

The background features a light blue gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance.

**Procedure to establish a tolerance factor to calculate max
allowed tolerance for comparing two seed count test results
using electronic seed counter**

Background

- **Many laboratories conduct hundreds of seed count tests every year.**
- **About half of the laboratories use electronic (mechanical) counters while the rest use the manual method.**
- **Establishment of *truth-in-labeling* for seed count information requires the use of tolerances (*Liu et al. 2011*).**
- **Currently, only tolerances for mechanical methods are included in the AOSA, 2023 for corn, soybean, field bean and wheat (sec. 14.9; Table 14Q). Tolerances for new crops may be needed.**
- **To calculate the max tolerance allowed between 2 seed count tests, multiply the 1st count test result (or label) by the appropriate factor in Table 14Q.**
- **If the difference between the two test values \leq the tolerance, then the two test results are within tolerance (*see the exemple in sec 14.9 of the Rules*).**

Main objective

Establish a tolerance factor to calculate max allowed tolerance for comparing two seed count test results for a new crop using electronic seed counter.

Specific objectives:

- 1) Determine the sample size (g) and number of replications.**
- 2) Measure seed count variation within and among labs.**
- 3) Compare electronic versus manual seed count methods.**

Referee is needed to calculate variance among labs.

Labs that participate must meet the following:

- 1. Have an analytical balance with 3-4 digits weighing capacity, depending on the crop.**
- 2. Have a mechanical seed counter calibrated according to manufacture manual.**
- 3. Routinely conduct seed counts on the crop of interest.**

Mechanical and manual count methods:

- 1. Seed of the crop should be pure. Discard any inert material.**
- 2. Manual seed count and weight are conducted according to section 13 of the Rules.**
- 3. Replicates must be blended back before starting the next set of seed counts.**

Samples to be provided:

At least 6 seed lots (more are recommended), representing different seed sizes, varieties, production years, environments, etc.

Participating Labs:

At least 6-8 labs (more are recommended).

Source paper:

H. Liu, L.O. Copeland, and S. Elias. 2011. Variability in Soybean Seed Counts Determined by Electronic and Manual Methods. Seed Technol. 33(2): 122-133.