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2015 Pesticide Safety: Understanding GMO's

Geoffrey Njue
UMass Amherst Extension, gnjue@umext.umass.edu

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Understanding GMO’s

Geoffrey Njue
Umass Extension
Green Industries Specialist
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.wcvb.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