



FARM ENVIRONMENTAL STEWARDSHIP SAMPLING PROTOCOL TALKING POINTS

- The NMPF FARM Environmental Stewardship Sampling Protocol is a sample selection protocol to assist dairy industry personnel in selecting a statistically valid set of “representative” farms for Farm Smart evaluations
- The protocol is based on the concept of “Stratified Random Sampling”
- Stratified random sampling is a method of sampling based on dividing the population of interest into groups (“strata”) based on common factors likely to influence the outcome to be measured
- The goal of stratified random sampling is to generate a sample that has the same proportions of the grouping factors as the population of interest (a “representative” sample)
- Stratified random sampling makes sure that members of all the strata are selected for the analysis
- The three advantages of stratified random sampling is that: 1) it ensures all strata are represented in the sample, 2) the precision of the overall estimates are more likely to be greater than a simple random sample as the differences between strata are explicitly removed from the estimates , and 3) it produces stratum-specific estimates of the outcome of interest
- The stratifying factors used in this protocol are: 1) quartile of Fat & Protein Corrected Milk (FPCM) produced on a dairy in a day, and 2) geographic region defined as the first 3 digits of the dairy zip code (“Zip-3”)
- Stratifying factors were chosen based on factors found to impact greenhouse gas (GHG) emissions and availability of data to dairy cooperatives and milk marketing organizations
- In order to streamline the selection process for dairy cooperatives and milk marketing organizations, a Microsoft Excel spreadsheet has been created that performs the necessary calculations to select farms according to the protocol
- Due to differences in organization size and rounding errors, this protocol will not always select exactly the expected percentage of farms to evaluate
- The protocol has been designed to err on selecting more dairies than needed rather than to select too few
- If 4,300 dairies (10% of U.S. dairy farms) are surveyed in each sampling cycle, this will allow the U.S. dairy industry to declare a change of 1.4% or more in national average greenhouse gas emissions is statistically significant