

Dublin Farms

Environmental Program and Plan

The operation's goals are for the farm to produce a higher yielding crop each year with less inputs including water, fertilizer, chemicals, mechanical equipment, labor, and fuel. The operation strives to reduce its impact on the environment by increasing habitats for wildlife, increasing the beneficial insect population, monitoring weather conditions to reduce run off or drift, and investing in equipment that reduces the carbon footprint. The farm strives to invest in research that will allow them to continue reducing their impact on water and field soil.

- **Environmental Goal Targets**

- Install water flow meters to determine water flow discharge into septic system and from wash flume into the recirculating pond. We hope to reduce water usage by 5% with new equipment in 2026.
- Reduce bag ripping and having to discard by 5% in 2026 with equipment that improves efficiency of handling bags, boxes, totes, etc.
- Reduce the total use of propane by 5% in 2026 with newer equipment and requiring less usage of forklifts, workers, etc. Right now forklifts do a lot of the lifting of totes, pallets, etc. Newer equipment provides more mechanized handling steps, versus human or forklift lifting.
- Reduce the usage of power in the facility by 5% in 2026 because of the installation of newer and more energy efficient potato handling equipment.
- Reduce or maintain current usage of fertilizer and chemicals in 2026 through utilizing soil tests, soil moisture meters, crop scouting for pest and diseases, cover crops, and conservation tillage.

- **Environmental Laws and Ordinances** – the operation yearly updates any environmental laws they must follow including emissions, water usage, fertilizer applications, calibrations, licensing, and environmental inspections. The state Extension Office regularly sends updates when new laws or changes will be in effect. This information is stored with the Facility Manager.

- **Packaging Materials, Usage, and Recycling** – The operation strives to use recycled or able to be recycled packaging whenever possible, while also respecting the customers requirements to sell in their stores or network.
 - Master bags, Chef size bags, and some smaller specialty consumer packs are all made of recycled or can be recycled paper. These are then packed onto wood pallets that are also reused as at least half the pallets are in a recycled pallet program.
 - Pallets not in this program are still wooden pallets that are reused or sold for reuse by the end facility.

- Large ton totes are purchased through a supplier that buys used bags and runs them through a process of sanitation for them to be reused. Some buyers require new totes for food safety reasons, but we try to encourage those to go back to a network where they can be reused in the future. This also goes for totes used for seed potatoes, cover crop seed, fertilizer, or any dry chemical applications.
- Packaging of any kind that does not meet our specs is either recycled locally, reused (like totes) on the farm, or used to sell some potatoes locally if possible.
- **Water usage and Recycling water** – The operation uses water in a few different ways: irrigation, wash flumes, spray bars before packing, cleaning the facility, and worker hygiene. Water is sourced from wells that are powered through electricity. On remote farms, irrigation pumps may be run by diesel generators.
 - **Irrigation** – overhead pivot irrigation from a natural spring-fed pond is used. Usage needed is determined by soil moisture monitoring. Tips on the pivots are the drop down and low volume style to reduce the amount of water wasted if traditional tips were used, allowing waste of water that won't reach the plants. Water is only applied by field need after scouting or using meters to determine need and amount of water. Large flow wells aren't able to be used on the peninsula, and this action allows the farm to still move a higher water volume without drilling a larger well that could negatively impact ground water supply.
 - **Wash Flumes** - because of the size of the wells and inability to pump the needed volume directly from the ground, water is pumped from several wells into a multi-pond filtration system. Water is pumped at the beginning of the season and then as needed to fill the ponds. Water is then pumped from the pond into a one pass wash flume, to knock the dirt off the potatoes. Water then immediately exits the wash flume and flows to the first section of the pond. There are three sections with a rock wall in between each. The rock walls filter dirt and organic matter out of the water. The water is then pumped back to the wash flume to start the process again. This process reduces the need for additional wells that would deplete the ground water system. The water is used throughout the six week season and then is replenished 11 months later to start the process again.
 - **Spray Bars** – the single spray bar is in machinery that is hooded to prevent excess spillover and keeping water directed to the intended use. The water comes from the low flow wells but any water that runs through the system gets recirculated back to the rock wall pond system mentioned above. A low dose of sanitizer is used but it not at a strength to harm the environment, per studies done through Virginia Tech for the purpose of studying food safety techniques used.
 - **Cleaning** – a small amount of fresh water from the low flow well is used for cleaning throughout the week, with the largest use on Sundays. This is at 100 gallons of water used or less. Drains are installed in areas where

more water is needed to clean machinery and excess water is circulated back to the rock wall pond system mentioned above. This water is filtered and then reused in the wash flume system.

- **Worker Hygiene** – A small amount of water is used in worker hygiene daily (50 gallons estimated or less) for toilets, sinks, and hand washing equipment. This water is either sourced back to the ponds (equipment washing) or into the septic system that filters water back into the ground eventually.
- **New equipment** – Operation has built an entire new packing facility that is connected to the old facility. The old facility will now be expanded storage to be able to bring all supplies under one roof. The new equipment is built to European environmental standards and was installed under their guidance. Not only will it reduce the total number of workers required for the amount of potatoes packed on average per year, its also projected to reduce the amount of power and noise pollution versus the older equipment used 2025 and prior.
 - The operation will be monitoring power usage within the facility in 2026 to compare to the power usage from the previous two years. This is projected to reduce power usage by at least 5%.
- **Wildlife habitat** – the operation values the ability of a farm to provide habitat for wildlife that other types of businesses cannot. Wildlife habitat (native plants, tree lines, streams, ponds, and green buffer zones) are maintained at both fields and the facility. Birds have roosting or nesting spots in tree lines and native plants are maintained along the edges to increase space for beneficial insects or provide food for wildlife. The operation also plants cover crops yearly and some of these crops provide food and/or habitat for native wildlife.
- **IPM** – The operation has a comprehensive IPM program to reduce chemical usage through scouting, reporting from local Extension Research stations, and weather data. Scouting allows the farm to determine if a pest has reached a threshold to act or if it needs continued monitoring. This allows steps to be taken proactively rather than having to increase chemical controls once a full blown infestation or outbreak is seen. Chemical application pre season for nematodes has reduced post planting applications by 90% and increased yields by at least 25% vs non application pre season.
- **Septic** – the farm is not in an area with municipal sanitation systems and has septic to handle waste. This is pumped yearly and contains all waste as not to allow run off into any outside areas except the tank. A certified company does the pump out yearly and all maintenance on the system is conducted by a licensed plumber.
- **Dirt Removal at wash and taking back to field** – there is a significant amount of dirt removed from the fields when potatoes are dug. This could increase with wetter conditions, but harvest is scouted to help reduce harvest on days with high moisture. The dirt that is collected from the wash flume system is recycled back to the fields it came from originally. This replenishes any soil taken in the harvest process and helps level the field to reduce potential run off issues.

- **Weather Monitoring** – the operation invested in weather stations that provide real time data from multiple fields. This helps not only with wind, but moisture data, temperatures, and conditions that may increase the risk for specific potato diseases. The station is used each day to determine if sprays can be made or if conditions are correct or not for the chemical according to the label. This has proved a valuable tool also monitoring conditions for harvest decisions in order to help better predict if harvest is needed before equipment is moved.
- **Beneficial species** – the operation encourages beneficial plants and insects by providing green space along each field, encouraging beneficial native plants, and maintaining habitat for wildlife. The operations practices this is at the field and the facility, working each year to increase space for these species.
- **Chemical applications tied to justified reason and following guidelines** – the operation has trained and licensed individuals that administer any chemical applications. All applications are tied to a justified reason through either scouting, weather conditions, or nearby detection at the Extension Research data stations. No applications are made without up to date information, where some operations use more historical data to apply.
- **Monitoring soil moisture** – soil moisture meters are used to monitor the need for irrigation in the field. The very top of the soil usually doesn't tell the entire story and to not only reduce usage, but also to not cause harm to the crop, meters are used. This data will determine when and how much irrigation will be applied.
- **Cover Crop** – Cover crops are used in each winter season to add nutrients, increase soil moisture retention, decrease soil compaction, decrease potential for soil erosion, and add organic matter back to the soil.
- **Soil testing before fertilizer applications** – soil testing is conducted on each field after destruction of the cover crop and before planting. This information is used to determine the need for fertilizer applications and monitoring for any micronutrients that need to be applied. Soil testing after the cover crop also gives better to determine if the cover crop is doing its job or whether a different crop would benefit the soil more next season.
- **Equipment calibration** – All application equipment (chemicals and fertilizer) is calibrated before use and when any maintenance is conducted to reduce overuse of either. All applications are monitored also when applications are made and if the application does not cover what it should, then checks are made to determine why. Maintenance will be done and recalibration occurs.
- **No GMO's used** – No GMO's are used on the farm or on any farms within the region. This is declared during other inspections and to the buyer.
- **Inspection of all equipment yearly to comply with state and federal guidelines (trucks, potato bodies, etc.)** – the State of Virginia requires at least an every two year inspection for emissions equipment in all on the road farm equipment. Equipment is also installed in most tractors. This helps reduce the carbon emissions of the farm through equipment usage.