

**SEED AND SEED GERMINATION OF *ELEUSINE CORACANA*****S.B. Wankhede**Rajiv Gandhi Mahavidyalaya Mudkhed, Dist. Nanded, Maharashtra India  
drsavitawankhede@gmail.com**ABSTRACT**

*Eleusina coracana* commonly called as Ragi in India. *Eleusina coracana* belonging in Family-Poaceae and class-Monocotyledon. *Eleusina coracana* is highly nutritional. It is rich source of protein, minerals, dietary fibres, calcium. It is also a rich source of thiamine, riboflavin, iron, methionine, isoleucine, leucine, phenylalanine and other essential amino acids. The occurrence of these phytochemicals enhances the nutraceutical potential of finger millet, making it a powerhouse of health benefiting nutrients. It has distinguished health beneficial properties, such as anti-diabetic, anti-diarrheal, antiulcer, anti-inflammatory, antitumorigenic, atherosclerogenic effects, antimicrobial and antioxidant properties. The present work done on seed and seed germination of *Eleusina coracana*. The observation made on germination percentage, seedling length, seed germinate at light conditions and seed germinate at dark conditions.

**Keywords:** seed germination, seedlings length, *Eleusina coracana*.

**Introduction**

The term Mycorrhiza was coined by A.B. Frank in 1885. Mycorrhiza is the Mutualistic symbiotic association between soil born fungi and roots of higher plants in which both are benefited. (Kasliwal and shriniwasmurthy., 2016).

Arbuscular mycorrhizal fungi is the mother of plant root endosymbiosis that establish symbiotic relationship with plants and play an essential role in plant growth, disease protection and soil fertility. (Thapa *et al.*, 2015).

Arbuscular Mycorrhiza fungi absorb immobilized mineral nutrition such as phosphorus, zinc and copper from the soil. (Bagyaraj, 2014).

Arbuscular mycorrhizal fungi also absorb nutrient i.e zinc, copper, nitrogen, sulphur, potassium, phosphorous, calcium, magnesium and iron from soil and it supply to the plant. (Alizadeh, 2012). It maintains carbon and nitrogen cycle. It regulates growth hormone. It increases photosynthetic rate. It maintains plant community and ecosystem. It helps in seedling establishment in forest. (Aggarwal *et al.*, 2011).

*Eleusina coracana* commonly called as Ragi in India. *Eleusina coracana* belonging in Family-Poaceae and class-Monocotyledon. *Eleusina coracana* is highly nutritional. It is rich source of protein, minerals, dietary fibres, calcium. It is also a rich source of thiamine, riboflavin, iron, methionine, isoleucine, leucine, phenylalanine and other essential amino acids. The occurrence of these phytochemicals

enhances the nutraceutical potential of finger millet, making it a powerhouse of health benefiting nutrients. It has distinguished health beneficial properties, such as anti-diabetic, anti-diarrheal, antiulcer, anti-inflammatory, antitumorigenic, atherosclerogenic effects, antimicrobial and antioxidant properties. (Chandra *et al.*, 2016).

**Materials And Methods: (Obembe And Agboola:2008 )**

Mature seeds of *Artemisia pallens* were from collected a field planting in 2016. After collection immature seeds and those damaged seeds were removed. The seeds were surface sterilized by soaking in 1% sodium hypochlorite for 5 minute and subsequently washed with sterilized distilled water.

Seeds of *Artemisia pallens* were subjected to germination tests. De-husked seeds were surface-sterilized in 10% (w/v) chlorox for 30 seconds and rinsed in several changes of distilled water. Fifty seeds were planted in each of the 9 cm diameter petri dishes lined with moist sterile filter. The experiment was carried out under light and dark at  $29 \pm 1$  °C. Light was supplied by four 40 watt white fluorescent lamps at a distance of 1 m (1,200 lux). The petri dishes for the dark condition were wrapped completely with aluminum foil and kept in a dark cupboard. Fifty seeds were also planted for germination. Observations were made for up to day 10 of incubation. Radicle emergence of up to 1.5 mm was taken as a visible sign of germination.. Statistical

analysis: All experiments were repeated 5 times. All germination experiments were conducted using three replications of 50 seeds per different treatment. Seeds were placed on Whatmann no. filter paper moisture with 5 ml of distilled water in sterilized petridishes with different conditions. Then it observes regularly. The germination percentage, seedling length, seed germinate at light conditions and seed germinate at dark conditions. Data were statistically analyzed by the SAS software using a completely randomized design and means were compared at the  $P = 0.05$  level of significance using Duncan's multiple range test ( $P < 0.05$ )

### Results and Discussion

Percentage of seed germination was observed at light condition as compared to dark condition at 2 days interval periods. Germination of seed showed at second day and seed germination was occurred third day at dark condition. Seedlings length was increased in light condition so we have concluded light condition is better than dark condition for seed germination and seedling.

Similar observation were made by Obeme and Agboola (2008), Germination test showed that the seeds of *O. gratissimum* were in a state of dormancy and Seeds germinated poorly especially in the dark with a maximum of 40% after 10 days. Germination of seeds of *O. gratissimum* was enhanced under light conditions. 70% seed germination was observed as from the 6th up to the 10th day after sowing. seed germination could be tested in davana seeds using paper media between the paper (roll towel) method has to be adopted for obtaining reproducible results of germination percentage observed by Jayanthi, (2013). Similar observations were made by different

researchers as the best method in many small seeded species namely Singh *et al.* (1990) in methi; Kalavathi (1996) in *Hibiscus*; Swapna (2003) in *Ocimum* spp, Chauhan *et al.* (2009) in *Andrographis paniculata* and Sumathi (2010) in Karpokkarasi.

**Table:1 Percentage germination of *Artemisia Palslens* seeds after 10 days incubation under light and dark condition at  $29 \pm 1^\circ\text{C}$**

Percentage Germination		
Periods (Days)	Light	Dark
2	0.0±0.0	0.0±0.0
4	16±1.6	00.00
6	27±1.8	17. ±2.1
8	36±2.3	24±.2.2
10	44±2.5	31±2.2

Mean± SD, (Standard deviation with 5 replicates) ANOVAs,  $p$ -value  $\leq 0.05$  there is significant difference between different treatment.

**Table:2 Seedlings of *Artemisia Pallens* seeds after 10 days incubation under light and dark condition at  $29 \pm 1^\circ\text{C}$**

Seedling length		
Periods (Days)	Light	Dark
2	0.0±0.00	0.0±0.0
4	2.84±0.16	0.0±0.0
6	3.62±0.18	1.81±0.26
8	3.81±0.32	2.47±1.29
10	3.91±0.31	2.91±1.71

Mean± SD, (Standard deviation with 5 replicates) ANOVAs,  $p$ -value  $\leq 0.05$  there is significant difference between different treatment.

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