Outline of Material for Discussion

at

Seed Germination Symposium

C. E. CORMANY[1]

GERMINATION PROBLEMS:

1.—Erratic readings on duplicate samples caused by:
   a.—Poor blending of original sample. Use Boerner Sampler.
   b.—Drying out of certain parts of germinator—corrected by adding adequate water supply within oven itself.
   c.—Chemical fumes for a long time an unknown cause of poor germination. When finally located, corrected by moving location of germinator to another room.

2.—Handling large number of samples with limited help.
   a.—Take detail count only when necessary. Formerly took detail on whole-seed samples and all processed seed. At present, details only on composite samples of various lots.
   b.—Day distribution to avoid reading on Sundays. Place samples in germinator on Monday, Tuesday, Wednesday, Friday and Saturday. Counts of 3-7-10 days and 2 weeks do not fall on Sunday.

3.—Adjusting germinator procedure so results will compare closely with check run in greenhouse-soil planting. This was matter of personal adjustment of operator as regards closeness of calling malformed sprouts, etc. Also found a continuous 25° centigrade temperature helped in this respect.

GERMINATION PROCEDURE:

1.—Assign sample laboratory number for proper identification.
2.—Secure sample of approximately 500-seed units by use of Boerner sampler.
3.—Place these 500-seed units in test tube, and soak in running water for 2 hours.
4.—Drain to remove free moisture.
5.—Soak for 5 minutes in solution of 2 grains potassium permanganate per 4 ounces of water. Retards mold growth.
6.—Drain for about 2 minutes.
7.—Mark dry paper towel with sample number and then moisten.
8.—Place pattern for 100 seeds on paper towels and fill with seeds.
9.—Remove pattern, place top layer of towel on seed and place in germinator.
10.—Place duplicate, triplicate, etc., in different locations in germinator.

[1]Chief Agronomist, Holly Sugar Corp., Sheridan, Wyoming.

MISCELLANEOUS NOTES:

Temperature of germinator now 25° C. continuous. Originally was 20° at night and 30° in daytime.

Pattern for seed on towel made of 1/8-inch rubber gasket material—seed holes 5/16 inch in diameter, and holes arranged 8x12 plus 4 holes on top.

Paper towels numbered while dry, wet before seed placed on them.

Counts made 3rd, 7th and 10th days.

Sprouts pulled out with tweezers to make sure every sprouted germ is removed from its locule.

Injured or malformed sprouts not counted. They are left in upper or non-germinating area of towel until next time (through 10 days) to see if they qualify as normals.

ON 3RD DAY:

In segregating germinating seed the 3rd day, the seed is placed as follows:

a.—Top section: Non-germinating (these always move toward top)

b.—Next section: Singles

c.—Next section: Doubles

d. Bottom section: Multiples.

ON 7TH DAY:

a.—Multiples remain in their section at bottom.

b.—If any more sprouted in the "doubles" section they are moved down to "multiple" section.

c.—If any more sprouted in "singles" section they are moved down to "doubles" section.

d.—Any germinating in the "non-germinating" section are moved to their respective section, such as singles, doubles or multiples.

ON 10TH DAY:

The procedure is same as on 7th day.

PAPER DOLL:

Made of paper towels. Counts never are detailed. Every sprouted seed unit is thrown out at each reading.