Seed parameters study in *Commiphora wightii* (Arnott) – an important medicinal tree of arid and semi-arid regions of India

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INTRODUCTION

- *Commiphora wightii* (Guggal) is medicinally important endangered plant species.
- The population of this species declining sharply due to extensive tapping, slow growth, poor seed germination and poor regeneration.
- It is dioecious in nature and exists in three forms i.e. Female, male and andromonoecious plant.
- Male and andromonoecious plants are extremely rare in natural population and plantation.
- Apomictic nature [1,2,3], low black seed and extremely low white seeds viability [4] of this plant are main problems in raising nursery.
- Present study aimed to study seed characters in different genotypes to establish the relationship amongst seed germination, seed colour and seed weight for the development of seed production areas.

METHODOLOGY

- Study was done on 1643 seed collected from Ranpur forest nursery, Datiwara, Deesa (Gujarat, India).
- Mature fruits and dry seeds were collected from nine genotypes (C1, C2, C3, P1, P2, P3, P4, P6 and P9) in November-December, 2017 .
- Seeds were depulpated, dried and separated as black, brown and white seed.
- Seed weight of individual seed was calculated and seeds were germinated.

RESULTS

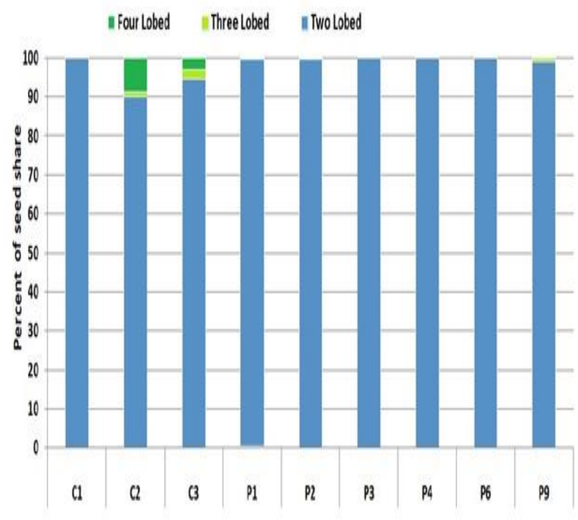

Figure 1. Percent of seeds with different number of lobes in nine genotypes.

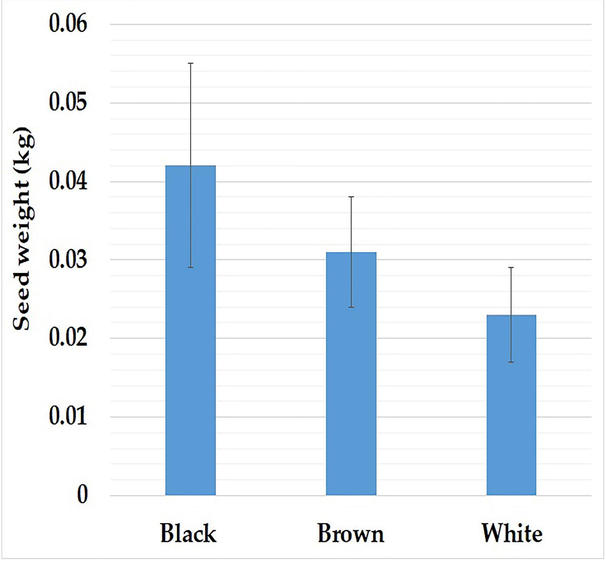

Figure 2. Seed weight of different seed types (black, brown and white)

RESULTS

- Genotype C1, P1, P2, P3, P4 and P6 produced 100% two lobed seeds whereas three lobed seeds were produced by C2 (1.1%), C3 (2.3%) and P9 (1.2%) genotypes. Only genotype C2 and C3 produced 8.9% and 3.2% four lobed seeds (Figure 1).
- The average seed weight of black, brown and white seeds was 0.042, 0.031 and 0.023 kg, respectively (Figure 2).
- Higher seed germination observed in black seeds (17.2%) followed by brown seeds (5.5%). White seeds failed to germinate.

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CONCLUSION

The strength of certain vital biochemicals within the seed, are accountable for seed weight and viability also for seed colour. The applied aspect of present investigation is to encourage the agropractices that improve black seed yield with higher seed weight because quality seeds are important in large scale plantation by development of seed production areas or seed orchards with superior genotypes for quality seeds.

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