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BOTANY

SEED PHYSIOLOGY OF SOME PULSES AND CEREALS UNDER THE INFLUENCE OF *ACACIA ARABICA* GUM

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Abstract

Present paper deals with the study of impact of *Acacia arabica* gum solution on seed germination, root and shoot length of some pulses like cowpea, gram and some cereals like wheat and maize. It was found that *Acacia arabica* gum induces the seed germination, root and shoot length.

Keywords: Seed germination, *Acacia arabica* gum, Cereal, Pulses

Introduction

Gum arabica natural gum collected as exudates from different species of *Acacia* trees (Yapen Fang, 2010). Gum arabic is complex polysaccharides. Gum arabica shows antioxidant properties. The use of gum arabica has a long history. Now a days the properties and function of gum arabic have been extensively developed consequently. It is utilized in a wide range of industrial sectors including painting, glue pharmaceuticals etc (William, 2000; Ye, 2006). Even though gum arabic is utilized in our daily food there is no definite scientific consensus. About its possible biological properties (Phillips, 1998). There is very little information about the biological properties of gum arabic on botanicals. Considering the fact in present

work has been carried out to study the impact of gum arabic on seed physiology of some pulses and cereals.

Materials and Methods

Gum arabica was collected from Ajantha forest, at Ajantha, India. One percent solution of gum arabica was prepared. Seeds of cow pea, red gram, wheat and maize were soaked in 1 % solution of gum arabica for 24 hours. They were then placed on moist blotter in Petri plates. Seed soaked similarly in water served as control. Percent germination, root and shoot length of seedlings was measured after 7 days of incubation at room temperature.

Table 1 Impact of *Acacia arabica* gum (01%) on seed physiology of some pulses and cereals

Seeds	% seed germination		Root length (mm)		Shoot length (mm)	
	Treated	Control	Treated	Control	Treated	Control
Cowpea	90	80	11.1	5.6	6	4
Gram	80	60	3.4	1.8	--	--
Wheat	90	90	1.8	1.5	1.7	1.2
Maize	80	50	1.1	1.1	--	--

Results and Discussion

Table 1 show that *Acacia arabica* gum induces seed germination of cow pea, gram, wheat and maize

seeds. It was also found that *Acacia arabica* gum activated the root and shoot length of cowpea and wheat seeds.

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Conclusion

It can be concluded that *Acacia arabica* gum induces seed physiology of cow pea, gram, wheat and maize seeds.

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