

## Studies On Seed Coloring In Soybean And Tomato

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### ABSTRACT

The investigations on the effect of seed colouring on soybean and tomato seeds encompassing 25 dyes were conducted to identify non-deleterious and deleterious dyes based on their effect on seed quality. The dyes namely Rhodamine-B, Fast green and Malachite green for soybean and Rhodamine-B and Fast green for tomato are the best dyes for seed colouring at 0.75% concentration. In this paper we discuss developing colour standards for soybean and tomato seeds and their resultant implications for Indian seed industry.

**Key words:** seed colouring, soybean, tomato

### INTRODUCTION

The history of seed colouring in the international arena suggest that colour standards in Canada, United States of America and other European countries were established as per policies regarding colouration of treated seeds and trade memorandums that were issued on July 13, 1967 Anonymous, (1967). In co-operation with CACA Technical Committee, Board of Grain Commissioners and other officials of the Canada department of agriculture, the plant products division has developed a colour standard for cereal seed treatment. This standard was established in order to facilitate treated seed in food or feed grain channels. As of January 1st, 1968 all cereal seed treatment products accepted for registration on renewal under the terms of the pest control products act must confirm to the colour standard. Products appearing on the market as a result of carry over stocks shall not be considered to be in violation of the requirement until January 1st, 1969. In line with this, Canada department of agriculture has given an outline of the laboratory method for the preparation of the standard to which all cereal seed treatment products must be compared when used according to label directions. In addition, in Canada, it is required at the time of submitting application for registration or renewal, a one half pound sample of the cereal seed which has been treated with the candidate product, using the attached procedure at

the dosage specified on the product label, must be submitted to the pesticide unit for examination.

Several different types of dyes have been used successfully for colouring seeds, including acids dyes, basic dyes, direct dyes and pigments. The basic dyes are used most frequently because of their strong, brilliant shades, which can provide distinctive colour inspite of the natural colouration of the seeds, and because of their economy, on an equal colour basis, versus other dye types. The dye is added to the seeds as solution or suspension and blended to give an even beverage. However, the quantity of the dye required at 0.75 per cent concentration (prepared by dissolving 0.25 g of dye in 16.50ml water plus 15.0ml of ethylene glycol) varies with the individual dyes used in seed colouring and kind of seed to which the colour is to be imparted. Several dyes have been approved by department of agriculture in Canada and United States of America, viz., Rhodamine-B, Tartrazine, FD and C blue, Methylene blue, Methyl violet 2B, D and C red, D and C violet, D and C green and pigment red, based on their non-toxic nature in regard to seed germinability Anonymous, (1979).

To be precise, processors colour seeds because it is required by law to avoid accidental use of treated seeds as food or feed. Some people colour seeds with a specific colour as a trademark, just to identify their seeds. But, to use such dyes, which in fact are chemical formulations, it is necessary to prove that they are non-toxic with respect to seed germination, vigour potential and viability; the information about which is not available to the extent it can be used in seed industry.

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