

# **Sugarcane Insects Research**

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# **Sporadic Insect Pests**

- **Fall armyworms in young cane**
  - **Spring vs fall**
- **West Indian canefly in plant cane**

# Armyworms in Sugarcane



**Fall armyworm, *Spodoptera frugiperda* (above)**  
**True armyworm, *Mythimna unipuncta***

# Armyworms in Sugarcane



**Prefer young, vegetative cane and other grasses**  
**Common in fall plant cane, when other hosts are mature**

# Armyworms in spring cane 2021



**Photos by Randy Richard**

# Armyworm Population Dynamics



**Natural enemies: Fire ants**

# Armyworm Population Dynamics



**Natural enemies: pathogens (nucleopolyhedrovirus)**

# Armyworm Population Dynamics



**Mid-south outbreak – pasture, rice, corn, sorghum, soybeans**  
**“It’s epic” – Gus Lorenz (U of Ark)**  
**Photo by K. Keshmeimer (Auburn)**

# **To spray or not to spray?**

**Yield impacts unknown**

**Fall or spring impacts?**

**Pyrethroid control failures common**

**Harm natural enemies**

**Prevathon or Diamond?**

**Once large larvae are present, damage  
already done?**

**Sugarcane recovery, tillering?**

# **Yield impacts**

## **Importance of fall growth to yield?**

**Earlier planting increases yield (White et al. 2010, Viator and Richard 2012)**

**Attributed to stalk populations**

**Prev. fall temps not related to cane yield (Greenland 2005)**

## **Spring growth is critical for yield**

**Recovery?**

# **Defoliation Trial – St. Gabriel**

**HoCP 12-615 billet planted August 2021**

## **Defoliation Treatments:**

**Uninjured**

**Spring 50%**

**Fall 50%**

**Spring 100%**

**Fall 100%**

**Fall and Spring 100%**

**Defoliated manually (weed eater) 10-14-21**

**5 reps**

**Height measured monthly until harvest**

# Defoliation Trial – St. Gabriel



# Defoliation Trial – St. Gabriel

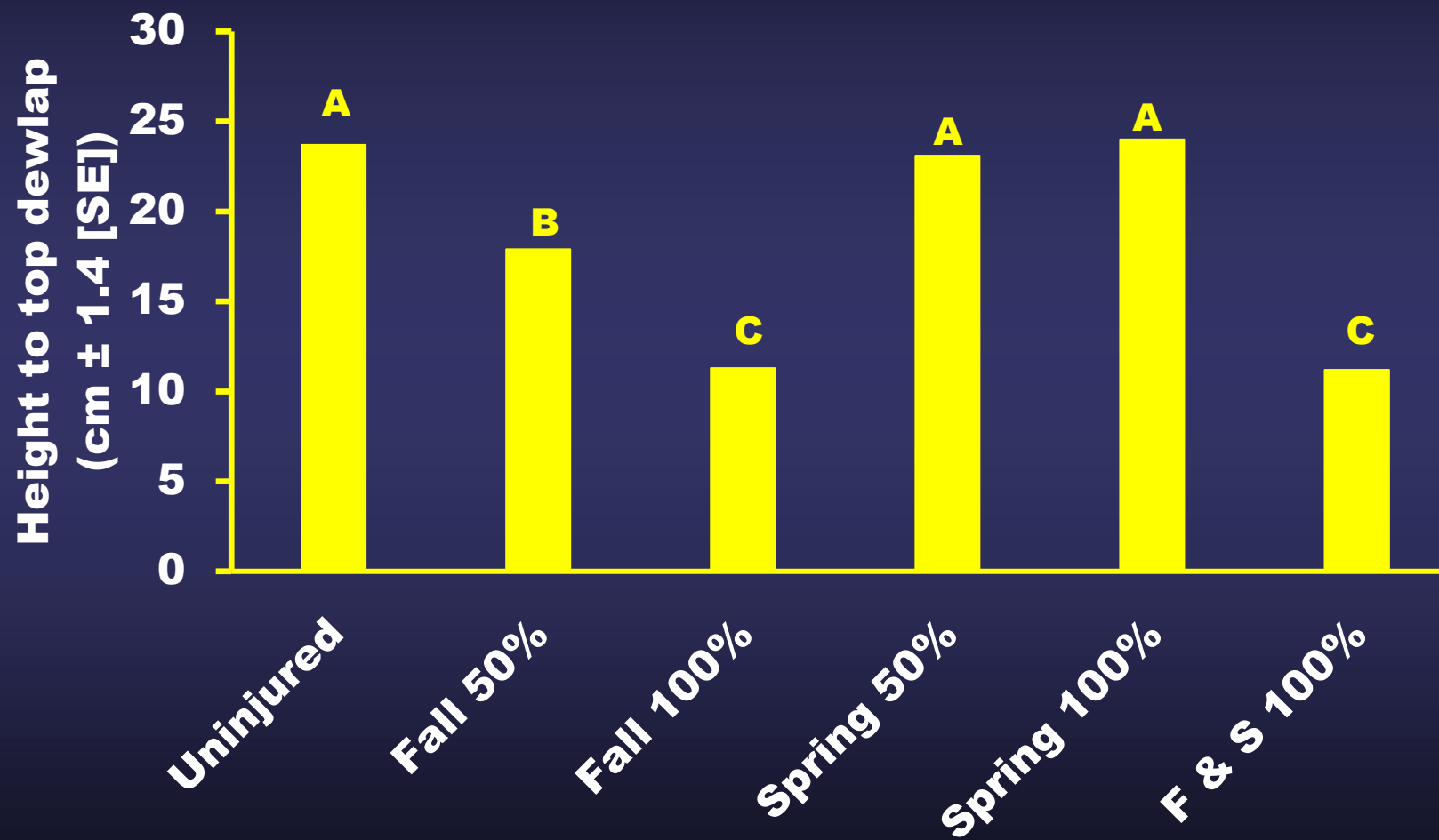


# Defoliation Trial – St. Gabriel



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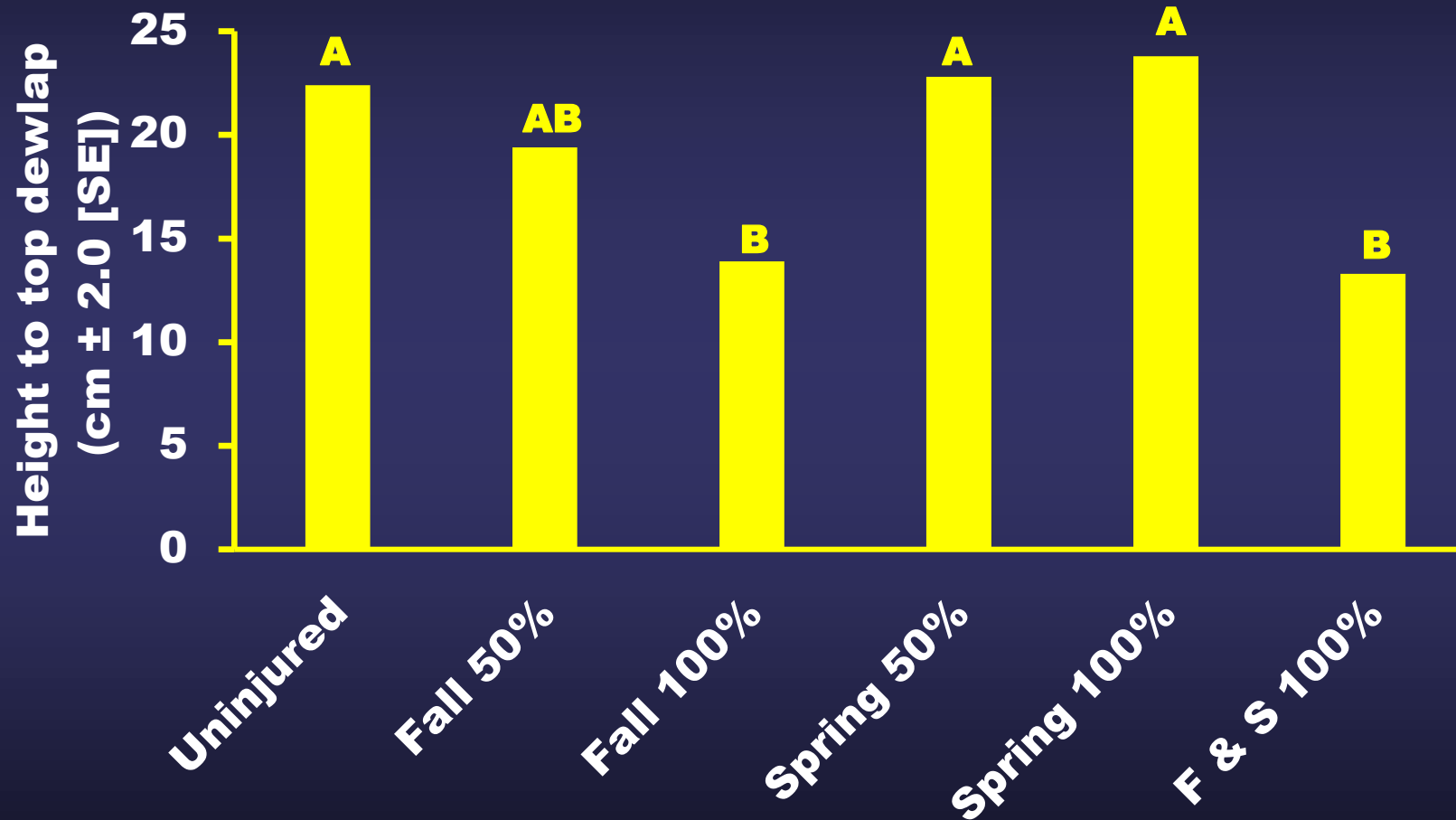
## Oct 21, 2021



Tukey's HSD,  $P < 0.05$

# Defoliation Trial – St. Gabriel

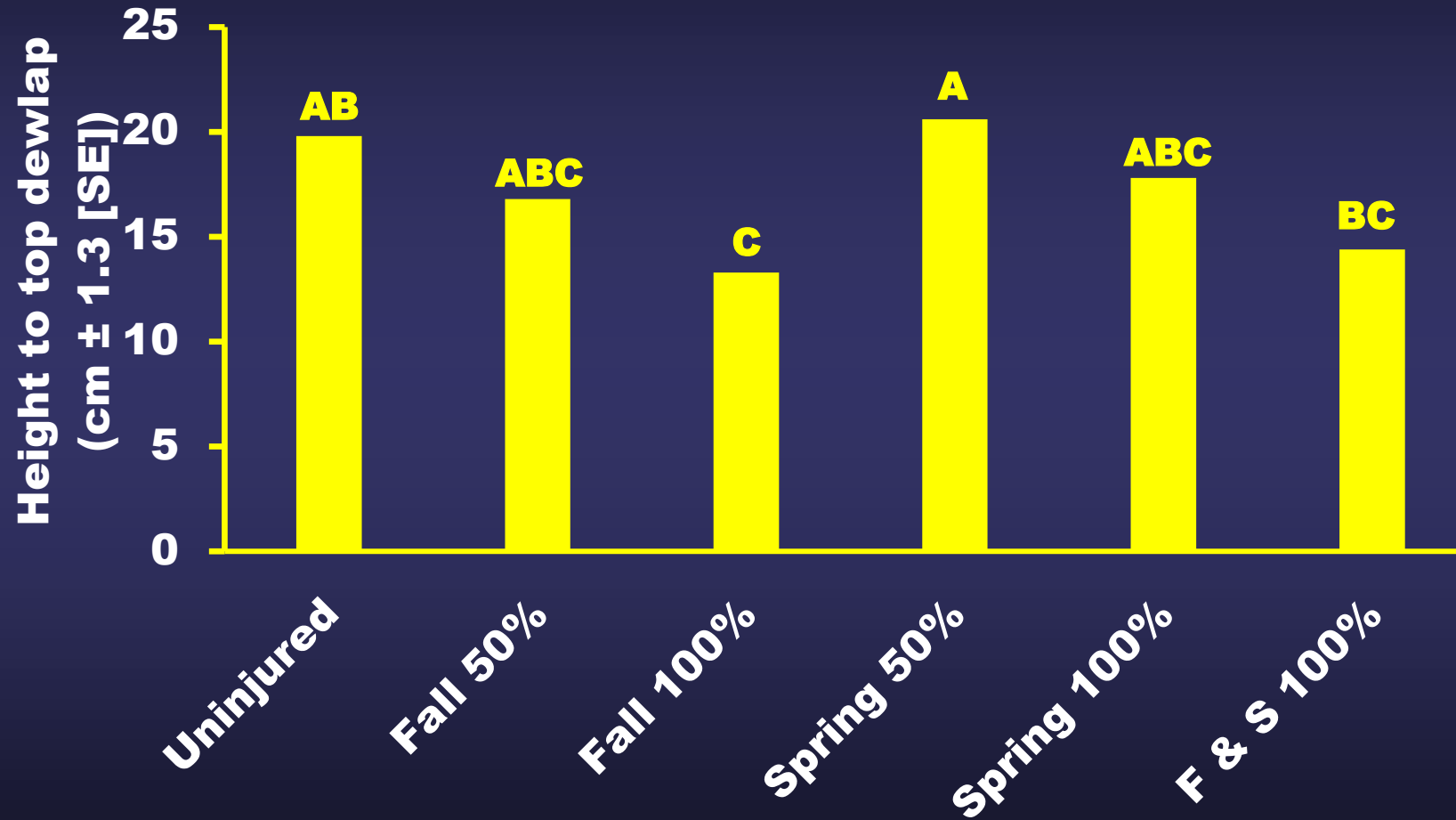
## Nov 12, 2021



Tukey's HSD,  $P < 0.05$

# Defoliation Trial – St. Gabriel

## Jan 14, 2022



Tukey's HSD,  $P < 0.05$

# **West Indian canefly (WIC)**

## ***Saccharosydne saccharivora***



**Prefers younger cane**

**Populations often decline by mid-summer**

**Economically damaging in some cases**

**Wilson et al. 2020. [J. Econ. Entomol. 113: 263–272.](#)**

# **WIC in plant cane**

## **Impacts of Fall and Spring Sootymold?**



# Aphicides

## Currently registered:

**Warrior (lambda-cyhalothrin)**

**Mustang Maxx (zeta-cypermethrin)**

**Neither are effective against sugarcane aphid**

## Sivanto (flupyradifurone)

**Butenolide (nicotinic acetylcholine receptor agonist)**

**Systemic**

**Field-realistic rates caused minimal mortality of beneficial predators**

**Effective against both canefly and sugarcane aphid**

# **Insecticide Update**

**Sivanto (flupyradifurone) approved for IR-4**

**Aphids, West Indian canefly**

**Residue studies needed for Section 3 registration**

**Broflanilide (BASF) approved for IR-4**

**Wireworm control at planting**

**Efficacy and residue studies needed**

**Platinum (thiamethoxam) label anticipated**

**Spring 2024 for wireworm control**

# Wireworm Trials



**Inoculated trials on station –  
1 larva per row foot**

# Wireworm Trial – USDA Farm

| Treatment          | Rate        | Tillers/acre<br>26 Oct 2021 | Tillers/acre<br>13 Dec 2021 |
|--------------------|-------------|-----------------------------|-----------------------------|
| Infested control   | NA          | 15,636 d                    | 33,636 c                    |
| Uninfested control | NA          | 24,545 bc                   | 42,727 abc                  |
| A22466             | 2.7 fl oz/a | 22,545 c                    | 45,273 abc                  |
| A22466             | 4.6 fl oz/a | 22,364 c                    | 41,090 bc                   |
| A22466             | 6.8 fl oz/a | 29,627 ab                   | 48,909 ab                   |
| Platinum           | 5.7 oz/acre | 33,455 a                    | 54,727 a                    |
| F =                |             | 8.40                        | 6.31                        |
| df =               |             | 5, 20                       | 5, 20                       |
| P =                |             | <0.001                      | 0.001                       |

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# Questions?



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