

Farm Description: 1,500 acres of grain and forage managed to feed cows, heifers on dairy

GROWER:

Sean Jones (*left*)

LOCATION:

Massey, Maryland

RETAIL FACILITY:

Willard Agri-Service

CROP ADVISOR:

Michael Twining (*right*)

RETAILER LOCATION:

Worton, Maryland



WHAT SEAN SAYS ABOUT THE 4Rs:

“A combination scrape/flush flume system removes manure from barns into a sand separation system. A slope screen separator removes large solids for application in accordance with our nutrient plan and the right place practice of the 4Rs. Low solid material is applied via pivot irrigation at the right time. Using irrigation, we capitalize on nutrients and the 4Rs.”

WHAT MIKE SAYS ABOUT THE 4Rs:

“We pulled more than 30 manure analyses to ensure our decisions were as accurate as they could be. These helped us be certain we were applying nutrients at the right rate. All pivot systems can fertigate based on plant tissue analysis and our nitrogen modeling tool, guided by the 4R principles.”

ECONOMIC MEASURE OF SAVINGS:

Better balancing of dairy manure has enabled use across more acres in accordance with balanced crop needs and has significantly reduced nutrient imports to the farm.

BEST MANAGEMENT PRACTICES IMPLEMENTED ON THE FARM:

- Extensive nutrient management planning for 1,250 dairy cows, 1,000 heifers, dry cows and calves
- GIS-based recordkeeping system
- Variable-rate seeding matches productive capabilities of soil and water supply
- Crop analysis using Willard Agri-Service Decision Support System
- Four-stage manure lagoon system for storing and applying manure when needed in a form matched to crop and field demand
- Intensive management matched inside and outside of manure handling system
- Manure handling system extracts phosphorous, in the form of struvite, from the liquid manure stream to better balance the rate the crops need
- Targeted tissue testing of crops ensures balanced fertility with in-season fertility applications
- Uses side dressing, fertigation and in-crop applications of manure through irrigation to ensure nutrient applications are matched to crop demand
- Extensive scouting ensures fields are protected from weeds, insects and disease
- Nitrogen stabilizers are routinely applied on commercial fertilizer ground and manured ground to help manage the risk of loss of N because of leaching or denitrification
- Pre-side dress nitrate tests ensure availability of nitrogen
- Advanced water management program daily tracks crop growth, water demand and available soil water
- Extensive use of cover crops on 75 percent of cropland each winter recycles nutrients, increases soil tilth and land use efficiency

FORMS OF NUTRIENTS APPLIED:

Custom-blended liquid fertilizer, foliar and soil-applied, liquid dairy manure segregated into eight analyses, solid dairy manure.

NUTRIENT USE EFFICIENCY:

For grain corn, N use efficiency is as low as 0.83 lb/bu, a 17 percent improvement from previous years. Can remove up to 30 percent of phosphorous from manure stream for a farm total mass balance equal to or less than crop removal.

AVERAGE YIELD FOR EACH CROP:

CROP	ACRES	YIELD/AC	UNIT
Barley/Grain	105	9.25	Bu
Barley Direct Cut	213.5	9.37	Tons
Small Grain Silage Boot	709	5.75	Tons
Corn Silage	923	29.63	Tons
Corn Snaplage	89	11.23	Tons
Corn Grain	403	219	Bu
Soybeans/Double Crop	65	74	Bu