



# eurofins

## STA Laboratories

### Seed Quality Services

#### Seed Vigor Imaging System (SVIS)



Many members of the agricultural community know Eurofins STA Laboratories (ESTA) for our germination and physical purity testing on lettuce seed. When you need answers about the vigor of lettuce seed lots, ESTA has a service to help. The Seedling Vigor Imaging System ranks lots based on speed and uniformity of emergence. It provides a valuable tool when making decisions about inventory, and it is especially suited to ranking lots within a variety.

Analysis of lettuce lots using SVIS should be performed in November, December or January for plantings in the spring/summer or in May/June for fall or winter desert plantings. ESTA recommends a standard germination test with an assessment of necrosis in conjunction with the SVIS test. This combination will give you a good evaluation of the quality and vigor of your lettuce lots. SVIS can also be performed on pelleted lots, giving a good evaluation of those primed/pelleted lots that were not used the previous planting season and had to be carried over.

The SVIS was developed by Dr. Miller McDonald and colleagues at Ohio State University. Seeds are planted between moistened blotters in germination boxes and the boxes are set at a slant allowing the hypocotyl to grow upwards and the radicle to grow downwards. The seedlings are grown at 20C, in the dark, to eliminate elongation toward a light source. They are removed at 72 hours which is enough time for emergence of most lots but still early enough to capture variations in speed of growth and uniformity. The upper blotter is carefully removed, and a digital image of the lettuce seedlings is captured using a modified Xerox-type scanner.

The images are processed by specialized software that measures the length of the each seedling and compares the uniformity of length of all the seedlings to generate numerical values that represent the quality of the seed lot. These values are based on the sample mean of the various statistics acquired from the morphological features during the scan. The numerical values are calculated into an index that is divided between the growth and uniformity parameters in a specific ratio providing a value of 0 – 1000. This automated system objectively detects speed and uniformity of seedling growth to identify vigor of the lot as a comparison to other lots.

The SVIS test for lettuce has its greatest potential when used to compare various lots within a variety. By assigning a relative vigor value to each lot, the inventory of a lettuce variety with multiple lots can be more accurately evaluated to maximize the slotting of those lots into the most appropriate planting windows. This is a valuable tool for efficient inventory control.

To obtain more information on this assay or to schedule the testing of your lettuce inventory, please contact Linda Barbosa, Seed Analysis Manager, at 888-782-5220 or at [LindaBarbosa@EurofinsUS.com](mailto:LindaBarbosa@EurofinsUS.com). Linda and the rest of the Seed Analysis staff are located at our Gilroy, California facility.