Mary Griffin at Derby Foods

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WHAT ARE POTATOES?

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The Potato, or Solanum tuberosum, belongs to the Solanaceae family, which is also home to eggplants, tomatoes, and chili peppers. Potatoes are a widely eaten crop and has been thought as America's favorite side dish. We mash them, fry them, and bake them. They are meals, snacks and entrees. The Irish blame it for a famine, The British call the fried version crisps. Now, I know what you're thinking, If they're so interesting and highly used, why would we ever want to change these delicacies? Well, I hope this presentation will answer that very question...

WHAT DO WE USE POTATOES FOR?

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GMO Compass says that “Only one in four potatoes grown in Europe actually gets eaten by people. Almost half end up being fed to livestock. The remaining one quarter are used as raw material in the production of alcohol and starch”. Potatoes are becoming more useful for food and reusable resources for starch. But the starch of potatoes isn't the "best" starch that the industry needs. But even with the setbacks, the Potato is quite a useful source.

WHAT IS THE POTATO'S CLOSEST RELATIVE

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The potato's closest "wild" relative is the Cuscutaceae family. The Cuscuta genus is home of 100-170 brightly-colored parasitic plants. They are more widely known as "morning glory plants" due to their red orange and yellow colors resemblance of fire and sunrise.

WHAT WERE ANCIENT POTATOES LIKE

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The edible part of the potato is the tuber, or root. But the tuber of ancient potatoes was poisonous, so the first step to domestication was to neutralize the poison.
And because of their lack of size, farmers would use bigger samples.

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WHAT HISTORY DO POTATOES SHARE WITH HUMANS?

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Potatoes are the second widest used staple crop in the world right now. Potatoes were first domesticated more than 10,000 years ago in South America, the Andean highlands, between Peru and Bolivia. There are over 151 different species of potatoes, but the most common worldwide is tuberosum. Tuberosum was imported in Europe in the mid-1800s from Chile when a fungus disease almost completely destroyed tuberosum. Andigena, the original species, was imported by the Spanish directly from the Andes in the 1500s.

WHAT I ACCOMPLISHED BY GM POTATOES

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"For the processing industry, a mixture of multiple starches is a problem. The industry hast to separate the two starches using an expensive process that takes a toll on the environment. This is why plant breeders are working hard to create potatoes that generate only one type of starch. Right now, emphasis has been placed upon creating potatoes containing only amylopectin, due to its diverse applications. Created by the J. R. Simplot Company, 'Innate' potatoes were developed by inserting extra genes into them, that are modified but that otherwise exist naturally in the potato. By practicing genetic modification using RNA interference (RNAi), scientists use these genes to shut down a few of the potato's other original genes – a process called gene silencing."

Pors/Cons Of GM Potatoes

PROS:

- Some of the genes being shut down cause bruising and create acrylamide when baked or fried. Acrylamide is an amino acid which has been proven to increased an animal's risk of getting cancer.
- Gene silencing make the process of using Potato Stach less taxing

Cons:

- "In an experiment in Scotland, rats fed GM potatoes containing a gene for a protein, lectin, fared poorly and suffered internal organ damage." Pro-GM scientists have fought back against the study, but at the very least it highlights the need for extra research.