



Biannual seed yield, viability and germination in *Commiphora wightii* (Arnott) Bhandari

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INTRODUCTION

- *Commiphora wightii* (Guggal) is medicinally important endangered plant species.
- The population of this species declining sharply due to overexploitation, extensive tapping, slow growing, 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.
- Female plant produce black (viable) and white seeds (non viable).
- Present study aimed to estimate seed production in summer and winter and their viability ratios.

METHODOLOGY

- Studies were conducted on seeds collected from four trials of Deesa, (Guj., India) having 647 Guggal plants.
- Seeds were de-pulped, dried, counted for black and white proportion and weighed.
- Seeds collected in summer (March-July, 2017) and winter (November-December, 2017) were used to study the effect of season on total seed yield.
- Seed ratio, seed weight and seed germination were estimated on seed collected in summer (July, 2017) and winter (November-December, 2017).
- Seed weight (1000 seed) is calculated by following method: -
(Total seed weight of all the seeds of a plant/number of seed in that plant) x 1000

RESULTS

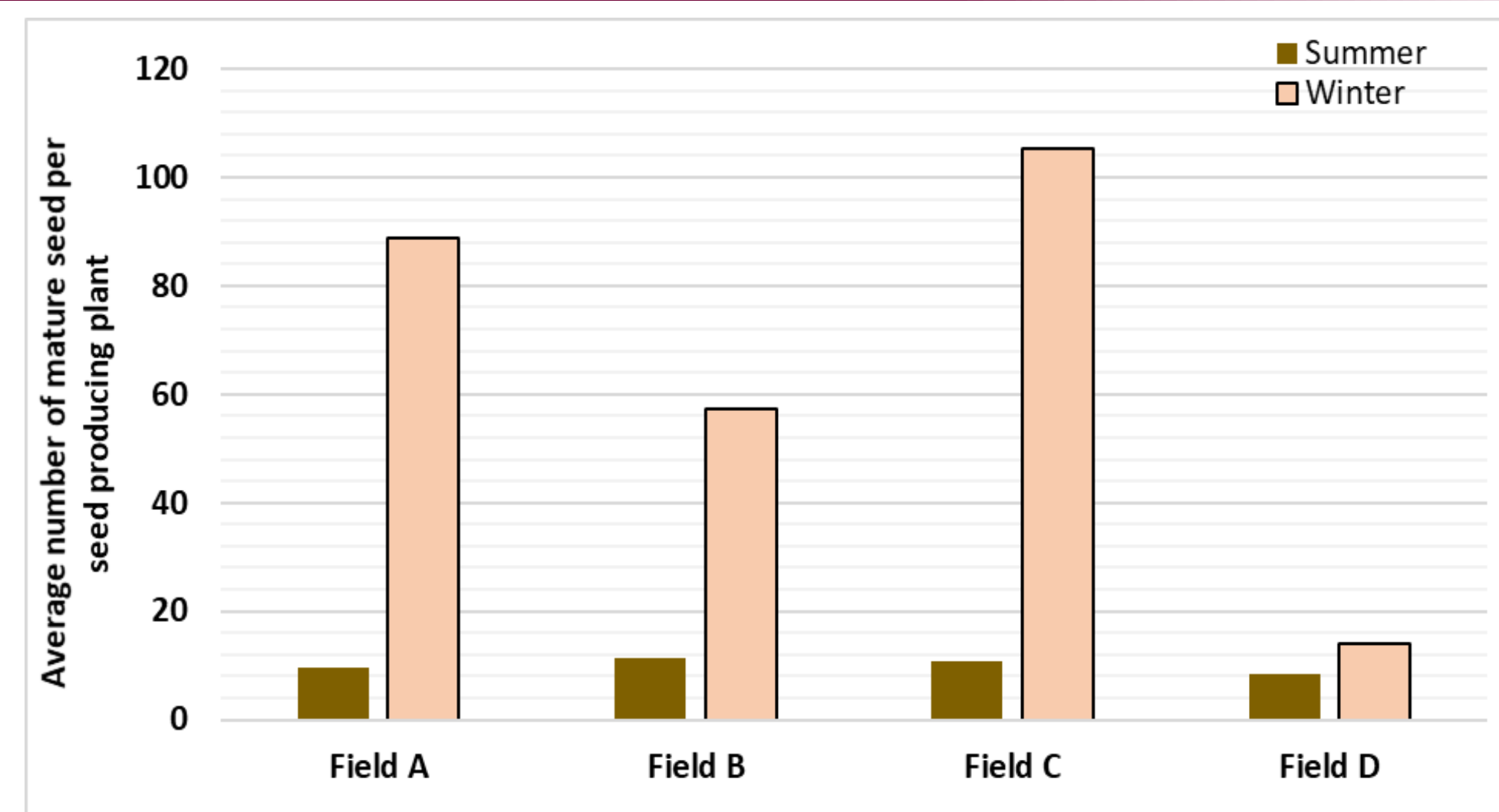


Fig. S1: Effect of season on mature seed yield in *C. wightii*

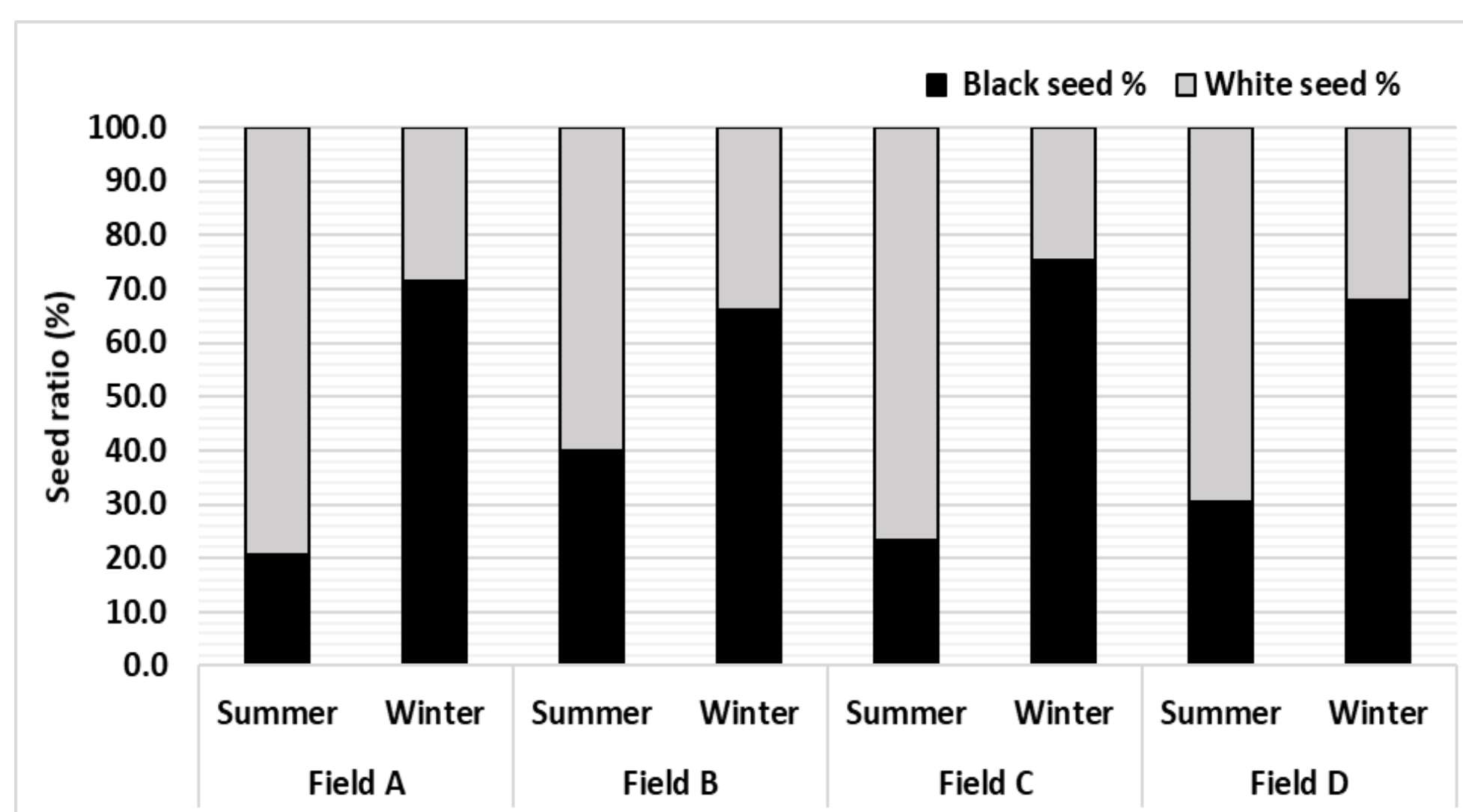


Fig. S2: Effect of season on seed ratio in four fields of *C. wightii*

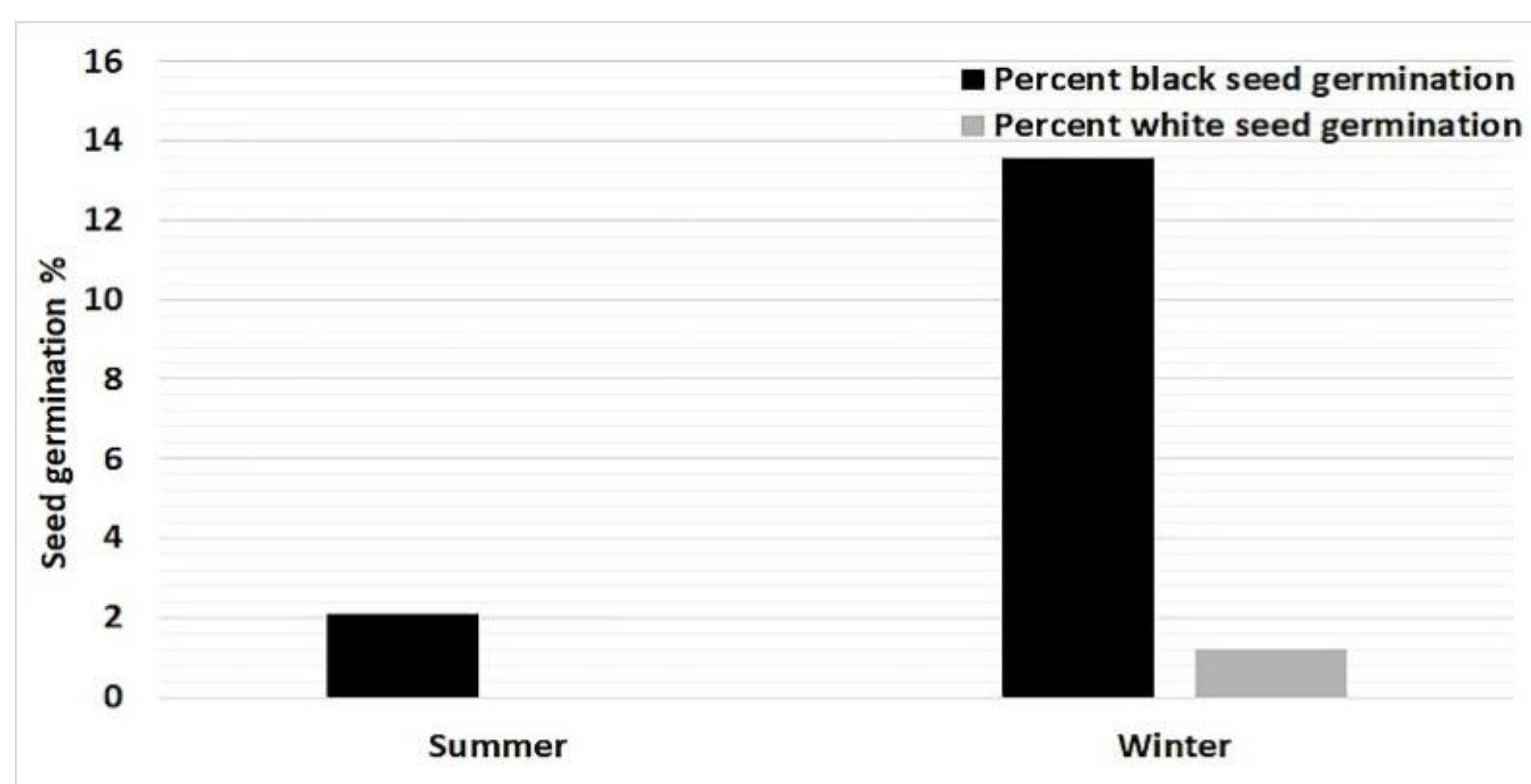


Fig. S3: Effect of season on seed germination of *C. wightii*

RESULTS

- Seed production in *C. wightii* is asynchronous and produce seeds throughout the year.
- Number of seeds per seed producing plant was higher in winter (72.5 seeds) as compared with summer (10.2 seeds) and field 'C' (105.3 seed) showed higher average seeds per seed producing plant (Fig. S1).
- Higher black seed ratio was found in winter (70.9%) as compare with summer (30%). The black and white seed ratio in summer and winter was almost opposite in all four fields (Fig. S2).
- The seed weight of black seeds was higher than white seeds. But black seed weight was almost similar both in summer and winter (39.6 and 40.0, respectively).
- Black seed germination was higher (13.6%) in winter collected seed than summer (2.1%; Fig. S3).

CONCLUSION

Present study concluded that winter is the right harvesting time for guggal seeds. Seed screening is necessary to remove white seed and seeds having low seed weight. This study is useful to stakeholders who are interested in raising large scale plants of Guggul through seeds.

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