

## Iowa Soybean Association On-Farm Network® Corn Population Replicated Strip Trial Protocol

### Objective:

The purpose of this project is to quantify the agronomic and economic impacts of two different corn populations in alternating strips across the field. This will provide information about the spatial patterns occurring within fields to define potential future management zones for site specific corn populations or fine tune whole field corn population rates.

### Brief Summary:

Growers with yield monitors equipped with GPS will compare two corn populations in alternating strips across the entire field. Each rate is determined by the grower, must be uniformly applied, and is suggested to differ by approximately 5,000 seeds per acre. A field with straight rows is preferred having variability of soil type, topography, etc. An example is shown on the right using corn populations of 32,000 and 37,000 seeds per acre. The width of a strip must be at least as wide as the combine pass and preferably wider.

The alternating strips of corn populations can be planted in a variety of ways including: physically changing the population on the planter after each pass either manually or with a planter controller if equipped, split planter configuration if the planter is equipped with the capability to apply each half with a different population, or using high accuracy GPS to plant every other pass with one population and then filling in the skipped passes with the second population. Harvesting must ensure at least one “pure” combine pass from each treatment (not mixing yields from two different treatments). Mixed passes are acceptable when the planting width is wider than individual combine passes, but the grower must be able to harvest at least one pure pass from each treatment. Loads or regions should be used in the yield monitor to identify each corn population separately and any mixed passes.

37,000 seeds/A
32,000 seeds/A
37,000 seeds/A
32,000 seeds/A
37,000 seeds/A
32,000 seeds/A
37,000 seeds/A
32,000 seeds/A

### Grower Requirements:

1. Complete and submit a replicated strip trial registration form by June 10, 2011 along with a field boundary in shapefile format (.shp, .dbf, .shx, & .prj) or FSA map with the field clearly outlined.
2. Plant alternating strips the length of the field of two corn populations replicated across the entire field. The length of the replicated strips should be a minimum of 1,320 feet. Areas containing waterways and or point rows should be avoided. All other factors in the trial area must be managed the same (planting date, hybrid, etc).
3. Accurately record where all treatments were applied using GPS mapping equipment and submit as-applied data within 30 days in the following format: raw files from the memory card or exported shape file (.shp, .dbf, .shx & .prj).
4. Trial must be harvested with a calibrated yield monitor equipped with GPS. If possible, harvest the entire trial area on the same day. Raw GPS yield data from the memory card must be submitted within 30 days of harvest or no later than December 1, 2011.
5. Allow ISA to use submitted and collected data for research, educational, and informational purposes.

### ISA Agrees to:

1. Attempt to collect aerial images from each field and provide them to the grower at no cost.
2. Return a report analyzing the treatment differences.
3. Keep data in a confidential manner that can't be linked back to the individual producer by other parties.

