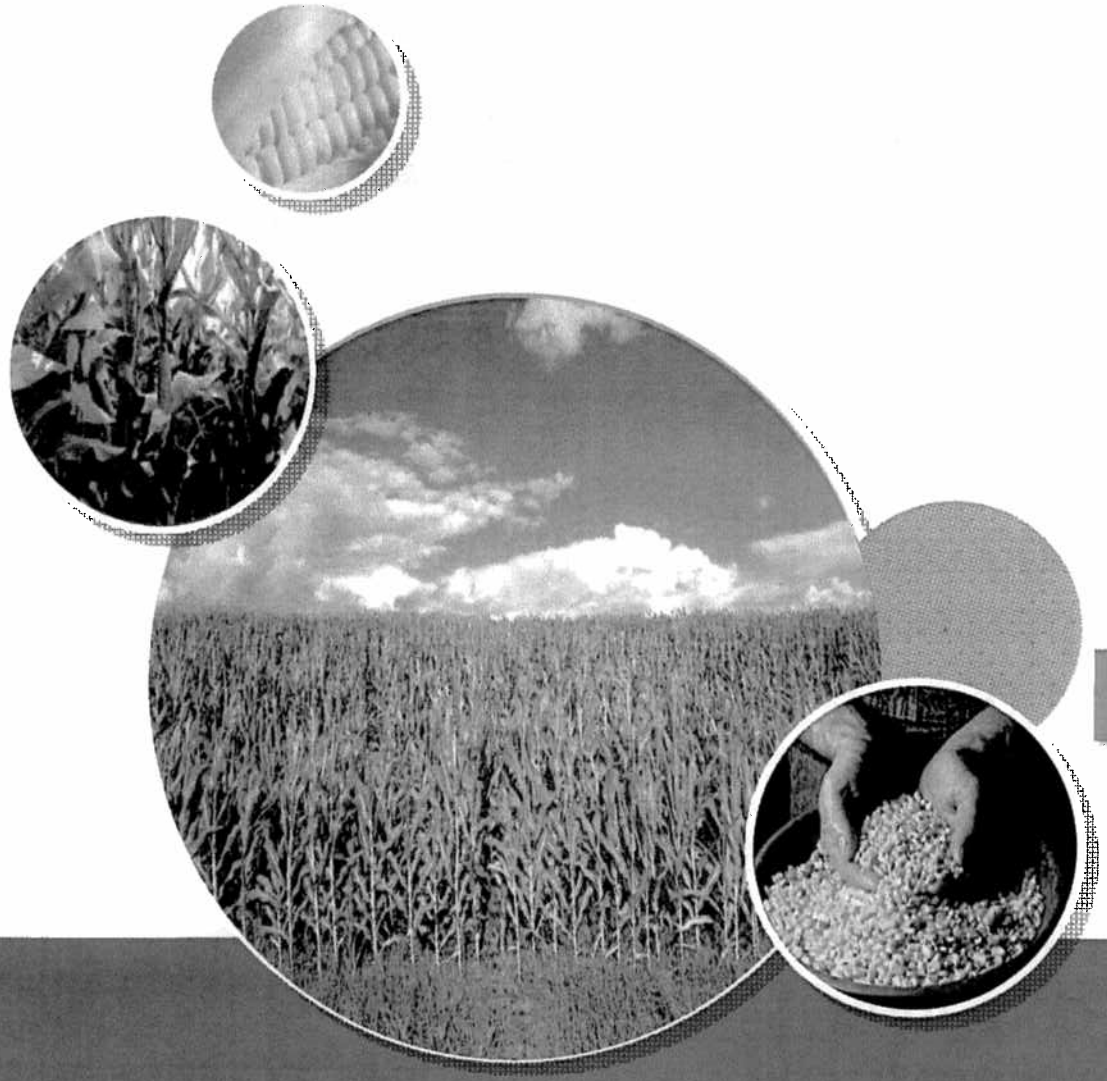
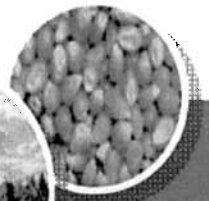
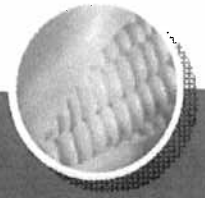


On-Farm Ethanol Production

Val Vail-Shirey
Policy Coordinator
Michigan Corn Growers Association



Why is corn so important?



- Corn is America's largest crop.
- Michigan ranks 11th in terms of corn production
- Nearly 300,000 corn farmers in the U.S. produce 40 percent of the world's corn.
- More than 11,000 corn farmers in Michigan.
- Corn is Michigan's second largest commodity, dairy being first.
- Michigan's corn industry added more than one billion dollars to the state's economy in 2007.

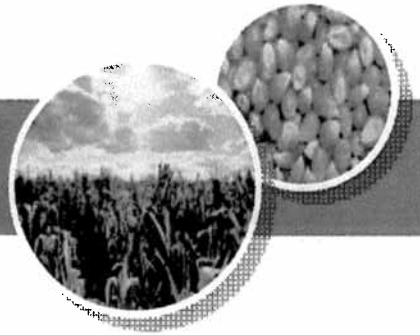
Michigan's Corn Crop

	2008	2009	2010
Production (million bushels)	295	309	315
Yield (bushels/acre)	138	148	150
Acres Harvested (million)	2.14	2.10	2.10
Production Ranking	3	2	1

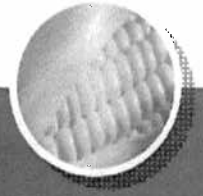
Three continuous years of record setting production!

The Basics

- On-farm biofuel production allows for farmers to utilize their own & local resources to create energy and animal feed
- Both the fuel and its co-products can be used right on the farm
- Promotes sustainability, energy independence and entrepreneurship
- Decreases input costs for farmers

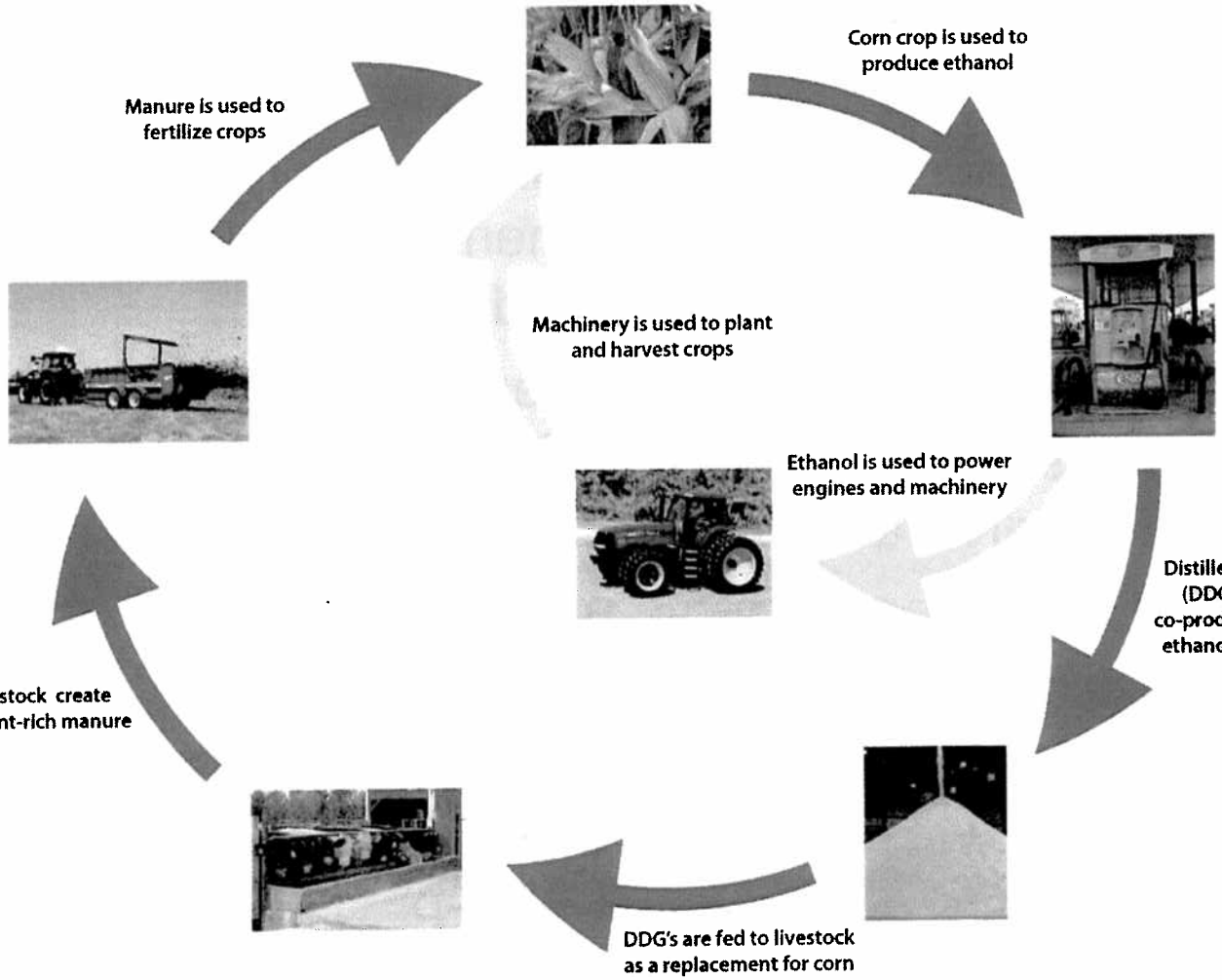


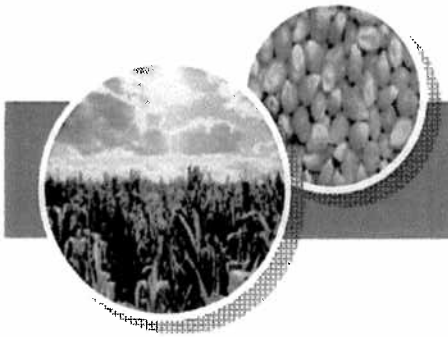
How the Ethanol Process Works



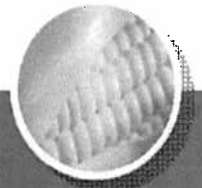
- Using local crops – typically corn although other feedstocks (fruit, vegetables, cellulose) can be utilized.
- The crop is ground/milled into a fine powder and water is added to create a slurry. The slurry is then heated until a liquefied product known as mash is created.
- Enzymes are added for the fermentation process which creates two products: beer and carbon dioxide (a co-product that can be marketed in large quantities)
- The beer is distilled to create ethanol
  - Dependent on the use, the proof may be 40% and up.
- The left over mash is dried down to create dried distillers grains (DDGs) or left wet to be used as wet distillers grains (WDGs) both of which are a high-value, high-protein livestock feed

Ethanol Production Full Circle





The Benefits of On-Farm Ethanol

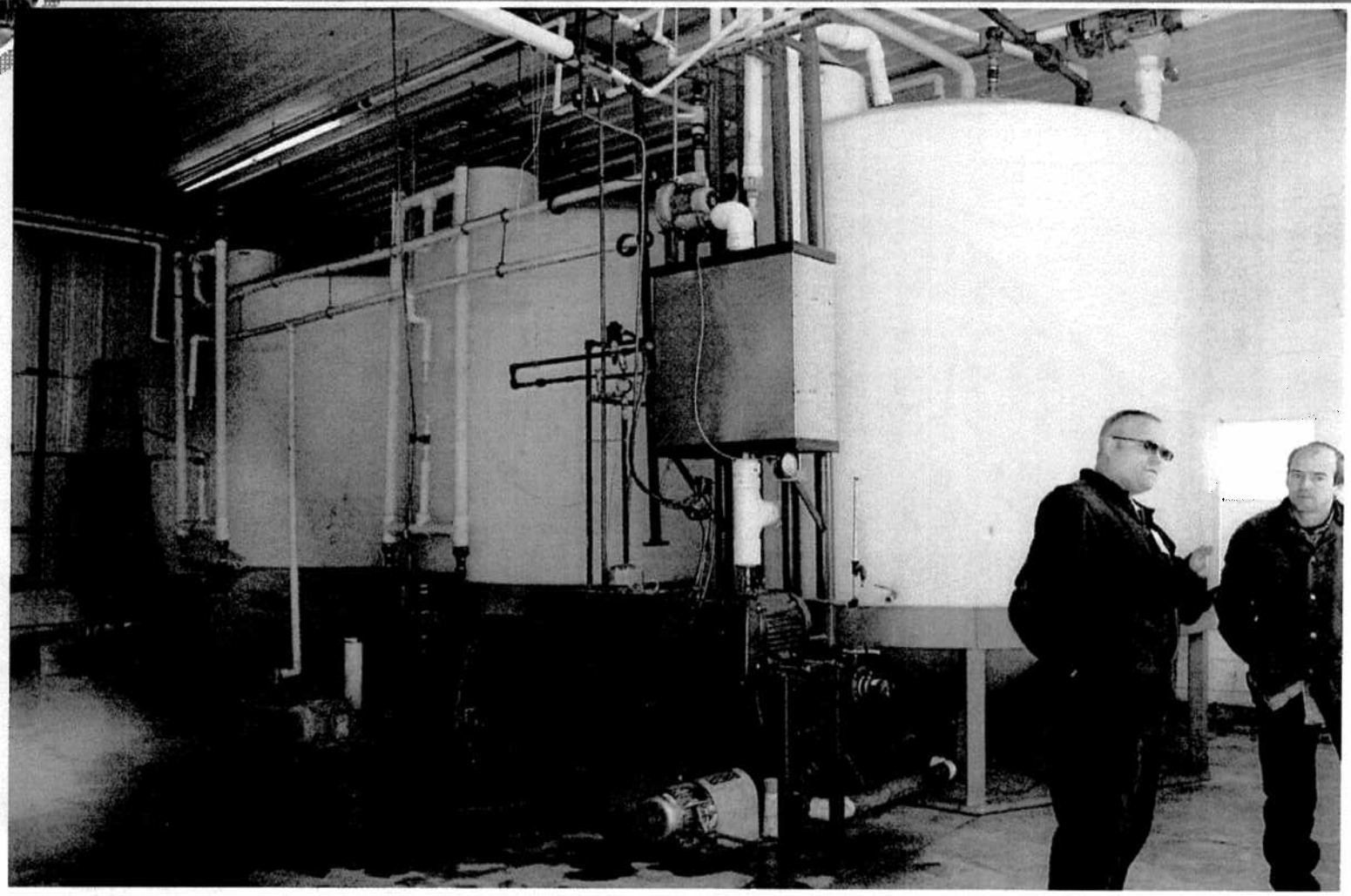


- Reduces costs for the farmer as they are able to use their own crop/other local crops & waste to create their own fuel and feed for livestock
- Reduces dependence on foreign oil
- Creates more engine horse power and a cooler operating engine (dependent on use)
- Cleaner burning fuel – reduces GHG emissions
- Creates additional market opportunity for farmers
  - Livestock Feed, Fuel, CO_2
- Utilizes fuel from an annually renewable source
  - Increases commodity demand, increasing price, adds more money to the local economy

Why Not?

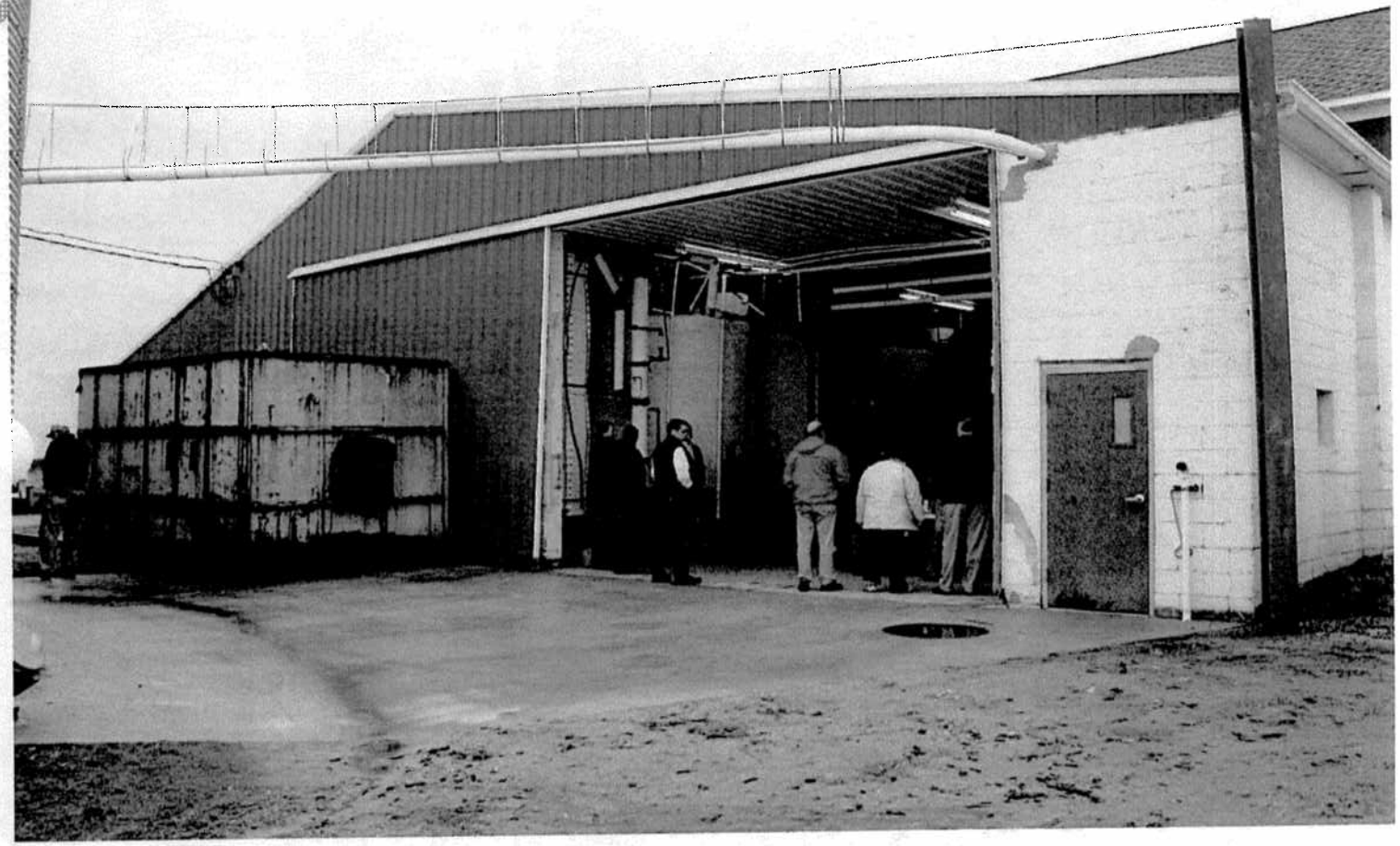
- Does it smell bad? No! The only odor emitted is a sweet smell similar to that of baking bread
- Are they an eyesore? No! Most people will not even be able tell that biofuels are being produced on the property unless they have intimate knowledge of the property/facility. A facility that can produce 100,000 gallons/year can easily be contained in a 40 x 40 size building
- Are they loud? No! Productions facilities do not generate any more noise than normal farm equipment
- Will they pollute the environment? No. In order to be permitted, facilities must meet all state (DEQ) and federal (EPA) environmental regulations.

A Look at On-Farm Production

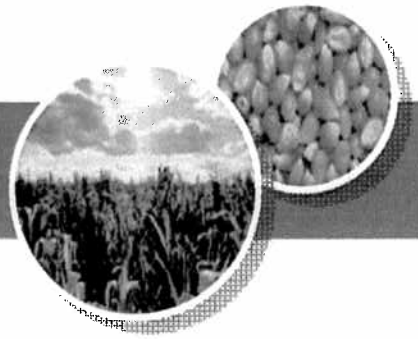


A 40,000 gallon/year facility would require only one large cylinder like these

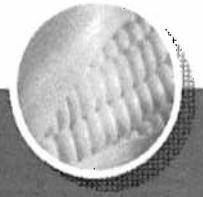
A Look at On-Farm Production



- A 100,000 gallon facility would easily fit inside the space of a standard farm storage building



Thank You!



- For more information on Michigan's $1 billion dollar corn industry or corn-ethanol production, contact:
  - Val Vail-Shirey
    - (517) 668-2676
    - valvailshirey@micorn.org