

EFFECT OF BRASSINOSTEROIDS ON GERMINATION OF GROUNDNUT (*ARACHIS HYPOGAEA* L.) SEEDS

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Effect of brassinolide, 24-epibrassinolide and 28-homobrassinolide on seed germination and early seedling growth of groundnut (*Arachis hypogaea* L.) was studied. All the brassinosteroids were found to promote germination and seedling growth.

Brassinosteroids are novel group of growth promoters (Mandava, 1988; Sakurai and Fujioka, 1993). Evenari (1949) suggested that several groups of growth regulators also act as germination regulators. The present study aimed to find out the effect of brassinosteroids in the regulation of seed germination

Brassinolide, 24-epibrassinolide and 28-homobrassinolide were purchased from Beak Consultants, Inc., Brampton, Ontario, Canada. *Arachis hypogaea* L. Var. ICGS 44 seeds were procured from International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Patancheru, Hyderabad.

Seeds were surface sterilized with 0.1% (w/v) mercuric chloride and washed thoroughly with several

changes of sterile distilled water. Twenty five seeds were put in each 15 cm sterile petriplates provided with Whatman No. 1 filter papers. Each compound was tested at 3 concentration levels viz., 0.5 M, 1.0 M and 3.0 μM. Ten ml of either of test solution and distilled water as controls were added into petriplates. The plates were kept in dark room at 20±1° C. Four ml more test solution was added to the plates at the end of 48 hours. Germination counts were taken at the end of 24, 48 and 60 hours. Emergence of radicle was taken as criteria for germination. After 60 hours, 5 seedlings were retained in each plate and the remaining seedling were removed and 5 ml test solution was added. On 5th day another dose of 5 ml test solution was put into the plates. On 7th day seedling length, fresh weight and dry weights were recorded.

Table I. Effect of brassinosteroids on germination of *A. Hypogaea* L. Seeds

Compound	Percentage of seed germination									Seedling growth								
	24 hrs			48hrs			60hrs			Length (cm)			Fresh weight (g)			Dry weight (g)		
	0.5 μM	1.0 μM	3.0 μM	0.5 μM	1.0 μM	3.0 μM	0.5 μM	1.0 μM	3.0 μM	0.5 μM	1.0 μM	3.0 μM	0.5 μM	1.0 μM	3.0 μM	0.5 μM	1.0 μM	3.0 μM
Brassinolide	0	0	6	52	73	87	78	95	97	4.8	6.8	7.5	2.13	2.44	2.87	0.59	0.70	0.72
24-Epibrassinolide	4	6	25	46	61	74	84	88	94	5.6	7.5	7.8	2.54	2.46	2.72	0.54	0.61	0.65
28-Homobras- sinolide	0	12	23	57	61	75	92	94	97	5.8	6.5	7.1	2.51	2.72	2.2	0.53	0.54	0.64
Control	0	0	0	46	46	46	75	75	75	4.5	4.5	4.5	1.99	1.99	1.99	0.50	0.50	0.50
CD at 5%			7.5	NS	10.8	8.6	6.1	5.2	4.8	0.59	0.62	0.90	0.39	0.25	0.24	NS	NS	0.08

All the three brassinosteroids promoted seeds germination (Table I). Considerable number of seeds were found germinated at the end of 24 hours in case of 24-epibrassinolide and 28-homobrassinolide treated seeds (3 μ M concentration), indicating acceleration of seed germination. In addition, brassinosteroids also promoted early seedling growth by causing an increase in all the three parameters of growth. The results obtained in the present study with brassinosteroids supports the view of Evenari (1949). Brassinosteroids which act as growth promoters as well as germination promoters.

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