

XI. VISUAL AIDS FOR DEVELOPING JUDGEMENT

The results obtained and reported from seed testing laboratories need to be accurate and consistently reliable. This is important not only to the cultivator who buys the seed but also to the seed dealer, seed grower, seed producer and others involved in the production and distribution of seed. Every effort needs to be made to assure that the results within any one particular laboratory are as consistent and reliable as possible. In addition, with seed moving from one area to another and with the statutory implications involved, it is also essential that the results between laboratories be as comparable as possible.

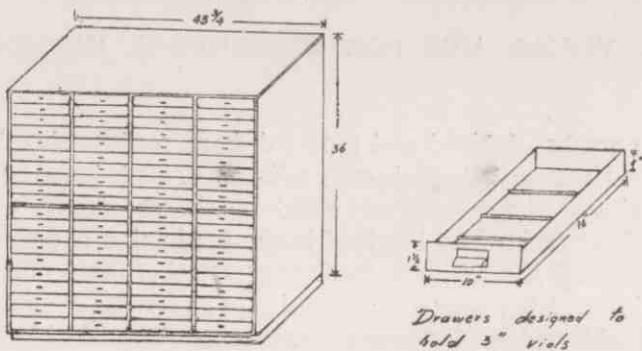
The equipment used in a seed testing laboratory plays a part in achieving consistent reliability. However, beyond the mere physical aspects of the seed testing work are the human factors such as careful observation, right interpretation of data and correct judgement which are more important. The capacity to arrive at correct judgement can only develop from experience over a long period of work. Hence, it is necessary that the personnel remain in the laboratory for a sufficiently long period for gaining the necessary experience in their work and judgement.

One method of helping staff members to develop their judgement is to give them reference points such as photographs and seed samples so that they may continue to check and recheck themselves with various kinds of visual aids. The visual aids commonly used in seed testing laboratories are seed samples of both weed and crop seeds, photographs of germinated seedlings, preserved seedlings and drawings of seeds or seedlings.

Seed Collections

All seed testing laboratories should have an extensive, well organized and labelled weed seed collection which all members of the staff may use in the identification of weed seeds found in seed samples. The most common method of keeping such samples is to place the seeds in small glass vials which can be stored in a cabinet with numerous shallow drawers (Fig. 106 and 107). Such samples may also be kept in rings on special glass mounts. They offer the advantage of easy viewing under a binocular without running the risk of losing the seed sample. Some laboratories keep their samples in small plastic envelopes.

A complete collection of the seeds of the different varieties of crops grown in the state also needs to be kept in the laboratory. It should include not only the major crops grown in the area but also samples of the individual varieties in common use. Although the major emphasis in a seed testing laboratory is physical purity, under a seed certification program additional checks are sometimes possible and very essential in assuring

Weed and Crop Seed Collection CabinetFIG. 106—*Weed and crop seed collection cabinet.*FIG. 107—*Drawer with vials holding weed seed collection neatly.*

that the genetic purity side is also being maintained at a high level. Display boards are also available for holding seed samples. (Figure 108).



FIG 108—See Appendix XVI for source of display boards as illustrated.

In addition to keeping specimens of the major weed and crop seeds, photographs, drawings and morphological description charts of varieties are often very helpful. Enlargements can help to bring out features of the surface of the seeds that might not be noticed by examining the seed specimen.

Seedling Photographs

The proper evaluation of germinated seedlings is essential. Although written descriptions of normal and abnormal seedlings are very helpful, these need to be supplemented with photographs, drawings or actual preserved seedlings. All seed testing laboratories have a set of enlarged photographs covering normal and abnormal seedlings of the major crops in India. These need to be used extensively as new technicians develop their judgement in classifying seedlings properly. Since all of the laboratories have the same set of photographs, considerable consistency can be achieved if all of the technicians use them properly. Reference should also be made to the material, at the end of Chapter VIII. Some laboratories actually preserve seedlings that have been classified in glass vials so that workers may refer to them from time to time in case of questions.

Illustrations of stained seeds

Tetrazolium quick tests are being used in some laboratories to give an early appraisal of a seed lot's potential viability. Drawings of the stained seeds can be very useful to achieve consistency in making these appraisals. A bulletin on tetrazolium testing prepared by Mississippi State University is in the library of all the laboratories and carries drawings of seeds for

several different kinds of crops with an appraisal as to whether these should be classified as normal, abnormal or dead. Such drawings can be very useful and are essential for the development of satisfactory judgement in these tests. Many of those drawings showing staining patterns are provided in Chapter IX.

35 MM Slides

Although more expensive, coloured 35 mm slides can be very helpful in conducting special training sessions and meetings with the seed testing staff or with extension workers. Slides can help them visualize the technique used in the seed testing laboratory and the skill needed of a competent seed analyst. Coloured photographs of the most common weeds in an area can supplement the weed seed collection or the herbarium that is kept in the seed testing laboratory and can be very useful in the training of inspectors and extension workers.

All of the seed testing laboratories have reference books and bulletins that have been prepared in various parts of the world. Many of these carry photographs, drawings and other types of illustrations which can be helpful to the technicians working in the laboratory. These references should be readily available to any of the workers so that they will be of maximum value to the laboratory.