SEED GERMINATION OF *EPHEDRA NEBRODENSIS*

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Summary. *About 40 air-dry berries weigh one gram. About 47% of the weight is that of seed and 53% that of pericarp. About 94% of the seed are sound. Germination is completed in about three weeks. No seed pre-treatment is necessary for hastening germination.*

Material, method and results. 5 kg of air-dried berries of *Ephedra nebrodensis* were received from Baluchistan in September 1976. The random samples of 10 gm each taken from this lot were weighed and the number of berries counted in each. Based on these samples, the number of berries in a ten gm air-dried sample were found to range from 392 to 418 (t. 05). About 53% of the weight of air-dry berries comprises the pericarp.

2136 seeds in ten random samples of 5 gm each were broken open. About 94% of the seed were sound, 4% empty, and 2% insect attacked.

Separation of sound seed. Water and ethenol (95%) floatation and air-blowing were used to determine the best method of separation of sound and empty seeds. For air blowing, the seeds were allowed to fall from a height of 60 cm at a distance of 70 cm before an exhaust fan having a wind velocity of 1.77 metre/second as determined by air meter.

Percentage of sound seed among seed which settled at the bottom in the water and ethenol floatation methods, and which were not blown in the air-blowing method are given as under:

Lot No.	Number of seed used in each method	Percentage of sound seed which settled or which was not blown away		
		Water floatation	Ethenol floatation	Air blowing
1	100	2	72	94
2	100	2	77	95
3	100	1	76	94
4	100	3	72	96
5	100	2	80	95
6	100	2	77	94
7	100	1	76	95
8	100	2	76	96
9	100	1	76	97
10	100	2	77	95

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The above data indicate the superiority of air blowing over water and ethenol (95%) floatation for separating sound seeds of Ephedra from unsound seeds.

Germination The seed were graded into large, medium and small sizes by passing through meshes of 2830 and 2380 microns. Seeds of each grade, A (larger than 2830 microns), B (between 2830 and 2380 microns) and C (smaller than 2380 microns) were cleaned and treated with the fungicide vitagram blue. The germinator was sprayed with dilute $HgCl_2$ solution. A sample of 1500 seeds was taken at random from the lot of each grade. The sample was subdivided into three sub-samples each containing 500 seeds. One sub-sample was treated with dilute Sulphuric acid (10%) for fifteen minutes and the other with hot water at 80°C temperature for the same duration. Each of these sub-samples was further divided into 5 lots of 100 seeds. The untreated sub-samples were also divided into 5 lots of 100 seeds each to act as control. Each treated lot alongwith control was placed in the germinator on 30th October, 1976. The germinator was kept at a tempeiature of 20°C for 16 hours from 4.30 p.m. to 8.30 a.m. and at 30°C for 8 hours from 8.30 a.m. to 4.30 p.m. The filter papers were kept moist throughout the experiment. Daily observations were recorded on the germination of seed at 9.00 a.m. for 30 days. The criterion for germination was the appearance of the elongated radicle.

The average germination percentages for different treatments were as follows:

Grade	Control	Hot water	H_2SO_4
A	92	91	5
B	89	83	4
C	95	86	5

Thus soaking in dilute H_2SO_4 for 15 minutes drastically reduced germination. Soaking in hot water for 15 minutes did not increase germination over control. Size of seed did not influence germination.