

Seed Colouring in Cotton

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Seed colouring is gaining importance as an optional procedure during seed processing. Colouring helps in establishing an identity for the Seed Company, adds attractiveness and value

thereby enhancing marketability, aids in parental identity and to identify treated seeds. An attempt was made to colour the fuzzy seeds of cotton cv LRA 5166 with inorganic dyes.

Table 1. Effect of seed colouring dyes on germination (%), abnormal seedlings (%), root length (cm) and shoot length (cm), dry matter production (mg/10 seedlings), vigour index and germination (%) after accelerated ageing

Dyes	Germination (%)	Root length (cm)	Shoot length (cm)	Abnormal seedlings (%)	Dry matter production (mg)	Vigour index	Germination after ageing (%)
Ammonium purpureate	73 (58.69)	14.5	14.9	2.3 (8.72)	338	2225	22 (27.97)
Cotton blue	67 (54.94)	15.8	14.9	3.5 (10.78)	351	2069	4 (11.54)
Congored	80 (63.43)	16.4	15.7	1.5 (7.03)	413	2584	44 (41.56)
Crystal violet	64 (53.14)	15.1	15.5	3.5 (10.78)	348	1974	 (16.43)
Erichrome Black-T	73 (58.69)	15.3	14.4	3.5 (20.78)	331	2165	17 (24.34)
Fast green	62 (51.94)	15.0	14.0	7.5 (15.89)	346	1971	5 (12.92)
Indigo carmine	70 (56.79)	16.0	14.9	6.0 (14.18)	397	2129	10 (18.43)
Methyl orange	85 (67.21)	17.2	15.8	2.5 (9.10)	419	2756	45 (41.84)
Malachite green	73 (58.69)	14.7	14.0	6.5 (15.12)	343	2228	4 (11.45)
Methyl red	71 (57.45)	16.0	14.5	2.5 (9.10)	320	2045	25 (30.00)
Neutral red	80 (63.43)	16.3	15.5	1.5 (7.03)	326	2279	33 (35.05)
Nigrosine	55 (47.87)	14.2	13.4	8.5 (17.26)	317	1593	9 (17.46)
Titan yellow	84 (66.42)	16.4	15.6	1.5 (7.03)	409	2608	39 (38.64)
Control	76 (60.67)	15.3	14.8	4.5 (12.25)	338	2265	69 (56.17)
CD (0.05)	4.67	0.42	0.67	1.64	6.66	133.91	10.16

(Figures in parentheses indicate arc sine value)

The dyes used for colouring seeds are furnished in Table 1. All the thirteen dyes used in this experiment were prepared at 0.75 per cent concentration by dissolving 0.25 g of dye in 16.5 ml of water and 15.0 ml ethylene glycol. In order to obtain the desired dye intensity, respective dye solution in specified volume was added on 40g of seeds placed in a beaker, slowly down the inner sides of the beaker. The seeds were stirred with a glass rod for five minutes to give uniform coverage of the dye on the seed. Then, the seeds were air dried and evaluated for germination in sand medium [1], root length, shoot length and dry matter content of 12 day old seedlings, vigour index (germination x seedling length) and germination after accelerated ageing [2].

The results revealed that all the dyes except nigrosine, crystal violet and fast green were safe and non-toxic, since they did not affect germination (Table 1) and other seedling parameters. Some of

the dyes viz., congorod, methyl orange and titan yellow showed positive effect probably because chemicals present in those dyes would have induced some low vigour abnormal seedlings into normals.

Germination after accelerated ageing showed that congorod and methyl orange imposed least adverse effect. However, uncoloured seeds were superior in storability compared to coloured seeds. Less storability of coloured seeds might be due to the interaction effect of moisture absorption [3].

REFERENCES

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