2015 Pesticide Safety: Understanding GMO's

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Understanding GMO’s

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Overview

• What are GMOs?
• Why GMO crops?
• What crops are available as GMOs?
• What can be in cranberry products
• Seed packets for homeowners
• Who regulates GMO crops
• What about labeling GMO crops

• http://www.wcgb.com/chronicle/food-fears-gmo-foods/27352354
What does GMO mean?

• Crop varieties developed using genetic engineering techniques
• Allows the transfer of a specific gene or set of genes across genetic lines not possible with traditional breeding
• Extracting and isolating a specific DNA segment that makes up a gene and inserting it into plant cells and using tissue culture to create a plant
• Use traditional methods to create a population
Why GMO crops?

Desirable traits:
• Disease and pest protection
• Herbicide resistance
• Better nutrition
• Drought resistance
• Improve storability
Crops Available as GMOs

- Herbicide resistance
  - glyphosate (RR) (corn, soy, sugar beets, canola, alfalfa)
  - glufosinate (Liberty Link) (corn, cotton, soybean, canola)
- Insect resistance
  - Bt (corn, cotton)
- Disease resistance
  - Virus (sugar beet: BNYVV, papaya: PRSV, squash: CMV, ZYMV)
- Nutrition
  - Vitamin A (golden rice, yellow cassava)
  - Storability (less bruising potatoes, non browning apples)
- There are no GMO Cranberries!
What might be in cranberry products

- Sugar from GMO sugar beets in cranberry juice
- High fructose corn syrup from GMO corn in cranberry juice
- Corn syrup from GMO corn in cranberry sauce
- High fructose corn syrup from GMO corn in cranberry juice
Homeowner seed packets

- Do not contain GMO seeds
- Some garden centers advertise that they have seeds that are non-GMO
- But, so does everyone else
Who regulates GMO crops?

- **EPA** – is it safe in the environment
  - Regulates genetic material incorporated into the plant: any long term impacts
- **USDA** – is there any risk to plant and animal health
  - Possibility of organism spreading into the environment?
- **FDA** – is it safe to eat (people and animals)
  - Substantially equivalent to non GMOs
  - Any allergens, toxicants, or nutritional issues
GMO Labeling

- No Federal labeling requirement
- If FDA finds any differences in nutrition, allergens, toxicants then labeling would be required
- Currently the only food label that ensures no GMO is USDA Certified Organic Label
- Voters in four states have rejected mandatory labeling of food containing GMOs:
- Three states have passed mandatory labeling laws
  - Connecticut, Maine, and Vermont
  - Connecticut and Maine will not go into effect until other surrounding states pass similar laws, Vermont will go into effect July 1, 2016 (challenge in court)
Arguments For and Against

• Supporters of GMO labeling laws:
  – consumers have the right to know what is in their food
  – in the absence of a federal regulation states should pass laws in order to provide this information
  – GMO foods pose a danger to the environment and human health

• Opponents of these laws:
  – USDA that have found no health or safety risks: laws unnecessary and misleading consumers
  – violate the First Amendment by mandating speech
  – laws would harm interstate commerce and increase the costs of food prices across the country
  – Cornell University Study: proposed ballot initiative in Colorado passed, it would have increased food costs for a family of 4 by $500 per year
Advertising

• Advertising can be confusing
• There are web sites that list products that are non-GMO (ex. “the Non-GMO Project” www.nongmoproject.org )
Thank You!

Photo: Ken Roseboro