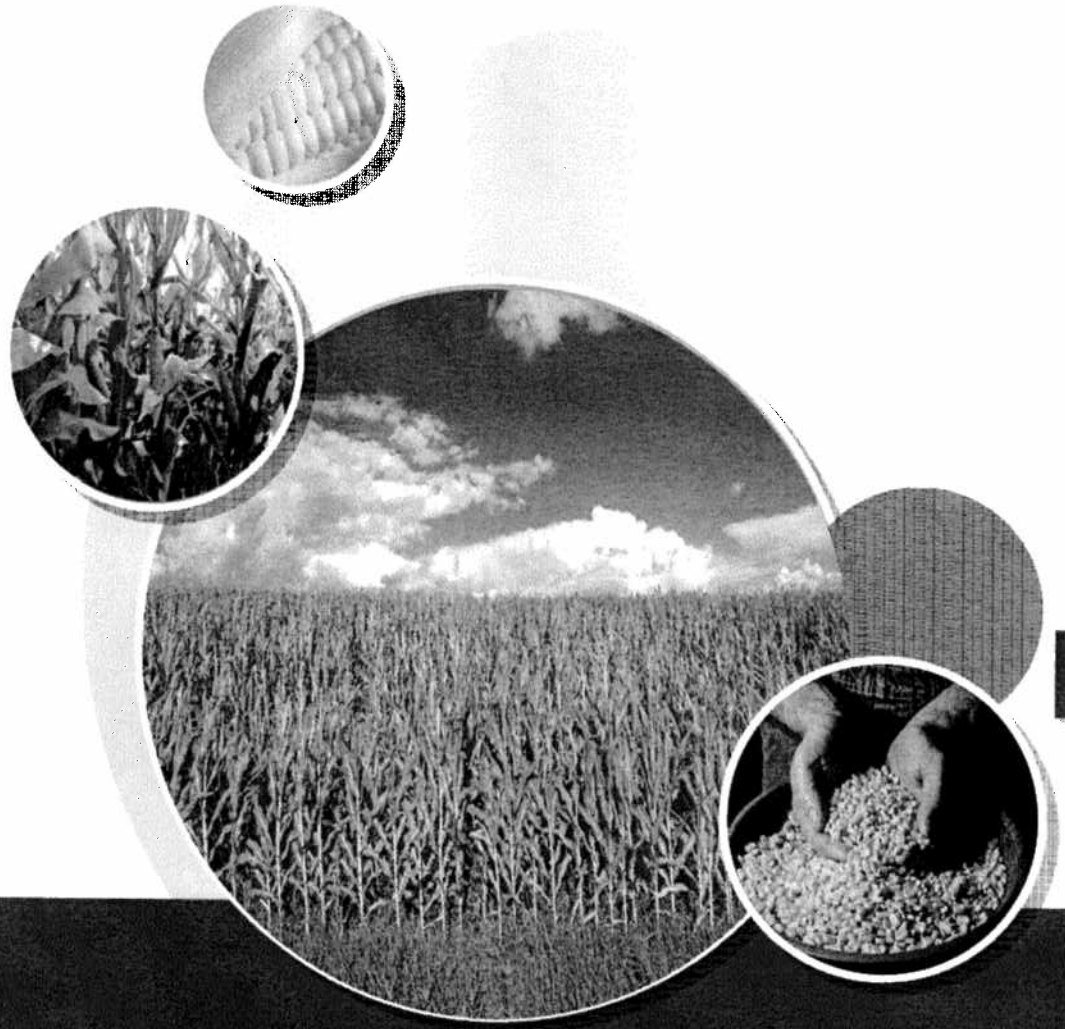


On-Farm Ethanol Production

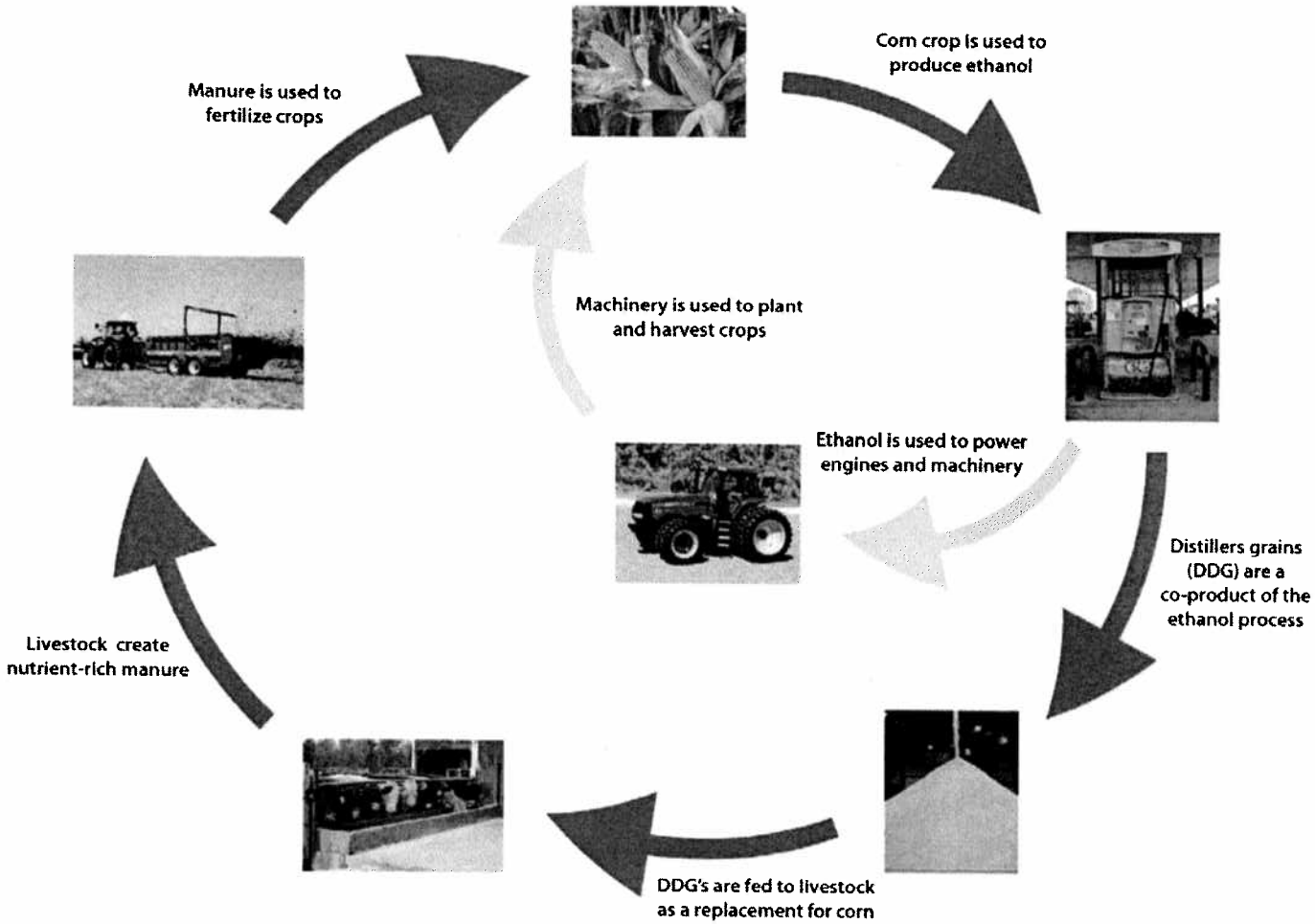
The Basics

- 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 dependence 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

House Bill No. 4838

- Legislation intended to regulate on-farm processing
- Introduced on April 28, 2009 by Reps. Meekhof, Ball, Booher and Agema
- Bill would amend the MI Zoning Enabling Act to allow production of biofuels (ethanol, biodiesel, etc.) on agriculturally zoned land and provide that any site that meets the permitting requirements of the TTB, and any other state or federal regulations (i.e. DEQ, EPA) will not have to meet further extending local ordinances
- Referred to the Committee on Energy and Technology

Proposed Bill

- This bill would allow up to 500,000 proof gallons of ethanol or 500,000 U.S. gallons of non-ethanol biofuel to be produced by right as long as the following has been met:
  - Proof of all state and federal environmental guidelines have been met (air and water quality standards)
  - Set-back of 100 foot from the property line
  - All adjacent property is non-residential
- Special Use Permitting would be required for:
  - Production of more 500,000 proof gallons of ethanol or 500,000 U.S. gallons for non-ethanol biofuel
  - Areas with adjacent residential zoned property

What You Need To Be Permitted

- Small plant, producing 10,000 proof gallons or less in a calendar year (July 1 – June 30):
  - TTB Application permit, no bond is required as long as the alcohol is going to be used as a fuel
  - All state and federal air and water quality environmental standards must be met
  - There may be additional requirements to be followed such as those set by OSHA, MDA, building codes, etc. Some of the items that may contain additional regulation are for raw material transportation and storage; byproduct storage, transportation and reuse; water withdrawal, quality; and air quality.

What You Need To Be Permitted

- Medium plant, producing more than 10,000 & not more than 500,000 proof gallons in a calendar year (permitted by right):
  - Same requirements as Small plant in addition to:
    - Requires providing proof of permit or certification from the state EPA/DEQ office and paperwork to allow all paperwork to be disclosed to the federal EPA.
    - Supplemental information on water quality considerations
    - Distilled Spirits Bond
    - Environmental information, Personnel Questionnaire, Signing Authority
    - Special storage requirements and Proof of security measures may be requested

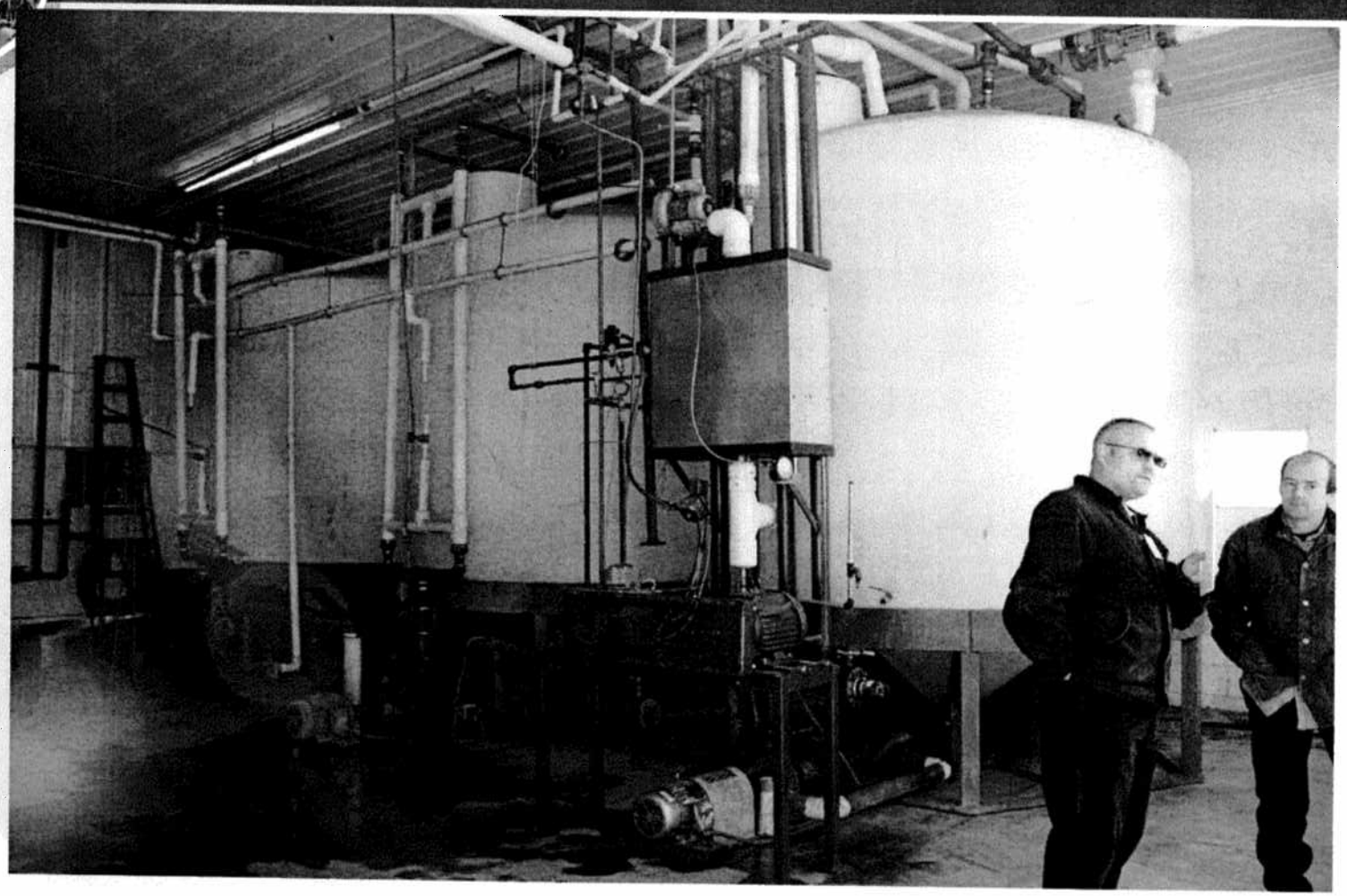
What You Need To Be Permitted

- Large plant, producing more than 500,000 proof gallons in a calendar year (Special Use Permit required).
  - Same requirements as Medium plant in addition to:
    - Information on principle persons involved.
    - Statement of investment and funding sources
    - Statement of type of business organization & organization's officers
    - Organizational documents & Corporate Documents if applicable

Why Not?

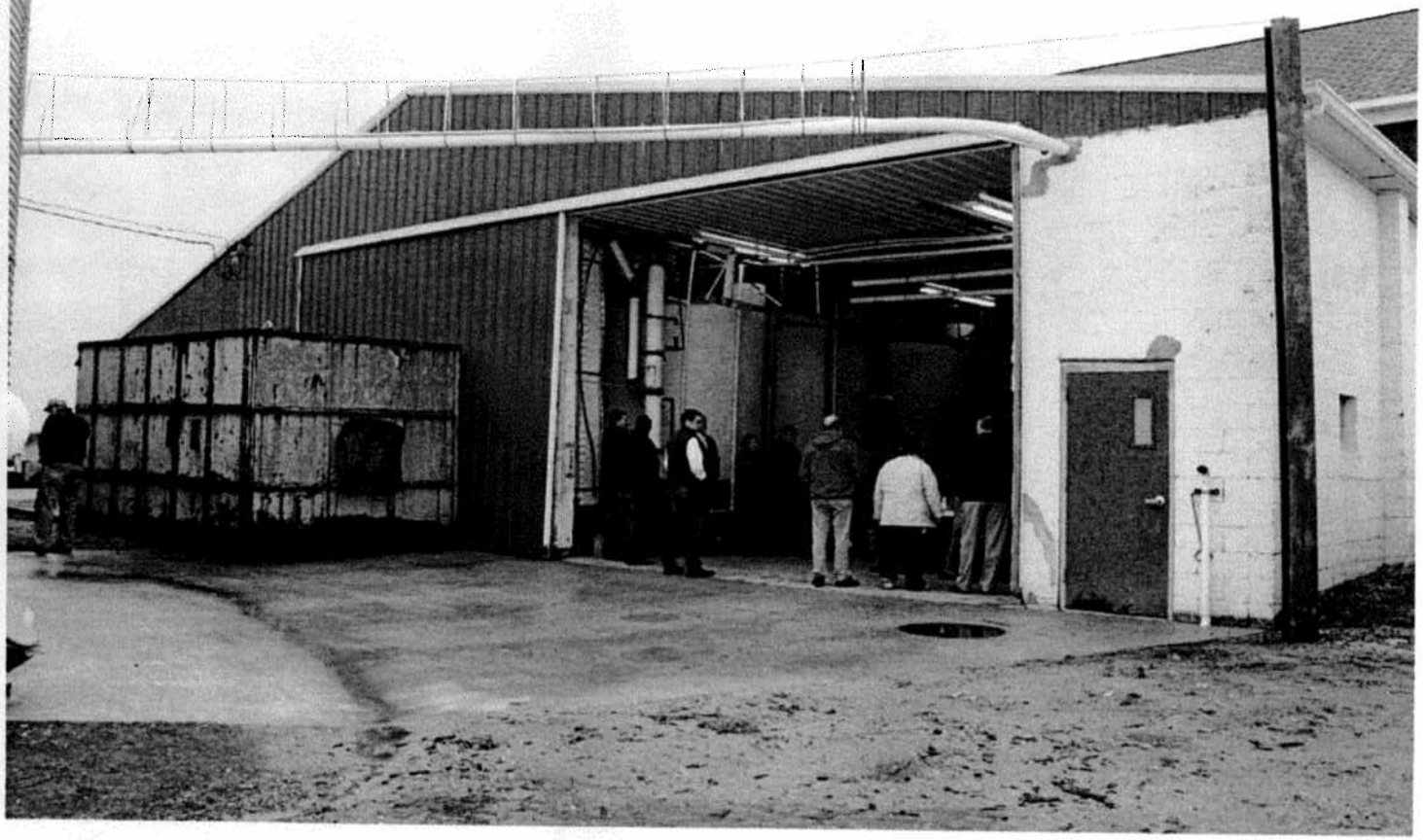
- Does it smell bad? No! The only odor emitted is a sweet smell similar to that of baking bread
- Are they an eyesore? No! Most people will not even be able tell that biofuels are being produced on the property unless they have intimate knowledge of the property/facility. A facility that can produce 360,000 proof 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 proof gallon/year facility would require only one large cylinder like these

A Look at On-Farm Production



- A 360,000 proof gallon facility only occupies
- the space of a standard farm storage building

House Bill 4838

- On-farm biofuels production promotes sustainability, energy dependence and entrepreneurship
- Michigan's farmers are leading the way to a greener future and a more robust state economy, but they need your help!
- Please utilize this information as you consider House Bill 4838

Questions or Concerns?

- For more information please contact:
  - Julian Vail, LLC.
    - Phone: (517) 372-1500
    - Email:
      - Larry Julian: larry@julianvail.com
      - Val Vail-Shirey: val@julianvail.com
  - Michigan Corn Growers Association
    - Phone: (517) 668-2676
    - Email:
      - Jamie Cook: jcook@micorn.org