

South Dakota Center for On Farm Research (in cooperation with the South Dakota Soybean Association) and the Alliance of Site Specific Providers

Protocol for corn plant population Study

Objective:

The purpose of this project is to quantify the agronomic and economic impacts of on the go changes to corn planting populations. This information is needed to address increasing costs of seed, the variable response of different seed populations across the landscape and the significant change in genetic yield potential of newly developed corn varieties.

Brief summary:

A grower with a variable rate planter and yield monitor - GPS equipped combine will plant ½ mile strips (of width greater than their combine header) at either (13, 18, 23, 28) or (18, 23, 28, 33) or (23, 28, 33, 38) thousand seeds/acre. (If you believe that your optimum is 25-26 thousand, you would use (18, 23, 28, and 33). Harvesting must ensure at least one “pure” combine pass (not mixing yields from two strips) within each strip. Loads should be used in the yield monitor to identify each pure rate pass. Strips should be planted perpendicular to the field variability.

Grower Requirements:

- 1) Apply at least 2 complete sets alternating strips of 4 rates, the length of the field. Document cultural practices such as planting date, hybrid, condition of seed bed, etc.
- 2) Except for the planting population, uniform applications of inputs should be accomplished.
- 3) Accurately record the (A-B) beginning and ending end points of each strip. If Rows are not straight (not planted on an A-B line with an auto steer, an agronomy profession will walk the strip centers with a recording GPS receiver.
- 4) Trial must be harvested with a calibrated yield monitor equipped with GPS. If possible, harvest the entire trial area on the same day. Combine direction of travel should be the same for all strips within a set. GPS yield data must be submitted within 30 days of harvest or no later than December 1, 2009 as raw yield from the memory card.
- 5) Allow South Dakota Center for On Farm Research to use submitted and collected data for research, educational, and informational purposes.
- 6) If it is possible, provide the South Dakota Center for On Farm Research yield monitor data from the field being studied for up to the previous 5 years. (as site specific locations on the strips are selected for comparison, analysis will be accomplished to ensure that there are minimal differences between site blocks)
- 7) Document as much auxiliary information as is possible (precipitation, weed, insect, disease problems, soil test analysis, etc....)

South Dakota Center for On Farm Research and the Alliance of Site Specific Providers Agrees to:

- 1) Return a report analyzing the treatment differences.
- 2) Keep data in a confidential manner that can't be linked back to the individual producer by other parties. Only resultant recommendations will be made public.
- 3) Take stand counts in each strip.

