

In 2008 Canada announced the production of the first genetically modified environmentally friendly pig!

### Problems, Pigs, and Phosphorous

Pigs are not environmentally unfriendly, but they are fed supplements that make their waste a hazard. All animals need phosphorous in their diet. Farmers feed pigs extra phosphorous because they do not easily digest it from food. While some phosphorous is absorbed, much of it flushes straight through the pig and is excreted in urine and feces and into the environment.

### The Need for Phytase

Animals produce special proteins called enzymes, which help build up and break down molecules. Phytase is an enzyme responsible for breaking down phosphorous. Farmers feed extra phytase to pigs to help them digest phosphorous. Unfortunately, the phytase supplement is not that efficient, so the poop still contains lots of phosphorous.

Pig poop is recycled and used on agricultural land as fertilizer to help plants grow. The extra phosphorous from the pig feces washes into watercourses such as rivers, lakes, and oceans. The presence of this phosphorous promotes the growth of algae in watercourses, and can cause a very rapid accumulation of algae known as an algal bloom.

### Algal Blooms and Dead Zones

As algae populations increase, competition for resources increases, and many algae begin to die. Bacteria decompose the algae, but there are so many algae to decompose that the



Phosphorous in pig feces can cause environmental problems, but Canadian scientists may have found a solution.



Increased phosphorous levels in water can lead to algal blooms.

DNA is incorporated into the pigs' DNA. New pigs are bred using the transgenic cells and the pigs can absorb phosphorous from their food because phytase is produced in their saliva.

The phytase produced by Enviropigs is 99% similar to the phytase pig food supplement.

### All-stop

In early 2012 funding for the Enviropig program was stopped and research halted. The producers of Enviropig could not find one company to sell its product. Pork-producing companies were too concerned about public opinion to take on the challenge.

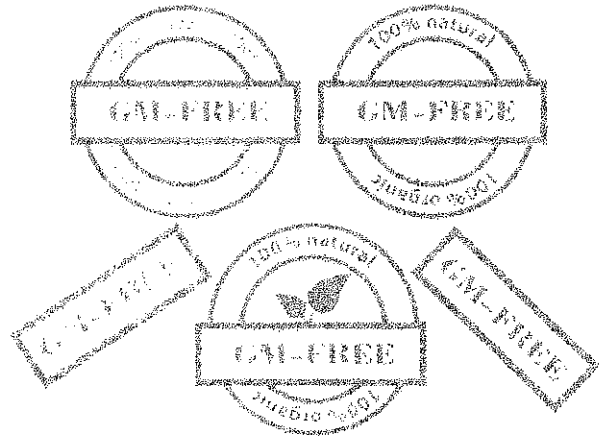
Genetically modified foods are still new to the food industry and people are suspicious of consuming them. Many ethical organizations considered the abandonment of this program a success.

Scientists are trying to meet the demands for a cleaner, more environmentally friendly future while meeting the ever-increasing demand for food.

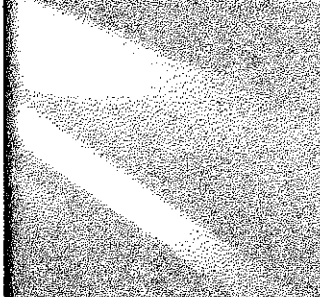
There is no evidence to suggest that Enviropig pork is harmful to people consuming it, but many members of the public believe it is unethical to alter the genes of living organisms.

### The Future of Enviropigs

The Canadian scientists are sure that one day the public will be ready for Enviropigs. While the program has been suspended, the semen of the transgenic pig has been frozen and preserved. When the public is ready, the scientists can easily recreate Enviropig.



Some organizations object to the use of GM foods.



## Discovery Education: "Enviropig"

1.

<b>S</b>	<i>Speaker.</i> Who is the speaker of the poem? (persona)	Clip slide
<b>O</b>	<i>Occasion.</i> Consider the context, setting, circumstances that surround the poem. If it's not explicitly stated, you may infer from what is written. What prompted the author to write this piece?	
<b>A</b>	<i>Addressee.</i> Who is the poem being addressed to?	
<b>P</b>	<i>Purpose.</i> What is the speaker's purpose for writing the poem? What is the message of the poem?	
<b>S</b>	<i>Subject</i> and main idea of the poem What is being talked about? How do you know that this is the subject of the piece?	
<b>Tone</b>	What is the attitude of the author toward what he or she has written?	

**2. Summary: Write a 6-8 sentence summary about the article!**