

Pesticide CEUs as a Platform for Water Resource Education



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Background

FL Agriculture

- Home to over 47,500 farms
- Industry valued at over \$7.35 billion in 2017
- Top producer for many commodities like oranges, tomatoes, watermelon, etc.

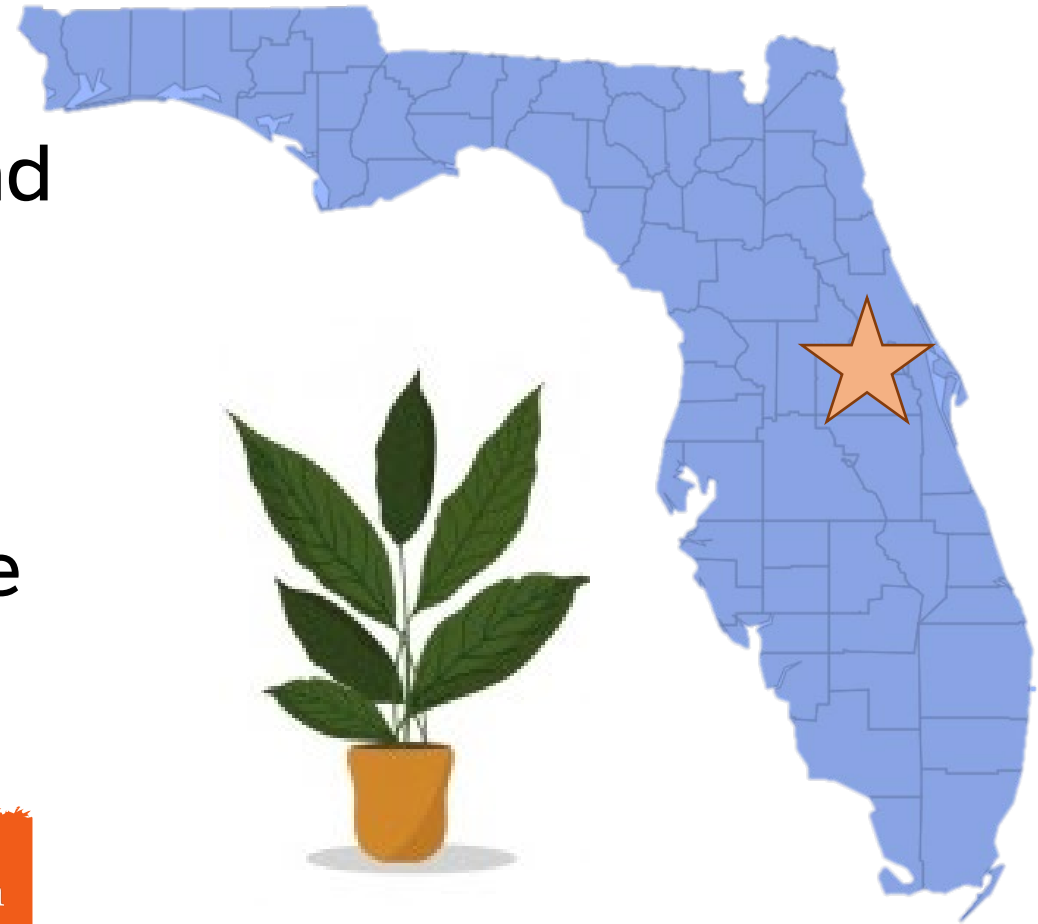


Background

FL Landscaping and Horticulture Industries

- Employs over >242,000 people
- FL nursery, landscape services, and horticulture retailers generated over \$25.4 billion in sales in 2018
- Central FL is the second largest horticulture production area in the state (valued at >\$2.23 billion).

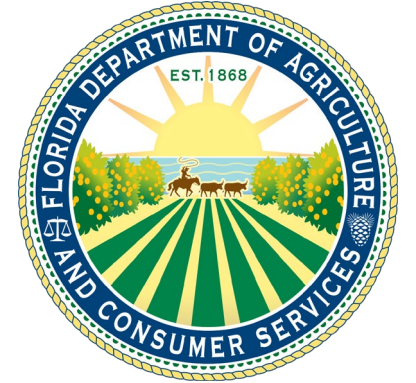
(Hodges, Khachatryan & Court, 2018)



Background

FL Pesticide Use and Licensing

- License required to apply pesticides
 - Pass a licensing exam
 - Obtain CEUs for renewal
- Over 69,500 licensed applicators in Florida



Materials and Methods

- 26 Zoom webinars offered from Sept 2020 to Sept 2021
- 719 participants
- FDACS pre-approved CEU class content

What is the deal with water in Florida?

Image Credits: Central Florida Water Initiative

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Why do we care about water?

- Water is Florida's most valued resource!
- Water is critical....
 - To our lives!
 - To the production of our food!

1 watermelon = 310 gallons of water

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Materials and Methods

- Times and class topics based on a local needs assessment
- Webinars advertised county-wide, across the Central District and through state-wide channels

UF/IFAS Extension Central District Pesticide Team

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Landscape University

Virtual event with CEUs available

How do you identify pest insects? What kind of nutritional problems are common on palms? What happens to herbicides after they are applied? What is biological control? What are some best management practices for turf? This six-week webinar series will cover the answers to these questions and more! Continuing education units (CEUs) are also available for individuals that hold a pesticide applicator license.

The cost for attendance is \$10 per class or a discounted rate of \$35 for all 6 classes.

The series agenda is as follows:

Date	Time	Topic Title
Jan 21	3-4PM	Great Expectations: Establishing Pest Management Goals for Your Clientele
Jan 28	3-4PM	Thistle Be the End of Me: The basics of weed control
Feb 4	3-4PM	What's That Bug? Intro to insects and scouting
Feb 11	3-4PM	More Than Ladybugs: Biocontrol for the urban landscape
Feb 18	3-4PM	Dead Palms Tell No Tales: Palm diseases & pests
Feb 25	3-4PM	The Grass Class

CEUs are available in the following categories: Commercial (PCO) Lawn and Ornamental, Limited Certification Commercial Landscape Management, Limited Certification Lawn and Ornamental, Ornamental and Turf, OR Private Applicator Ag.

For more information, contact:
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To register: landscapeuniversity.eventbrite.com

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

ORANGE COUNTY
GOVERNMENT
FLORIDA

LAKE COUNTY
FLORIDA

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sfyl.ifas.ufl.edu

Materials and Methods

- All classes included some water resource education
- Examples:
 - Water use in food production
 - Water quality protection from pesticides, fertilizers and other contaminants
 - Reclaimed water in the landscape

What is reclaimed water?



- Reclaimed water is also known as recycled or reused water
- It is treated at a treatment plant
- Helps to conserve water
- Not safe for drinking

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Photo: City of North Port

Best Practices for Pesticide Application

- Be extra cautious when mixing and loading and avoid doing so near water bodies
- Calibrate your equipment



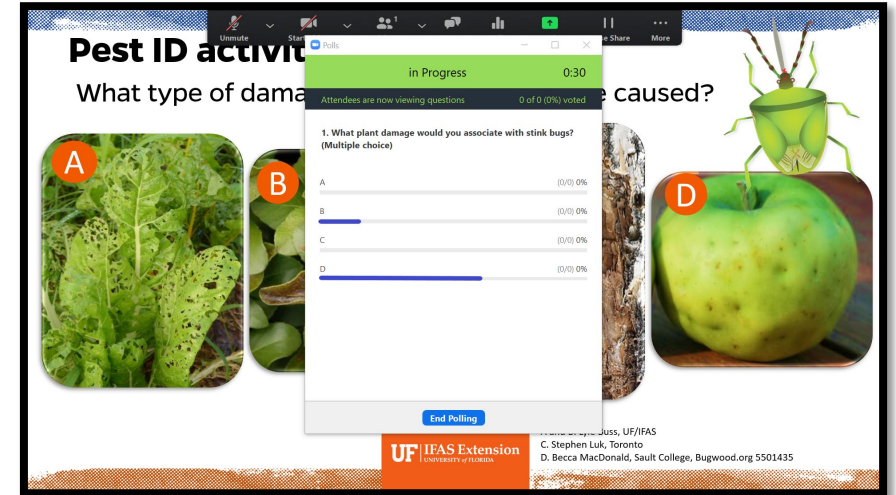
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Photo: UF IFAS

Chemical
Control

Materials and Methods

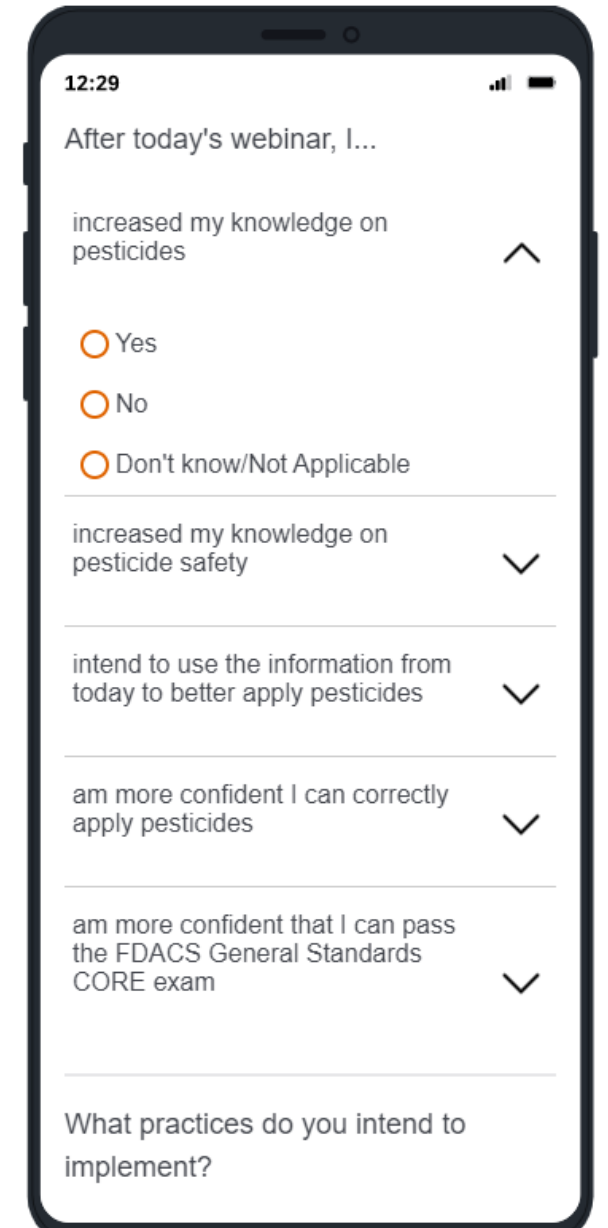
- CEU attendance verification
 - Individual Zoom link, attendance reports, polls, & chat box
 - CEU forms sent via email



	A	B	C	D	E	F	G	H	I	J
1	Attendee Report									
2	Report Generated	11/1								
3	Topic	Web		Actual Durati		Cancelled				
4	Pesticide General	994 0								
5	Host Details									
6	Attended	User Name (Orig		Join Time	Leave		Time in Session (Country/Region Name		
7	Yes	Morgan Pinker	s02@sen	9/16/2020 14:29		2020 17:14	166	United States of Ameri		
8	Attendee Details									
9	Attended	User Name (Orig	First Name	Last Name	Email		Registration Time Approval	Join Time	Leave Time	Time in Se
10	Yes						9/15/2020 13:22 approved	9/16/2020 14:58	9/16/2020 17:14	136
11	Yes						9/14/2020 9:08 approved	9/16/2020 15:02	9/16/2020 16:08	67

Materials and Methods

- Measuring knowledge gain, intent to adopt and actual adoption of practices
- Evaluation Techniques
 - Zoom polls
 - A post-webinar survey
 - 3-6 month follow up surveys



12:29

After today's webinar, I...

increased my knowledge on pesticides ^

Yes

No

Don't know/Not Applicable

increased my knowledge on pesticide safety v

intend to use the information from today to better apply pesticides v

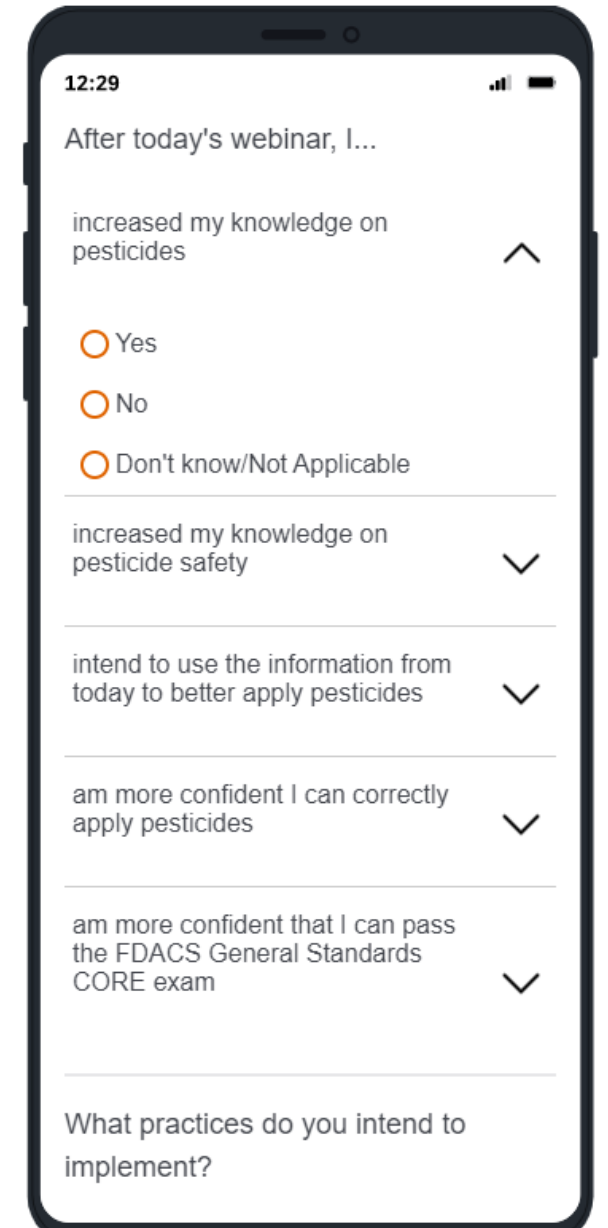
am more confident I can correctly apply pesticides v

am more confident that I can pass the FDACS General Standards CORE exam v

What practices do you intend to implement?

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What practices do you intend to implement?

Results

94.3% of participants (n=35) claimed that the training made them more aware of the importance of keeping pesticides out of waterbodies.

50.5% said they (n=107) adopted the practice of checking the environmental conditions (ie. chances of rain, wind, soil type etc.) prior to applying pesticides.

48.6% said they (n=35) now consider aspects of the location (ie. water/irrigation requirements, etc.) prior to planting.

Over **2,000** CEUs delivered Sept 2020-Sept 2021.

Reflections of Teaching Virtual CEU Classes

Challenges

- Time needed to verify attendance for CEU purposes
- Varying levels of comfort using technology
- Technical difficulties
- Hard to assess interest and engagement

Successes

- Accommodates busy professional schedules
- Previous unreached clientele
- Can reach larger audiences
- Educator collaboration across geographical lines



Conclusions and Future Directions

- Many CEU classes already include water resource content
- Since Oct 2021, hosted over 20 more webinars and several in person CEU classes
- Continuing to improve evaluation methods



Questions?

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