

# Special Quality Papers Needed for Seed Testing Work in India

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With the passing of Indian Seeds Act in 1966 and its enforcement all over the country from 1st October, 1969, it has become compulsory to attach truthful labels providing detailed seed quality characteristics along with every lot of seed that is entered for trade. Thus, seed testing has assumed new importance for the maintenance and regulation of seed quality in the country. The total number of seed samples tested in the country increased from 6,000 in 1962 to 65,000 in 1967 (Singh, Douglas, and Kahre, 1968) and this number will increase manifold in future when the regular seed inspection is initiated. Testing of seeds for various attributes, such as, identification of kind or variety; assessment of germination potential; extent of purity, presence of other crop seed, weed seed and inert matter; moisture content etc., are usually done in the recognised seed testing laboratories of different states in the country by following the established international rules for seed testing procedures (ISTA Rules, 1964).

For the determination of germinability of a particular crop, seeds are placed for germination on a suitable substratum and then kept at optimum temperature and moisture for a predetermined number of days for emergence. The substrata used for such seed analysis are either sand or various kinds of absorbent papers, the detailed specifications of which are given in Table 1. Some of the important general specifications\* are as follows:

(i) **Formation** :— The paper shall have an open, porous formation and shall be free from defects and impurities that may affect its performance in service.

\* Quoted from Proc. Int. Seed Test Ass. 31(1) 88-89.

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(ii) **Cleanliness** : All paper substrate shall be free of fungi or bacteria which might interfere with the growth or evaluation of germination seedlings. Sterilization of paper substrate may be necessary in laboratories located in tropical climates.

(iii) **Treatment** : The paper shall not be treated by the manufacturer for the elimination of mould as this process might deposit chemicals in the paper which would suppress or kill disease organisms on the seeds.

(iv) **Pernicious materials** : The paper shall not contain toxic substances in such quantity as to cause injury to the roots of germinating seedling in the biological test for pernicious materials.

(v) **Composition** : The fibre content shall be 100% bleached chemical wood, cotton or other purified vegetable cellulose.

(vi) **Colour** : The paper shall be white or coloured with a dye non-toxic to germinating seedlings.

(vii) **Texture** : The texture of the paper shall be such that the roots of germinating seedlings will grow on and not into the paper. A creped sur-

face is preferred for filter paper and towels.

So far, we did not have the correct type of paper for critical seed analytical purposes in the country and only recently pioneering work to manufacture at least one kind of paper was initiated at F.R.I. (Sharma, 1970). It has been estimated that the total need of germination papers in the various seed testing laboratories of the country would be about 12-14 tons per annum and this will increase as the number of seed samples received for analysis increase in future.

Since the motto of seed testing is "Uniformity of analysis and repeatable results", it is imperative, that, the raw materials used for testing purposes conform to the specific requirements scrupulously. With regard to the available paper in the country, blotter and filter paper manufactured by F.R.I. are fairly satisfactory but large scale manufacture with low production cost are necessary. The crepped kraft paper (towel paper) manufactured by the Oriental Paper Mills, which is widely used at present for seed testing work,

Table 1 : Detailed Specification of germination papers\*

Type of paper	Weight	Basis Wt. (g/m <sup>2</sup> )	Bursting strength (min.Kg/m <sup>2</sup> )	Capillary rise (min.)	Acidity (pH)	Ash wt. max.)
Blotter	Light	270	1.8	3.0	6.0-7.5	1.0%
	Medium	405	2.2	3.0	6.0-7.5	1.0%
	Heavy	730	3.2	3.0	6.0-7.5	1.0%
Filter	Light	85	0.9	3.0	6.0-7.5	1.0%
	Medium	132.5	1.0	3.0	6.0-7.5	1.0%
	Heavy	170	1.2	3.0	6.0-7.5	1.0%
Towel <sup>1</sup>	Light	64.7	2.67	5.2	6.4	0.48%
	Medium	128.5	4.78	5.8	6.7	0.51%

\* Quoted from Proc. Int. Seed Test. Ass. 31(1) : 89-90.

1. These towels are used in U.S.A. and are found to be satisfactory.  
N.B. All the specifications are to be tested in accordance with the most recent edition of the indicated standards of the T.A.P.P.I.

needs improvement with regard to the varying pH and other quality characteristics.

Hence, the situation demands the manufacture of the specific kinds of paper for seed testing work in requisite quantity, keeping in view the maintenance of specific quality and lowering of cost to a minimum. We earnestly hope, that, the paper manufacturers would take up this challenge and make our country not only self-sufficient with regard to a specific kind of paper but also emerge as an exporting

country to the neighbouring areas where seed testing foundations are being laid.

#### ACKNOWLEDGEMENT

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#### REFERENCES

1. I.S.T.A. Rules (1966) : Proc. Int. Seed Test. Ass., **31**(1):1-152.
2. Sharma, Y. K. (1970). Pilot plant production of medium filter for seed testing. *Indian Forester*, **96** (3) : 609-611.
3. Singh, A., Douglas, J. E. and Kahra, L. (1968) : Good quality seed Use accelerated in India : Proc. 15th Int. Seed Test. Congr. New Zealand, Preprint No. 33, pp 1-11.

SECRETARIAL LOCATIONS (10, 11, 10, 11).

Page 5, Table 1, footnotes : see table for proper footnoting.

<sup>2</sup>Means with the same letter or letters in common are not significantly

<sup>4</sup>Red spot occurs on stem at leaf axils.

#### CORRECTIONS OF ERRORS

Corrections for the article "Kenaf and Other Nonwood Species for Papermaking" by T. F. Clark and M. O. Bagby, as published in the Supplement to the Conference Number of *Ippta*, volume VII, November 1970.

Page 18, column 3, line 14 :  $\alpha$ - should precede cellulose to read  $\alpha$ -cellulose.

Page 21, figure 1 : The figure shown is incorrect. The correct figure has the caption "Strength indices for selected pulps ...; (7) *Sorghum alnum*." A

glossy print of this figure with its caption is attached.

Page 22, Table V : In the title, spelling of Species. Line 7, column 3 of tabulation, 2,001 should replace 1,001. Footnote b, change 17.7% active alkali to 11.7% active alkali.

Page 23, Table VI : In the last three lines, the percent signs should be replaced by symbols for microns,  $\mu$ , or the word should be spelled out.

Page 23, column 1, line 16 : The ex-

pression "amounts of best woody" should be changed to "amounts of bast or woody."

Page 24, column 3, line 19 up : The expression should be changed to read : "As unfractionated stalks, pulping conditions, of necessity must be a compromise whereby ..."

Page 26, reference 43 : Page number should be 396, not 326.

Page 26, reference 44 : Abroz should be changed to Abrol.