2017 Non-GMO
Corn Silage Variety Trial

Dr. Heather Darby,

2017 NON-GMO CORN SILAGE VARIETY TRIAL

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In 2017, the University of Vermont Extension Northwest Crops and Soils Program evaluated yield and quality of 11 non-GMO corn silage varieties in Franklin, VT. An emerging non-GMO milk market has prompted some dairy farmers to start growing non-GMO corn. To successfully convert to growing non-GMO corn, farmers are looking for more information on non-GMO varieties that are available and perform well in our region. While the information presented can begin to describe the yield and quality performance of these non-GMO corn silage varieties in this region, it is important to note that the data represent results from only one season and one location. Compare other variety performance data before making varietal selections.

MATERIALS AND METHODS

In 2017, 11 non-GMO corn silage varieties from three seed companies (Table 1) were evaluated in Franklin, VT. The trial design was a randomized complete block with two replications. Treatments were 11 non-GMO corn silage varieties. These varieties were evaluated for silage yield and quality. Relative maturity and varietal characteristics are provided in Table 2.

Table 1. Participating companies

The trial was planted no-till into herbicide terminated winter rye on 24-May (Table 3). UVM staff assisted with organization, planting, scouting, and harvesting of the trial. All other crop management was performed by the farmer and farm staff. Plant populations and pest scouting occurred on 17-Aug by randomly selecting a 17.5' section of each plot. In each section, the number of plants were counted and each plant was inspected for presence of foliar diseases. Foliar disease samples were taken and submitted to the UVM Plant Diagnostic Clinic (Burlington, VT) for identification confirmation. Harvested silage was captured in a wagon and weighed with a set of portable truck scales. Harvest occurred later than optimum due to an equipment breakdown. An approximate 1 lb subsample was taken from each plot and dried to calculate dry matter content. The dried subsamples were then ground on a Wiley sample mill to a 2mm particle size and sent to Dairy One (Ithaca, NY) for quality analysis using NIR procedures.

Table 3. Non-GMO corn variety trial details, Franklin, 2021

240 hours. 30 hr NDFD is typically used when evaluating forage for ruminants as it is most similar to the actual passage time through the rumen.

Table 4. Weather data for West Berkshire, VT, 2017.

West Berkshire, VT

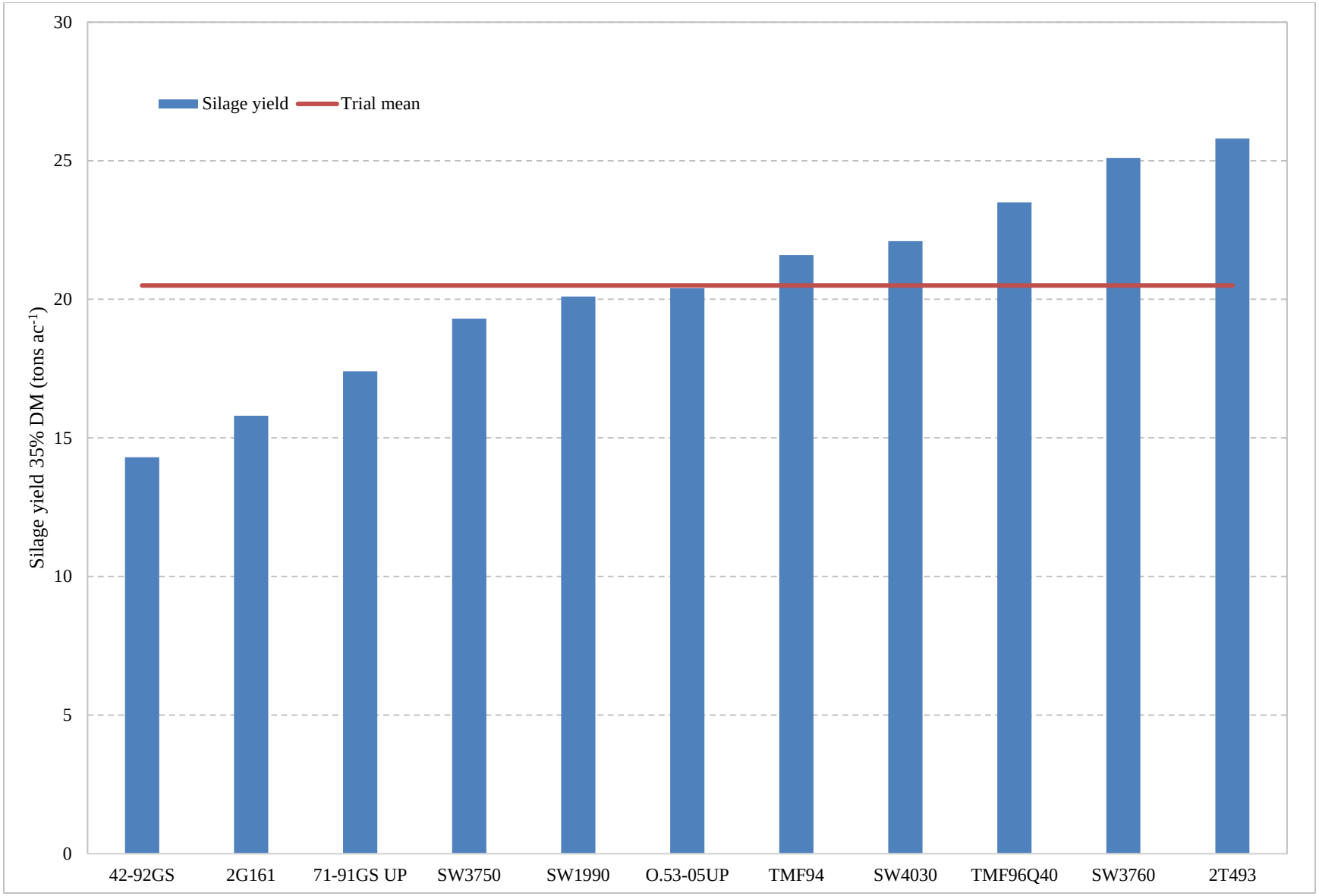

Figure 1. Yields of 11 non-GMO corn silage varieties, 2017.

Varieties did not perform statistically different from one another.

Corn silage quality characteristics varied statistically across varieties (Table 6). Crude protein averaged

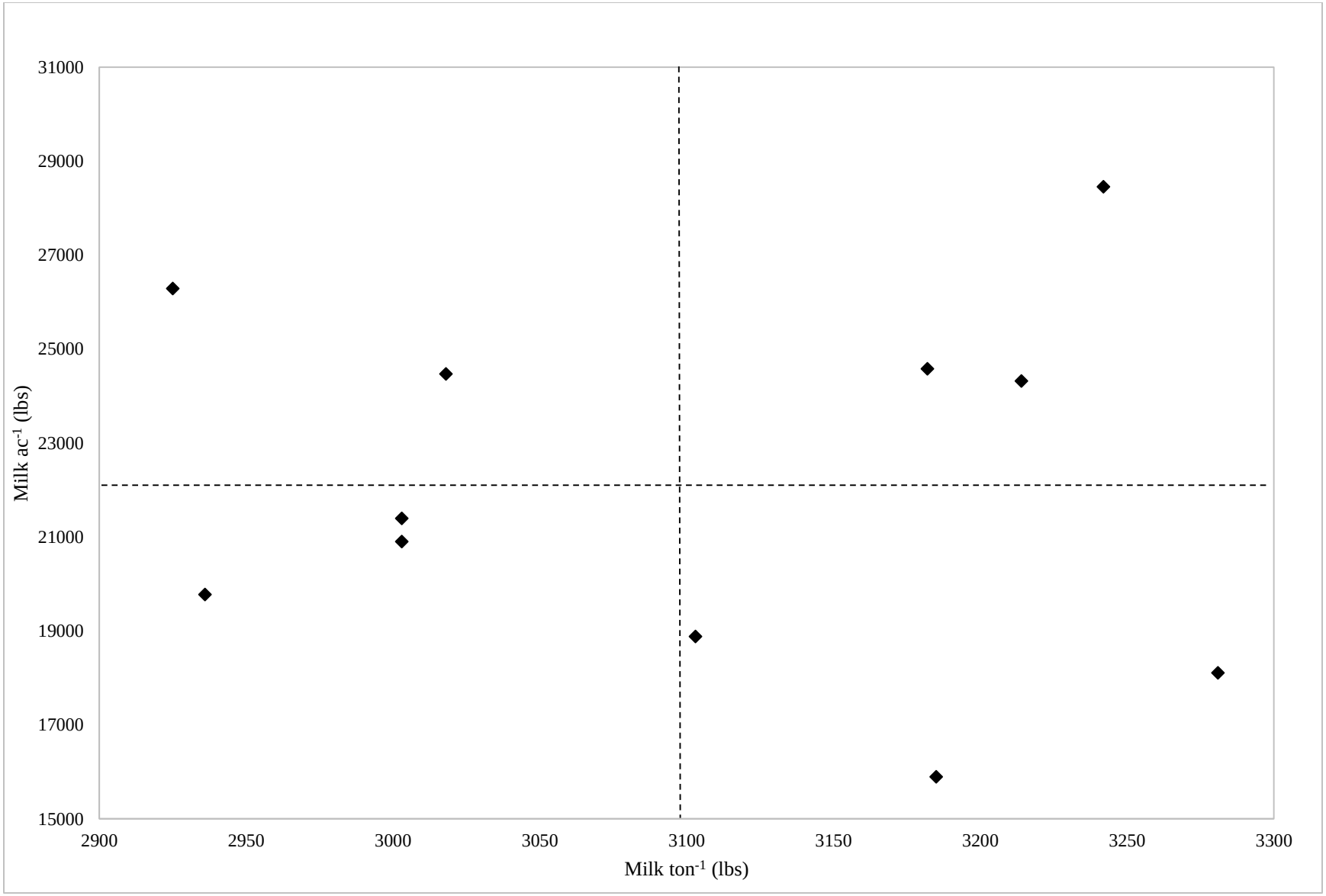

Figure 2. Milk production of 11 non-GMO corn varieties, Franklin, VT, 2017. *Shows relationship between milk per ton and milk per acre. Dotted lines represent the mean milk per ton and milk per acre for the trial.*

DISCUSSION

Corn silage yield and quality varied across the 11 non-GMO corn varieties evaluated in this trial. Performing this trial on-farm presented limitations for the number of replications possible, which consequently limits the ability for robust statistical analyses. However, these data demonstrate the variability that can be observed across varieties and thus, the importance of careful varietal selection based on information generated from our region. It is also important to remember that these data only reflect one site and season and therefore, more information should be considered before management decisions are made.

ACKNOWLEDGEMENTS

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