



# GENETICALLY MODIFIED FOODS



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# Before Reading Any Further...

What is the first impression you get when you hear “genetically modified” foods?

**Is it ...**



**? OR**



**What's scarier is not knowing the facts!**



# What are genetically modified foods?

- ❖ Also called genetically modified organisms (GMO).
- ❖ Involves the insertion of DNA from one organism into another OR modification of an organism's DNA in order to achieve a desired trait.



Arctic fish DNA

+





strawberry

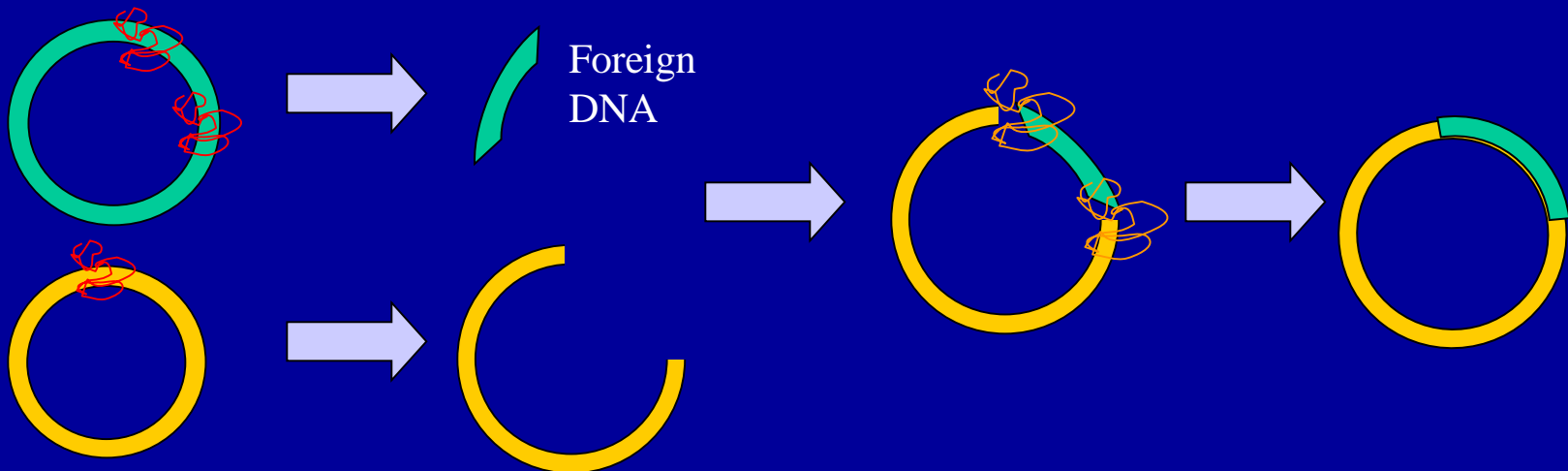
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A strawberry  
resistant to frost



# Modifying Genes

- ❖ Also called recombinant DNA technology, molecular cloning, and genetic engineering.
- 1. Restriction enzymes  are used to “cut” DNA segments from one genome.
- 2. DNA ligases  are used to “paste” them into another genome.





# How are plants targeted?



- ❖ Agro bacterium that normally infects plants with disease is used to infect plant with gene of interests or...
- ❖ A particle gun is used to shoot small bits of metal coated with the gene into the plant.





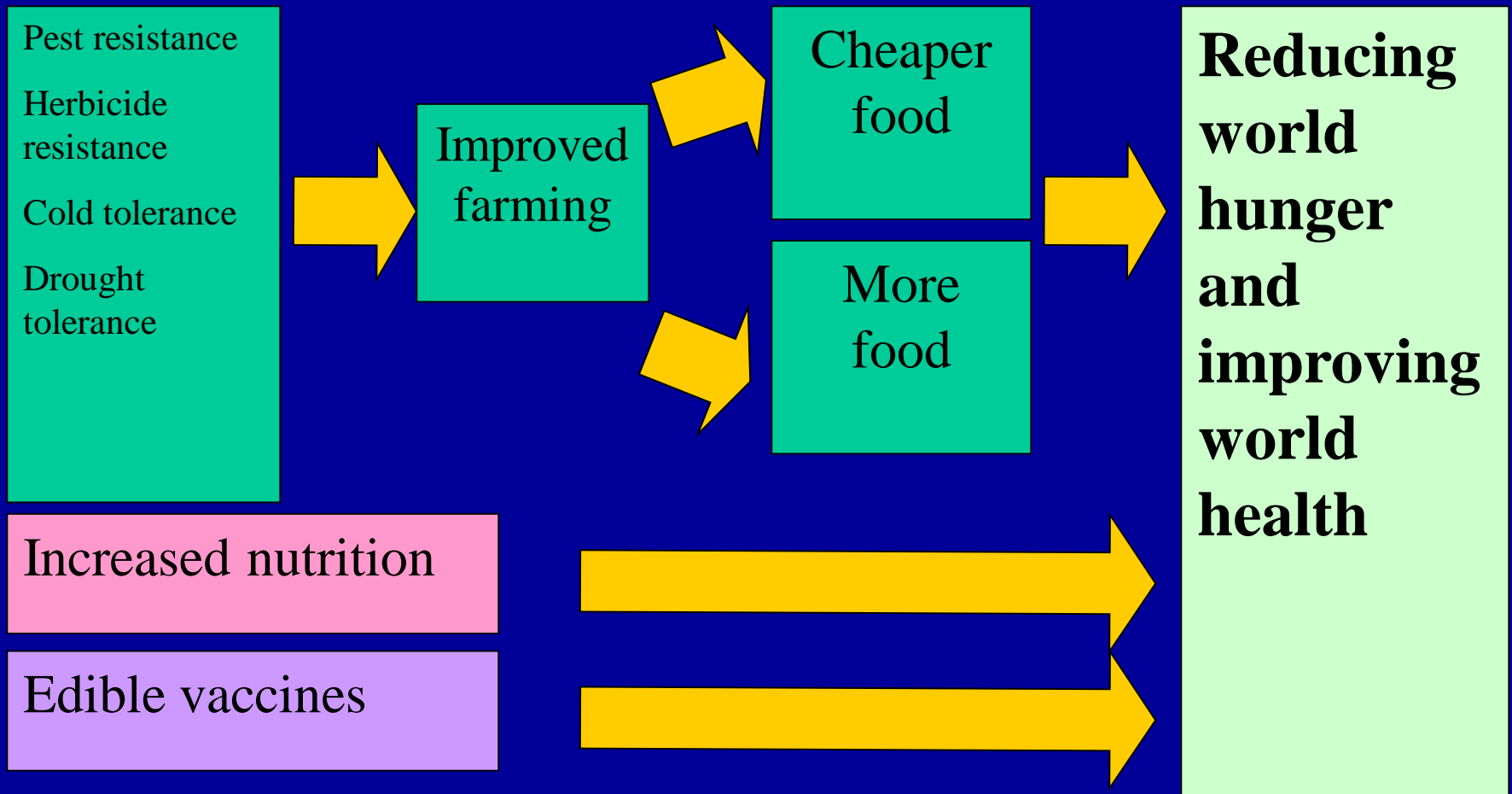
# Examples of GMO's

**Common examples**

- GOLDEN RICE
- COTTON
- CANOLA
- ASPARTAME
- INNATE POTATO
- ZUCCHINI
- PAPAYAS
- SUGAR
- DAIRY
- COTTON
- CORN
- YELLOW SQUASH
- SOY
- ARCTIC APPLE



# Potential Benefits





# GMO's Hazards



## ENVIRONMENTAL HAZARD

- ❖ Reduce use of herbicides and chemicals in farming.
- ❖ Loss of genetic diversity and increasing susceptibility to crop disease.
- ❖ Reduced effectiveness of pesticides as insects become resistant to engineered toxins.
- ❖ Uncontrolled biological pollution

## HUMAN HEALTH RISKS

- ❖ Create food allergens (common food allergens are egg, milk, fish, peanuts, wheat).
- ❖ Toxic effects on the liver and kidneys.
  - ❖ Responsible for causing birth defects, infertility, sperm destruction, and cancer.





# Creating a balance

## So are GM foods a good or bad thing?

- ❖ It depend on each individual case.
- ❖ Consumers, the government and scientists should be responsible for weighing the benefits against the costs.





**THIS IS MY PRESENTATION ABOUT  
GENETICALLY MODIFIED FOODS**

***THANK YOU***



# Sources

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