

SEMIS SHORT COURSE SEED QUALITY ASSURANCE

THE PURITY TEST

Objectives of the purity test

The object of the purity analysis is to determine the percentage composition by weight of the sample being tested and by inference the composition of the seed lot and to identify the various species of seeds and inert particles constituting the sample.

- To determine the physical composition and quality of a seed lot. The first step is to verify the identification of the species in question.
- Identify the other crop seed, weed seed, and noxious weed seeds.
- To examine the inert material such as soil, insect parts, plant material, and ergot.
- To identify and quantify of any noxious weeds present helps to prevent the spread of noxious weeds.
- To check for and prevent adulteration of seed lots through tolerance testing

Requirements:

- Seeds with contaminating matter (other crop seeds, inert particles, weed seeds, broken seeds)
- Lighted purity board or use white paper for separation (manila paper)
- Hand lenses
- Weighing balances (up to 3 decimal places)
- Knives (scalpel blades) and forceps

Working sample: The submitted sample is mixed and randomly divided into required weight specified in seed rules - 2500 seeds for purity examination.

Component parts: The working sample is divided by hand on a purity board under good light (use white manila paper in absence of lighted purity board), using magnifier light for work with small seeds, tweezers, a seed pushing wedge, and a lot of hand eye coordination.

The component parts are:

1. Pure Seed: Includes all seeds of each kind and/or cultivator under consideration which are present in excess of 5% of the whole.

2. Other Crop Seed: Seed of plants grown as crops (other than the kind or cultivator included in pure) shall be considered other crop seeds, unless recognized as weed seeds by laws, regulations, or by general usage.

3. Weed Seed: Seeds, florets, bulblets, tubers, or sporocarps of plants recognized as weeds by laws, regulation or by general usage shall be considered weed seeds. Further classification of species is determined with the use of the reference, "Uniform Classification of Weed and Crop Seed" which is published by the Association of Official Seed Analysts.

3. Inert Matter: Soil particles, stones, chaff, stems, leaves, flowers, cone scales, pieces of bark, pieces or resin, etc. Pieces of broken and damaged seed units of crops which are half the original size or less. Damaged weed seed with over half the embryo missing.

Each of the four component parts is weighed and a percentage is calculated from the sum of the four component parts.

Purity test reports

The purity test report states the percentage of pure seeds found in the examined prescribed weight. The report will also state what inert matter was found & may include the following:

- Broken seed, soil, scraps
- Other seed: All seed other than the stated species
- Ergot: Ergot is a fungus of the genus *Claviceps*
- Pests: Any live pests insects etc.