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GMO's: Answering Customer's Questions



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Overview

- What are GMOs ?
- Why GMO crops?
- What crops are available as GMOs?
- What can be in your greenhouse
- Seed packets for homeowners
- Who regulates GMO crops
- What about labeling GMO crops

• <http://www.wcvb.com/chronicle/food-fears-gmo-foods/27352354>

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What does GMO mean?

- Crop varieties developed using genetic engineering techniques (“gene splicing”)
- 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

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Why GMO crops?

Desirable traits:

- Disease and pest protection
- Herbicide resistance
- Better nutrition
- Drought resistance

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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 (papaya, squash)
- Nutrition
 - Vitamin A (golden rice, yellow cassava)
- There are no ornamental GMO crops!

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What might be in your greenhouse

- Squash transplants (yellow and summer)
- Sweet corn transplants
- But only if you specifically bought GMO seed, signed a licensing agreement, and planted it
- You are not allowed to sell these plants to homeowners or other farmers

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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

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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

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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:
 - Washington (2013), California (2012), Colorado (2014), and Oregon (2014).
- 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)

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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 :
 - violate the First Amendment by mandating speech
 - USDA that have found no health or safety risks: laws unnecessary and misleading consumers
 - 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

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Advertising

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

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Thank You!



