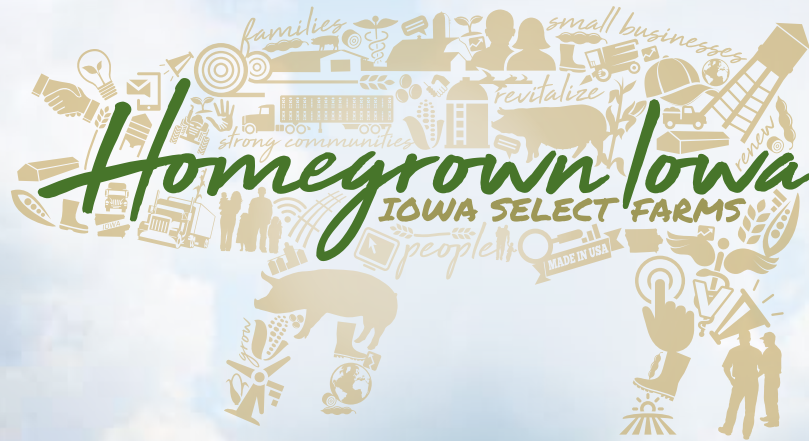




S U S T A I N A B L E

# Finisher Farm Model

Our Commitment to Animal Care, Soil Health and Being Good Neighbors





## OUR COMMITMENT TO BEING GOOD NEIGHBORS

Environmental care, stewardship of our natural resources and positive neighbor relations is a core value of Iowa Select Farms. We take proactive steps to minimize our environmental impact and work cooperatively with scientists, government agencies and members of our local communities to address these issues.

In May 2018, Iowa Select Farms set a specific plan to reduce odors from finishing farms. Iowa Select Farms unveiled an electrostatic fence technology at the end of each new finishing barn. The technology was included in the plans after the company switched from a naturally ventilated, curtain-sided barn to a tunnel-ventilated finishing barn.

In addition, Iowa Select Farms announced a partnership with the Coalition to Support Iowa's Farmers' Green Farmstead Partner Program. As a Green Farmstead Partner, all new company-owned finishing farms feature trees on three sides of the farm and shrubs on one side. Selected for their quality, hardiness, growth traits and ability to serve as an effective windbreak, the trees and shrubs will help reduce livestock odors coming out of the barns.

The electrostatic fence features two electrically charged lines of barbed wire powered with 30,000 volts that will "knock down" the odor-carrying dust particles exiting the fans of the tunnel-ventilated barn.

When the dust enters the ionization field between the fans and the electrostatic fence, a negative charge is placed on the dust particles. When the dust particles hit the mesh fence, it serves as a grounding plate which attracts and grabs the charged particles.

The fabric fence also slows the airspeed and mechanically filters the larger dust particles and which will be washed off by rain showers, or by a power-washer if necessary.

EACH  
**2,490**  
HEAD BARN  
will have  
**62 TREES &  
46 SHRUBS**

EACH  
**5,000**  
HEAD BARN  
will have  
**80 TREES &  
82 SHRUBS**



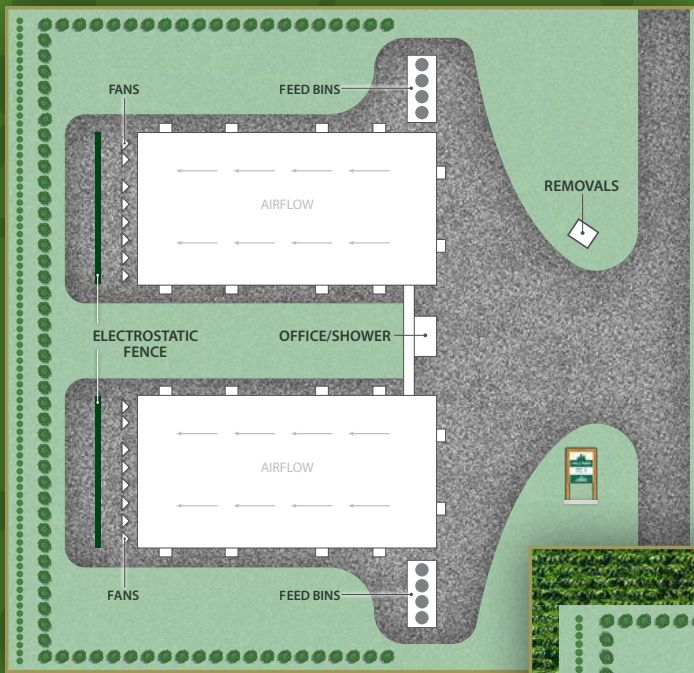
Iowa Select Farms finishers built after 2018 are Green Farmstead Partners



Tree line



Electrostatic fence

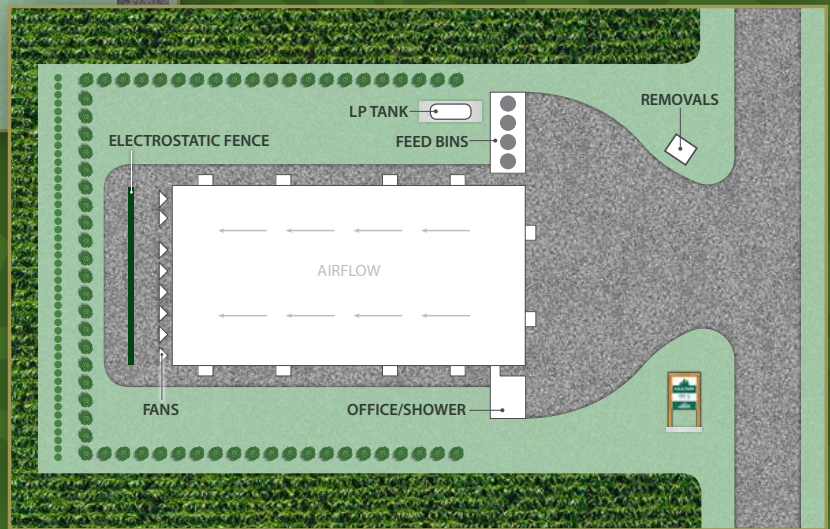


DOUBLE BARN

*Farm*  
5,000 hd

SINGLE BARN

*Farm*  
2,490 hd



### IOWA SELECT FARMS FINISHERS

Our new finishing farms built in 2018 and after are designed to accomplish the following goals—

- Animal care and comfort during the wean-to-finish phase of production
- Caretaker safety and satisfaction
- Generation of high quality, organic soil fertilizer
- 4R Nutrient Stewardship
- Continued reduction of odor

Finishing farms, also referred to as “wean-to-finish” farms, are designed to house pigs from 12 pounds to market weight. The farms are outfitted with penning and equipment that adjusts as the pigs grow.

New finishing farms built in 2018 and after are tunnel-ventilated, fully-slatted 2,490 or 5,000 head farms that feature technology and best management practices to accomplish odor reduction.

Two barn, 5,000 head finisher







*Inside pens, gates and feeders*



*Quality materials and construction*

### **ANIMAL CARE AND COMFORT**

The average growing phase of the pig is close to six months. Inside the barn are several features that allow the caretakers to provide excellent care during all growing stages. Brooders, heaters, adjustable waterbars, mats and gruel feeding pans help transition weaned pigs into their new environment.

As pigs grow, caretakers reconfigure the pens' gates to allow pigs even more room to roam while accessing fresh water and feed. Pre-sort pens help the caretakers sort the pigs ahead of loading, making it easier on the caretakers, load teams, drivers and the pigs.

### **TUNNEL VENTILATION DESIGN**

Maintaining the proper temperature and humidity level for the growing pig is the key objective of any barn's ventilation system. "Tunnel vent" barns mechanically pull air down the length of the barns, through the fans and to the electrostatic fence. While curtains are affixed to barn sides, they will only be dropped in the event of an emergency.

Another advantage of a tunnel vent barn is the flexibility of site layout and barn orientation. Because the barns are power ventilated, versus natural ventilation, we can better determine where to place the barn relative to neighbors, the road, entryway and other factors.

### **IMPROVED WATER CONSERVATION THROUGH WET-DRY FEEDERS**

By investing in technologies such as wet/dry feeders to reduce water waste and improving feed efficiency, we have reduced manure production from our finishers by 20 percent, as compared to standard manure production values. This means there is less liquid manure volume produced at the farms.

### **DEEP PIT MANURE STORAGE**

Storing manure in eight feet deep pit concrete manure storage structures reduces odors and better preserves the nutrients in the manure—good news for neighboring crop farmers.

Manure pits are designed by third-party engineers, and farm managers monitor and record pit levels weekly.

Manure captured in the pits beneath the building is safely stored until after harvest or spring. Professional, certified manure application teams inject manure into the nearby fields, replenishing the soil with essential nutrients.

### **ELIMINATION OF PIT EXHAUST FANS HELPS REDUCE ODORS**

The tunnel ventilation design paired with new ventilation research has led Iowa Select Farms to not install pit exhaust fans on its new farms. ISU researchers estimate a significant reduction in odor is realized by replacing pit fans with more innovative airflow solutions.

Ammonia, hydrogen sulfide and odor are reduced 10-20 percent (Jacobson et al., 2001, 2008) when airflow is controlled by the mechanized tunnel ventilation system. With the elimination of pit exhaust fans, air no longer flows over the manure surface, where volatilization of gases occurs due to convection.

*Homegrown  Iowa*

*Iowa Select Farms*





## 4R STEWARDSHIP COMMITMENT FOR NUTRIENT MANAGEMENT

Iowa Select Farms creates field-specific nutrient management plans, matching the nutrient needs of the soil with the nutrients in the manure.

4R nutrient stewardship provides a framework to achieve cropping system goals, such as increased production, increased farmer profitability, enhanced environmental protection and improved sustainability.

To achieve those goals for farmers, Iowa Select Farms follows the 4R stewardship framework, which ensures the right fertilizer source at the right rate, at the right time in the right place. Soil and manure sampling and analysis are a key part of the 4R strategy, along with using GIS soil mapping technology to create manure management plans.



## PHYTASE ADDITION REDUCES PHOSPHORUS

Our swine diets include Phytase, an enzyme that reduces the excretion of Phosphorus by 25-50 percent. By reducing the amount of Phosphorus excreted in the manure and complying with Iowa's limits as to both Nitrogen and Phosphorus application based on crop needs and the P Index, we greatly reduce any negative impacts of Phosphorus loss.

## KNIFING IN NUTRIENTS DURING APPLICATION SEASON

During the short time period when nutrients are applied to neighboring crop ground, professional, certified nutrient-application teams utilize manure "injectors" and precision agriculture technology to ensure odors are minimized and contained to a short window, typically within a two-week window after fall harvest.

With the adoption of manure application "injectors," also referred to as "knifing in," farmers have:

- **Reduced ammonia odor by up to 90 percent (ISU, Hanna et al., 2000)**
- **Reduced hydrogen sulfide odor by 50-75 percent (ISU, Powers, 2004)**
- **Achieved an overall reduction in odor by 50-75 percent (ISU, Lorimor, 1998)**

*Manure restores soil health, has better bulk density, more micronutrients and improves soil aggregation*







## OUR COMMITMENT TO RESTORING SOIL HEALTH



Iowa Select Farms is passionately committed to responsibly producing pork for our customers and continuously improving how we do it.

Finishing barns allow Iowa farmers the opportunity to diversify their cropping operations and transition from commercial fertilizer to natural fertilizer.

For centuries, farmers have known the value manure has on their soil health. Manure restores organic matter to the soil, has better bulk density, more micronutrients and improved soil aggregation. When farmers use manure properly, it results in a healthier soil that can better withstand erosion and runoff and increase crop yields by 6.1 percent.

When manure is used as a crop fertilizer, especially when injected, it becomes a key strategy to Iowa's overall effort to reduce nutrient loss into water sources. For farmers who have livestock or have access to the manure generated from nearby barns, it can also mean a more secure future in farming. In addition to its restorative properties and yield bumps, manure is generally cheaper than commercial fertilizer.



### MANURE VALUE

Manure has a value to farmers of \$162.68 per acre. The nutrients in a 5,000 head finisher will replace \$30,129 worth of commercial fertilizer each year, or \$602,580 over 20 years.



*Manure injecting greatly reduces odor during application*



## GROWING COMMUNITIES, GROWING IOWA

According to Dr. Dermot Hayes, Iowa State University Economist, one 5,000 head finishing farm generates \$403,200 in total economic impact.

Hayes says when rural counties experience an increase in livestock production, they typically see an overall increase in county income. In fact, an ISU study (Monchuk, et al., 2007, 2011), showed that rural counties that do not experience growth in livestock receipts typically lose out on \$17 million in county income.

## FARMERS WORKING TOGETHER

Behind every hog barn is an Iowa farmer—or five! While smaller finishing barns do not require the larger teams of employees of our sow farms, don't be fooled. There are many farm families who are involved in finishing barns, all working together.

- Neighboring crop farmer or contractor grower
- Barn manager
- Barn supervisor and veterinarian
- Mowing crew
- Custom manure applicator team
- Contract trucking service
- Load and wash teams







# Iowa Select Farms

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