Yahara Pride Farms 2021 Phosphorus Reduction Report

Yahara Pride Board of Directors

May 30, 2022

Executive Summary

During 2021, the YPF Board of Directors decided to expand the Cost Share Program to include one new practice, no tillage planting on fields with soybean stubble, an existing cover crop, and/or alfalfa. The goal of this program was to increase the implementation of a positive agricultural conservation practice on fields where that practice has a high probability of succeeding and reduce the amount of tillage occurring within the Yahara Watershed.

There were 10 incentive programs offered within the watershed in 2021 and another cost share payment offered to farms that implement more than one practice on a field (multiple practices); however, the payment amount for multiple practices is determined after the cost share payments for individual practices are paid. The 2021 conservation practices cost shared through the Yahara Pride Program were:

1. Planting an over-wintering cover crop (OWCC)
2. Planting a non-over-wintering cover crop (NOWCC)
3. Low disturbance deep tillage and cover crop (LDDT+CC)
4. Low Disturbance Manure Injection (LDMI)
5. Strip tillage
6. No tillage
7. Deferred kill of alfalfa
8. Seeding grass with alfalfa
9. Headland stacking of manure
10. Composting manure
11. Using multiple practices on a field

The reason that YPF offered bonus payments to farms that implemented a combination of practices on the same field (two or more practices) is that over several years of data analysis it is apparent that using more than one practice increases the reductions of phosphorus loss greater than the sum of each individual practice. Each of these programs offers unique benefits both from a phosphorus reduction standpoint as well as educational and confidence/trust building within the watershed.

This report provides an update on the number of acres, fields, and farms involved in each of these programs. The Wisconsin Phosphorus Index (P Index) was used to determine the reduction in the risk of phosphorus loss. The phosphorus index is estimated using the SNAP Plus computer model, which estimates the pounds of phosphorus prevented from reaching the nearest waterbody. The nearest waterbody would in most cases be streams and rivers. These estimates of the pounds of phosphorus prevented from reaching a waterbody can then be used (with the

appropriate delivery factors) to estimate the pounds of phosphorus prevented from entering the Madison Chain of Lakes.

This report provides the data and summary information for the 63 farms (up from 58 in 2020) that provided SNAP Plus plans to Yahara Pride Farms (YPF) for evaluation of the impact of their Cost Share Program. In 2021, there were nine new farms in the program as well as a few of the previous participants decided not to participate this year. The information provided in this report is based on the difference in predicted phosphorus loss from the adoption of a conservation practice. The 2021 data is based off the plans provided to YPF by the farmers and/or their crop advisors.

All of the data presented in this report are derived from the individual farm's nutrient management plan, which takes into account tillage, crop rotations, and nutrient applications from both manure and fertilizer, and crop yields. This is the best representation of what is actually happening on the farms that participate in the Yahara Pride Cost Share Program. Each farm and field have unique characteristics that influence yields, the tillage system, and the risks for sediment and nutrient loss. That is why we see such large variation in losses within this data set.

Additional work should be done to accurately reflect the cost that farmers have in adopting these conservation systems. Protecting water quality is important to everyone, and everyone needs to be part of the solution. Summary of practices, cost share, and investment:

Introduction

First, thank you to the farmers in the Yahara Watershed Program for working with Yahara Pride Farms (YPF) and Yahara WINS to implement practices that reduce the potential for phosphorus loss to the streams and rivers that contribute water to the Yahara Lakes. The farmers in this area continue to be supportive of Yahara Pride Farms and continue to seek alternative farming systems and conservation practices that reduce phosphorus and sediment loss. This report shows how hard each of you works to keep soil and nutrients on your fields and out of our water. Farmers are the heart and soul of the Yahara Pride Farms Program and we thank you.

YPF and the farmers in the Yahara Watershed also are indebted to 'The Yahara Watershed Improvement Network (Yahara WINs), led by the Madison Metropolitan Sewerage District (MMSD),' which began in 2012 as a four-year pilot project to reduce phosphorus loads and meet more stringent water quality standards established by the Wisconsin Department of Natural Resources (WDNR). This groundbreaking program employs watershed adaptive management, a strategy in which all sources of phosphorus pollution in an area work together to meet water quality goals. This strategy is more effective and less expensive than the sources working

separately on individual solutions. Partners in Yahara WINs include cities, villages, towns, wastewater treatment plants, agricultural producers, environmental groups, and others.

Also, thank you to the businesses and organizations who provide support, both financial and in-kind, to YPF. It takes people and money to offer this cost share, certification, and outreach and education events. We wouldn't be able to do it without your support. This farmer-led watershed approach has become a model for others around the state because we have been able to offer programs and events based on your support. Thank you for being an important part of the Yahara Pride Farms Program.

Finally, thank you to the members of the YPF Board of Directors and the staff who have worked with us during the past years. Your guidance and support have shaped this program and we cannot thank you enough for the time you committed to this organization.

Yahara Pride Farms, Inc., Board of Directors

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Programs Offered in 2021

During 2021, the YPF Board of Directors decided to expand the Cost Share Program to include the practice of no-till planting into soybean stubble, cover crops, or alfalfa. With the addition of this practice the Yahara Pride Cost Share Program offers 11 opportunities for farmers to implement farming systems that reduce the risk of phosphorus loss to lakes and streams. The purpose of these programs is to increase the implementation of conservation practices designed to reduce the loss of phosphorus within the Yahara Watershed.

There were 10 incentive programs offered within the watershed in 2021. There is another payment offered to farms that implement more than one practice on a field (multiple practices), but the payment amount is determined after the cost share payments for the individual practices are paid out. The conservation practices cost shared in 2021 are:

1. Planting an over-wintering cover crop (OWCC)
2. Planting a non-over-wintering cover crop (NOWCC)
3. Low disturbance deep tillage and cover crop (LDDT+CC)
4. Low Disturbance Manure Injection (LDMI)
5. Strip tillage
6. No tillage
7. Deferred kill of alfalfa
8. Seeding grass with alfalfa
9. Headland stacking of manure
10. Composting manure
11. Using multiple practices on a field

Each of these programs offers unique benefits both from a phosphorus reduction standpoint as well as from an educational and confidence/trust building perspective within the watershed.

Methodology

This report provides an update on the number of acres, fields, and farms involved in each of these practices. The Wisconsin Phosphorus Index (P Index) was used to determine the reduction in the risk of phosphorus loss. The P index is estimated using the SNAP Plus computer model, which estimates the pounds of phosphorus prevented from reaching the nearest waterbody. The nearest waterbody would in most cases be streams and rivers. The estimates of the pounds of phosphorus prevented from reaching a waterbody can be applied to the Madison Chain of Lakes since the lakes are the nearest major waterbody.

What the Data Represents

This report provides the data and summary information for the 63 farms, an increase from 58 farms in 2020, that provided SNAP Plus (SNAP+) plans to YPF for evaluation of the impact of the Cost Share Program. Of the 63 farmers who signed up and provided copies of their nutrient management plans, one farm was not eligible to participate in the program because the fields were outside of the watershed. Looking at the past three years, the program has grown from 45 farms in 2019, 58 farms in 2020, and 63 farms in 2021. Nine new farmers signed up for the Cost Share Program, and four farms that have participated in past years did not participate in 2021. The information provided in this report is based on the difference in predicted phosphorus loss from the adoption of a practice such as strip tillage, low disturbance manure injection, cover crops, headland stacking of manure, or combination of two. As stated, SNAP+ plans were provided by the farmers and/or their crop advisors.

The change in the risk of phosphorus loss is calculated using the change in the annual phosphorus index. This has been the basis of this report since the beginning of the program because many of the farms participating in the program want to understand the benefits of implementing an individual practice in a given year. Farmers need to review the cost of implementation, both in dollars and time requirements, against the reduction in the risk of phosphorus loss. Farmers often question, rightfully so, the cost of implementation of a practice versus the returns to their operations (profitability). The other key point for readers to understand about this data is that the field analysis has been standardized. For the 2021 Phosphorus Report the desired implementation period was six years, starting in 2017. This means that cropping practices from 2017 to 2022 were used in estimating the P index. This is done because there are times when a planner plans for several years in the future for a field to meet compliance. For this report it doesn't matter whether the field is in compliance. Knowing what has been implemented in the past and the next year's plan is the basis for the data in this report.

All of the data presented in this report are derived from the individual farmer's nutrient management plan, which takes into account tillage, crop rotations, and nutrient applications from both manure and fertilizer, and crop yields. This is the best representation of what is happening on the farms that participate in the Yahara Pride Cost Share Program. Each farm and field have unique characteristics that influence yields, the tillage system, and the risks for sediment and nutrient loss. That is why we see such large variation in losses within this data set.