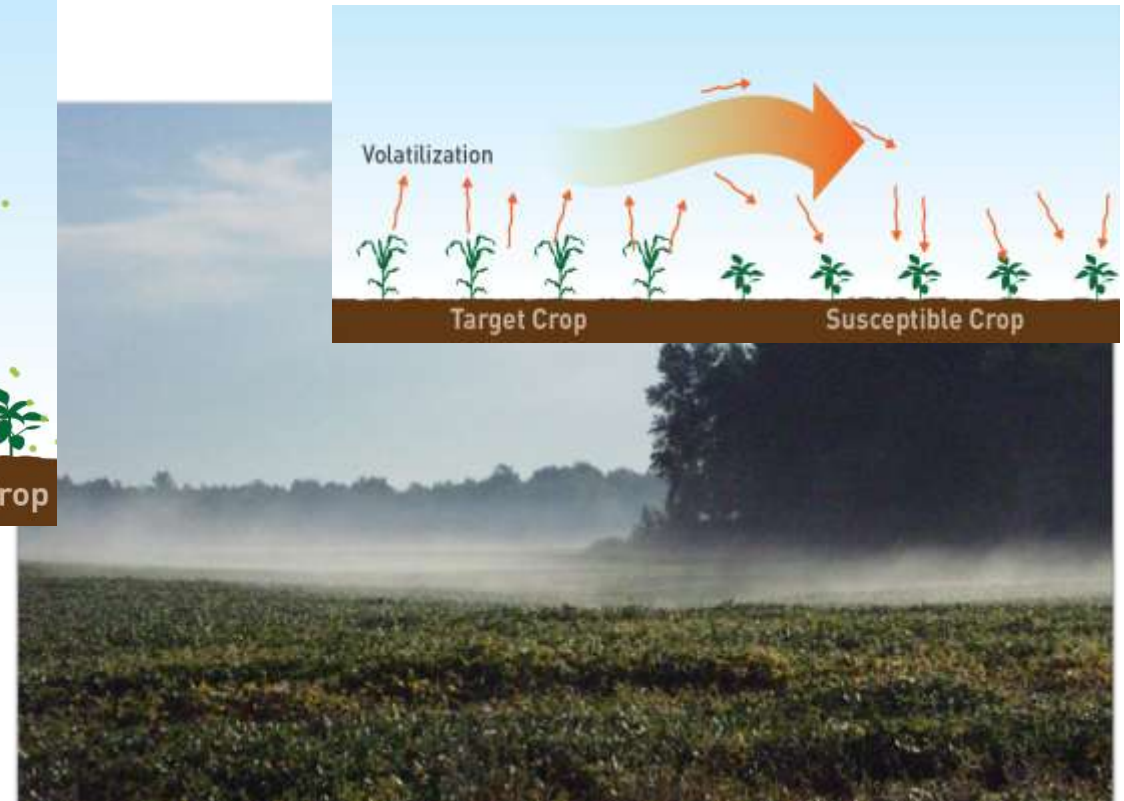
Class	For Purchase and Use By	
2	General Vendor Certified Farmer Licensed Exterminator Bee Inspector (permit)	<b>Very Hazardous</b> Examples: Matador, Prowl, Coverge, <u>Lumivia</u> ,
3	Certified Farmer Above Plus: Technician/Trainee Registered Beekeeper	<b>Moderately Hazardous</b> Examples: Dual, Reflex, 2,4,D, <u>Fortenza</u> , <u>Lumiderm</u> Oxalic acid
4	All the above Plus: Farmer not certified, but <i>self-declared</i> * Registered beekeeper	<b>Less and least Hazardous</b> Examples: glyphosate, liquid neonics, Sefina Apivar, Apistan, Checkmite, Thymovar
12	IPM Certified Farmer (complete IPM Course for Corn/Soybeans)	Examples: Neonic-treated seed,
Antibiotics restrictions? Vet prescription	*Vendor's responsibility to make sure that the person buying a pesticide is authorized to use it (must see Registration Certificate, Beekeeper ID?).	

# Pesticide drift – *movement of pesticide away from the intended target*

## Spray drift



## Vapour drift



Several best practices to minimize drift:  
mechanical, formulations, timing  
Not always practical, can be conflicting  
New technologies – smart sprayers

## “seed-treatment pesticide drift”



- jostling of coated seed in hoppers,
- fluency agent abrasion,
- dust from field via air intake.

Perfect Storm of 2012, 2013 started it all...



# Pollinator Health Regulation 2015

## (Ontario Regulation 63/09 under the Pesticides Act)

**Before being able to buy/use neonic-treated seed, farmers must:**

- Be a Certified Farmer to buy/use treated seed
- Complete *IPM Course for Corn and Soybeans*
- Document risk of pests by completing a *Pest Assessment Report*
- By August 2017, Professional Pest Advisor program begins, third-party confirmation/audit of pest

**Hopeful target:** An 80% reduction in use of neonicotinoid-treated seed on corn and soybeans by 2017



## OPEP instruction and Pollinator Health information for crop growers (OMAFRA website)

- Follow label
- Plant early morning/evening
- Control flowering weeds
- Use Fluency Agent to reduce abrasion
- Use/maintain planter filters (in/out) & deflectors
- Clean planting equipment
- Properly dispose of used seed bags and leftover treated seed.
  - ❖ Use treated seed **only if necessary** “...only 10-20 % of the Corn and soybean acres are at risk...” Tracey Baute, OMAFRA



# Neonics 101 for 2017

What you need to know to be compliant on your farm.



Growing Confidence

## What are your options for planting Neonic-treated seed in 2017?

Do not plant any neonicotinoid-treated corn and/or soybeans

Purchase seed treated with fungicides or a diamide

A new option from DEKALB® for 2017 is Dupont™ Lumivia™ insecticide seed treatment. See below for more details.

### NEW FOR 2017

## DuPont™ Lumivia™ insecticide seed treatment

Lumivia™ provides a novel mode of action for corn

- Lumivia™ is the first insecticide seed treatment using Chlorantraniliprole, the active ingredient belonging to a new class of chemistry called anthranilic diamides.
- As a seed treatment, Lumivia™ is fast acting: within minutes of ingestion, chlorantraniliprole causes paralysis of target pests, preventing feeding, and eventually causing death.

Lumivia™ offers fast-acting protection up to the 4-5 leaf stage against early-season insect pests such as wireworms, cutworms, seed corn maggots, and army worms

- Lumivia™ quickly moves systemically upward throughout the plant from seed germination to V5 seedling stage, delivering protection to new growth.

Lumivia™ provides uniform, healthy stands for maximum yield potential

Lumivia™ has an excellent environmental profile and seed safety

- When used according to label directions, Lumivia™ has minimal impact on beneficial insects and pollinators, as well as other non-target organisms.
- This selectivity, combined with robust pest control makes Lumivia™ a strong tool for Integrated Pest Management (IPM) programs.

Plant neonicotinoid-treated corn and/or soybeans

Complete the following and provide appropriate paperwork\* to your seed dealer:

Complete the Integrated Pest Management Course (IPM) offered by Ridgely College. Your certificate number will be required to purchase neonic-treated corn and/or soybeans

Conduct pest assessments and complete required forms (see last page for more details):

- Soil Inspection Pest Assessment (prior to planting)
- Don't know where to start? The DEKALB Agronomy team recommends starting with:
  - Fields with a history of pests
  - Fields with high weed pressure early in the season
  - Fields that you are able to plant early each year
  - Field edges in the fall
  - Fields with cover crops
- A Crop Inspection Pest Assessment

Sign an IPM Written Declaration Form stating that you have considered IPM principles

Are you unsure you have a need for neonic treated seed in your fields? The DEKALB Agronomy team recommends scouting areas with:

- Light soils
- Short rotation intervals
- Lower average yields
- Fields that get a manure application
- Fields with cover crops

## Corn

**Class 2, Group 28  
Chlorantraniliprole  
insecticide**

- toxic to aquatic insects and birds
- Non-systemic, persistent
- Follow best management practices "Pollinator Protection" ([www.healthcanada.gc.ca/pollinators](http://www.healthcanada.gc.ca/pollinators)).

## Soybeans

**Class 3, Group 28  
Lumiderm/Fortenza  
Cyantraniliprole**

Toxic to bees and aquatic insects



Questions or comments?



My "Urban bees" at *The Bruce Hotel* in Stratford