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EFFECT OF PLANT EXTRACTS ON GERMINATION OF OIL SEEDS

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INTRODUCTION

Different parts of plants and their extracts have been used for various purposes since long time ago due to their chemical properties, availability, and simple use without side effects. Certain plant extracts found to have cytotoxic effects [1], some showed antioxidant properties [2,3] while a group of plant species effectively showed antimicrobial activities [4-6]. Besides protecting plants from different pest and diseases, several investigators reported the effect of plant extracts on germination and growth of different crops. The inhibitory effects, there are a lot of reports indicating positive effects of plant extracts on germination and growth.

Present study was undertaken to observe the effects of aqueous extracts of some herbal plants viz. Leonotis nepetifolia, Mentha spicata, Tinopora quardifolia, Vitex negundo, Achyranthus aspera, Tephrosia purpurea and Pongamia pinnata on the germination of *Cathranthus tinctorius, Helianthus annuus, Glycin max, Ricinus communis and Arachis hypogeal.*

MATERIAL MENTHOD

During the present studies seven plants such as Leonotis nepetifolia, Mentha spicata, Tinopora quardifolia, Vitex negundo, Achyranthus aspera, Tephrosia purpurea and Pongamia pinnata were selected and identified by using Flora of Marathwada (V. N. Naik 1998)[7]. The flowering twigs of the plants were collected, washed and oven dried. The dried twigs with leaves and flowers were powder of each with the help of blender. 10 gm powder of each test plant was dissolved in 100 ml sterile water in borosil galss conical flasks separately. The flasks were kept for 24 hours at room temperature. The contents were filtered through Whatman No. 1 filter paper. The filtrates were used as 10% Whole Plant Extracts (WPE). One hundred seeds of *Cathranthus tinctorius, Helianthus annuus, Glycin max, Ricinus communis and Arachis hypogea* were soaked in the WPE of the test plants for 24 hrs. the soaked seeds were dried and stored for ninety days in sealed plastic jars with a hole for aeration at room temperature. Similarly the seeds soaked in sterile water were also stored for the same period for comparative studies. The untreated and unstored fresh seeds of the test crops were served as control. After the storage period of ninety days, germination of seeds was tested by seed germination method. For this the stored seeds were plated on moist blotters. The blotter plates were incubated for ten days at room temperature. After incubation, percentage of seed germination of all the test crops was observed and results were recorded. The seeds with more percentage of germination were considered as most viable.

Sr. No.	Plant Extract	% of Seed Germination				
		Cathranthus tinctorius	***Helianthus annuus***	***Glycin max***	***Ricinus communis***	***Arachis hypogea***
1.	*Leonotis nepetifolia*	60	62	60	70	80
2.	*Mentha spicata*	50	52	60	65	75
3.	*Tinopora quardifolia*	50	53	50	70	72
4.	*Vitex negundo*	50	52	54	58	60
5.	*Achyranthus aspera*	55	56	55	60	66
6.	*Tephrosia purpurea*	60	63	60	65	67
7.	*Pongamia pinnata*	40	44	40	45	50
8.	*Water*	40	42	42	40	46

RESULT AND DISCUSSION

Form the table it is clear that percent seed germination is highest in *Arachis hypogea* with WPE of all selected plant extract. In case of *Cathranthus tinctorius* it is found to be less in percent of germination among all oil seeds used in the experiments. *Tephrosia purpurea* and *Leonotis nepetifolia* were found to be more effective for the maintenance of germination of the oil seeds during storage as compare to the other test plants. The seeds treated with water were found to be less viable.

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