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IN VITRO INDUCTION OF SHOOT IN BLACK PEA

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ABSTRACT :

In-vitro induction of shoot black eyed pea (Vigna unguiculata) was carried out with explant, seed of Vigna unguiculata. Explant was tested against different concentration of BAP on MS media Observation was recorded after two weeks in terms of elongation of shoot from seed of Vigna unguiculata. The effect of different concentration of BAP(Benzyl amino purine) was examined for development of shoot from seed. BAP at 0.8mg/litre was found to be best treatment for development of (elongation) shoot from seed. From this work I would like to suggest the optimum concentration for shoot induction one should use 0.8mg/litre BAP along with MS media.

Key Words: In-vitro, BAP,Black eyed pea, *Vigna unguiculata*,Explant *etc.*

Introduction :

The legume crop known as black eyed pea (*Vigna unguiculata*) is used as green manure, pasture, and a source of steroid sapogenins, which have major medical applications (Provorovi et al. 1996). This annual self-fertile species is found in South East Asia and extends from Central and South Europe.
Numerous attempts at bean tissue culturing procedures have been documented. In 1992, Kobuyana et al. documented the in vitro production of mature plants through embryo culture, resulting from the hybridization of three garden bean lines. There are a tonne of publications available regarding the different Phaseolus species' micropropagation. The genotypic dependency of various P. vulgaris variants under various cultivation regimes was investigated by Allavena and Rosetti (1986). BAP and thidiazuron (TDZ) increased the incidence of multiple shoot production in P. vulgaris cuttings, as demonstrated by Malik and Saxena (1992). Mohammed (1992) created a technique for the regeneration of shoots into fertile plants and the production of multiple embryo shoot development in axillary explants from zygotic P. vulgaris embryos.

Materials and Methods :

Dried seeds were purchased from local market of Bhiwandi. After rinsing the seeds four times under running tap water, they were rinsed once more in 70% ethanol for a duration of two minutes, and then four more times in double distilled water. Lastly, the seeds were treated for five minutes with 5% sodium hypochlorite (NaOCl), after which they were rinsed four more times with double-distilled water. Following a laminar flow of openings in the seed cotyledons, the embryo was extracted and split in half horizontally. Then, in distinct culture jars designated A, B, C, and D, each half was cultured independently. horizontally. Then, in distinct culture jars designated A, B, C, and D, each half was cultured independently.
For the purpose of inducing callus, the culture jars were incubated at 26±2°C for 8 hours under a white light.The explants were grown in Murashige and Skoog medium, which contained 1 ml/L of vitamins, 20 ml/L of stock solutions of macro and micronutrients, and 3% (w/v) sucrose, 0.3% (w/v) agar, 100 mg/L casein hydrolysate, various concentrations of BAP(0.4 , 0.6,0.8 mg/L) for the callus induction media. The medium was autoclaved for 15 minutes at 121°C (1.06 kg/cm2) after being adjusted to pH 5.8. Following the calli's development, they were subcultured in jars with increased cytokinin (BAP) concentrations to promote the growth of the shoots.

RESULT AND DISCUSSION :

The present investigation was carried out with black eyed pea (*Vigna unguiculata*) to standardize the medium and explants of black- eyed pea for induction of shoot in black eyed pea. The seeds were prepared for dissection in aseptic condition and seed were inoculated on MS media with different concentration of BAP for induction of shoot. Observation was recorded only for shoots after 3days of inoculation to two weeks.
Table shows the different concentration of Cytokinin on MS medium.It was found that BAP 0.8mg/lit proved the best treatment producing shoot, which is maximum among all the treatment.

NAME OF CYTOKININ	CONCENTRATIO N[mg/lit]	OBSERVATION	
		4DATS	7DAYS
MS+BAP	0	–	–
MS+ BAP	0.4	–	–
MS+ BAP	0.6		
MS+ BAP	0.8	INITIATIONOF SHOOT	ELONGATION OF SHOOT

It means the concentration of cytokinin (BAP) increases from 0 to 0.8mg/lit, shoot initiated and also elongated from this table it can be concluded that optimum concentration of BAP shouldbe0.8mg/lit with MS basal media.

Cowpea shoot regeneration has been found to be successful from cultured tissues such as apices of shoots and roots (Kartha et al., 1981, Pandey and Bansal, 1989), leaves (Muthukumar et al., 1995), and somatic embryogenesis (Prem Anand, 2000). It has also been shown that smooth nodular callus from zygotic embryos and somatic embryogenesis from leaf explants can occur. Although it is ideal for a shoot to grow from a seedling, in vitro propagation has produced many shoots from a single seedling by raising the growth regulator concentration in the medium.

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