



ISSN 2394-5303

GOLDEN JUBILEE YEAR
1967-2017



Shri Balaji Sansthan, Deulgaon Raja's

Shri Vyankatesh Arts, Commerce & Science College

Deulgaon Raja, Dist. Buldana (M.S.), PIN- 443204.

■ NAAC RE-ACCREDITED AT 'B' LEVEL ■

PrintingTM Area

Special Issue

December 2017

International Multilingual Research Journal

INNOVATIVE TRENDS IN LIFE SCIENCES



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St. Paul, MN. pp.50-79.

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Determination of Effect of Phytohormone on the Seed germination of *Sesbania grandiflora* of Maharashtra.(India)

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Abstract

Hormones may be defined as biologically active substances which regulate and stimulate plant growth and development .Most of the physiological activities and growth in plants is regulated by the action and interaction of chemical substances in them called hormone.(Rekha Balodi 2013) An experiment was carried out to study the effect of plant growth hormone on seed germination of *Sesbania grandiflora* belongs to family Fabaceae in the Marathwada region of Maharashtra.

Key Words: Marathwada, Seeds, germination, growth hormone, Sesbania

Material and Methods

The Seed samples were collected from Marathwada region of Maharashtra. The investigation was conducted in the laboratory during 2016-2017. Ten Seeds for each treatment of *Sesbania grandiflora*, were soaked in various plant growth regulators viz. NAA, KI and 2,4-D at 10, 20, & 30PPM for the duration of four days. Untreated seeds served as the control.

Result and Discussion

It can be observed from the data presented in Table-1 that all the treatments significantly influenced the germination percentage when compared to the control(water Soaking)Three growth hormones NAA, KI and 2,4-D of different concentration i.e. 10, 20 and 30 ppm were

afforded to study their effects on the germination of seeds of *Sesbania grandiflora*. In NAA 30%, 50% and 80% are germinated in 4 days at 10, 20 and 30 ppm seeds. While the percentage of seed germination was % (SGP⁴₃₀, SGP⁴₅₀ and SGP⁴₈₀). While in KI at 10 ppm 6 seeds are germinate 04 days at 20ppm 7 seeds germinated and 30 ppm 10 seeds are germinated respectively. The percentage of seed germination was 50 % at 10 ppm and 70 at 20 and 100% at 30 ppm (SGP⁴₆₀, SGP⁴₇₀ and SGP⁴₁₀₀). In 2,4-D 2 seeds germinated in 4 days at 10 ppm and Zero seeds germinated at 20 and 30 ppm. The percentage of seed germination was 20 % at 10ppm and zero % at 20 and 30 ppm respectively (SGP⁴₂₀ SGP⁴₀₀)

In KI (30ppm) treated seedling induced in enlargement and increased in Plumule, with increasing the concentration. while in NAA treated seedling reduced in length but increase in size of cotyledons as compared to control. Similar results have been reported by Arumugam et.al. (2006); Dhankar & Sing (1996) In 2,4-D 10, 20 and 30 ppm, the seed germination is retarded. (Table 01, plate 01)

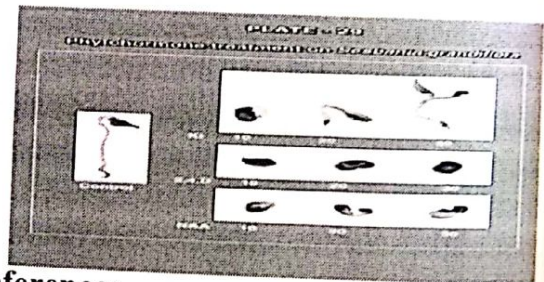
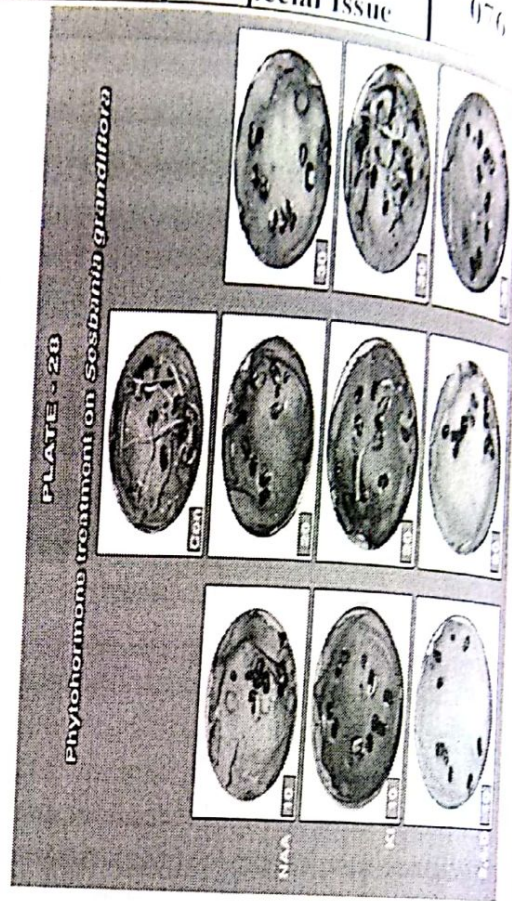
Conclusion

The result indicate that NAA, KI and 2,4-D affect the germination of seeds. Improvement in germination may be obtained with NAA and KI in *Sesbania grandiflora*. The responses of these growth hormone was specific and largely dependent on the nature of seeds.

Table.01.

Effect of Phytohormone on Seed Germination of *Sesbania grandiflora*

Sr. No.	Growth hormones in ppm	Total seeds	Days for Germination	Total Seeds Germinated	% of Seed germination %
1	Auxin :- (NAA) 10	10	04	03	30
	20	10	04	05	60
	30	10	04	08	80
2	KI 10	10	04	06	60
	20	10	04	07	70
	30	10	04	10	100
3	2,4-D 10	10	04	02	20
	20	10	04	00	00
	30	10	04	00	00
4	Control with distil Water	10	04	10	100



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