

that obtained from the seeds by the preparation of derivatives and shown to be identical.

The stem-bark which has been carefully freed from any root-bark, on the other hand, yields no significant amount of gossypol. No crystalline matter could be obtained under the conditions employed for the preparation of anil.

Gossypol seems to be specially peculiar to the cotton plant (*Gossypium* group) since the seeds and root-barks of other related plants resembling cotton do not contain gossypol.

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1. Carruth, *J.A.C.S.*, 1918, **40**, 647. 2. Harrison and Hahn, *Chem. Abs.*, 1941, 2278. 3. Murty, Murty and Seshadri, *Proc. Ind. Acad. Sci.*, 1942, **A**, 54.

ON THE VIABILITY OF PADDY SEEDS *ORYZA SATIVA*

STUDIES on the longevity of seeds have engaged the attention of the various research workers. Takagi⁷ in mulberry seeds, Kincaid⁴ in tobacco seeds, Griffiths³ in lettuce seeds, Akamine¹ in number of garden and crop plant seeds including rice stored for six years, Kondo⁵ in hulled rice stored for four years and Christidis² in cotton seeds, have found that by reducing the moisture of the seeds and storing the same under air-tight conditions, viability of the materials is maintained for a longer period. Rodrigo⁶ stored air-dried farm crop seeds including rice in air-tight containers. The study was extended for 95.8 months during which period seeds from all the paddy varieties that were stored lost their complete viability in 84.5 months.

Paddy seeds stored under ordinary conditions at Sabour were found to lose complete viability in about nine months. To ascertain the period for which paddy seeds could be made to remain viable, seeds from one pure strain, 36 B.K., were stored after one month from the date of harvest, in various kinds of containers mentioned below. After a lapse of 27 months from the date of storage, samples from the various containers were taken up to determine the viability of the seeds and the results obtained are given below.

The percentage of germination was nil when the method of storage was (1) air-tight tin containers, (2) earthen pots with mouth closed with mud, (3) earthen pots with mud plastered all round, (4) earthen pots with coal-tar plastered all round, (5) glass-stoppered bottles, (6) glass-stoppered bottles with tin-mercury amalgam, (7) desiccator without any desiccating agent (not vacuum), (8) desiccator without any desiccating agent (in vacuum); a hundred per cent. germination was, however, obtained when the method of storage was (9) desiccator with calcium chloride, (10) desiccator with calcium chloride (in vacuum), and (11) desiccator with sulphuric acid.

Moisture percentage of the seeds from containers^{9,10,11} was found to be 3.6 per cent. as against the 10-12 per cent. of moisture characterising the other seeds. The reduction in moisture content may be responsible for maintaining the full viability of the seeds.

Seed moisture from one pure strain, 36 B.K., of paddy was, therefore, reduced by drying them in the hot sun in the month of May to 4.5 per cent. and 3.6 per cent. and such dried samples were stored in sealed tin containers without any dehydrating agent in several sets. After the expiry of each year, of storage, samples from these containers were taken out to determine their germination percentage. After seven years of storage samples are still continue to show about 80 per cent. of germination. The maximum period, for which they maintain their viability, is still under observation.

A research worker who is testing a large number of varieties and strains under limited means, may thus store a part of his materials with complete safety for some years against loss of viability for examination later on. Moreover seeds of selected varieties and strains, which have been given out for propaganda and demonstration, may be preserved and the labour of maintaining them every year may thus be easily saved.

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1. Akamine, Ernest K., "The effect of temperature and humidity on viability of stored seeds in Hawaii." *Bull. Hawaii. Agric. Exp. Sta.*, 1943, **90**, 1-23. 2. Christidis, B. G., "The viability of cotton seeds as affected by its moisture contents", *Empire Jour. Exp. Agric.* 1940, **8**, **30**, 148-158. 3. Griffiths, A. E., "The viability of lettuce seeds," *Mem. New York, Cornell Univ. Agric., Exp. Sta.*, 1942, **245**, 1-39. 4. Kincaid, Randall R., "Effect of storage conditions on the viability of tobacco seed" *Jour. Agric. Res.*, 1943, **67**, **10**, 07-10. 5. Kondo, Mantaro and Tamotsu Okamura, "Germination power, analysis and Vitamin B of hulled rice stored during 4 years, either air-tight or in carbon dioxide," *Ber. Ohaza Inst. Landw. Forsch.* 1930, **4**, **3**, 343-98. 6. Rodrigo, Pedro A., "Longevity of some crop seeds" *Philippine Jour. Agric.*, 1935, **6**, **3**, 343-57. 7. Takagi, Ichizo, "On the storage of mulberry seeds," *Res. Bull. Tokyo Imp. Ser. Coll.* 1939, **2**, 1-22.

SEED TRANSMISSION OF MELON MOSAIC VIRUS

In connection with the analytical work on viruses nursery of cucurbitaceous plants, e.g., cucumber (*Cucumis sativus* L.), 'tori' (*Luffa aegyptiaca* Mill.), red gourd (*Cucurbita maxima* Duschene), bottle gourd (*Lagenaria vulgaris* Ser.), bitter gourd (*Momordica cha-*