



The effect of plant growth regulators on shoot regeneration from callus basil (*Ocimum Basilicum L.*) In vitro

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Results and Discussion

Results showed that the type of medium, the callus derived from small samples and the interaction between these two factors had a significant effect on the number of basil shoots (Table 1). The interaction of culture and callus derived from explants on shoot traits, the lowest in all media, from fine roots were sampled. The highest and lowest number of shoots on medium 0.5 mg/l BAP +0.1 mg/l NAA, the cotyledon explants to a 9.24 mg/l and in cultured shoots 1 mg/l BAP+ 0.1 mg/l IBA, the amount of the fine root samples 1.05 respectively.

L. A. Banoo et al, (1999), regeneration results observation and colleagues found that regeneration from callus pieces around *Ocimum Sanctum* And F. Begum et al, (1999), and P. P. Sitakanta and K. Chand, (1996) reported that shoot regeneration in *Ocimum Sanctum*, has agreed. In a study of embryonic callus regeneration from callus after transfer to medium containing 0.5 mg/l of 2,4-D and 1 mg/l BAP was (C. Gopi and P. Ponmurugan, 2006). In a study by Archana et al, (2012) was conducted, maximum number of shoots from callus fetal concentration of 2.5 mg/l BAP, increased hormone production, and our results agree with the BAP, the number of regenerated shoots callus decreased with the results L. Xiao et al, 2007, N. C. Shawl et al, 2006, L. Gody et al, 2005, are approved.

The present study shows that the type of medium, type of explants and callus derived from the interaction between these two factors had a significant effect on shoot length basil. The interaction of culture and callus derived from explants index shoots, shoots most of the media in hypocotyl tissue was obtained. Minimal medium in the root tissues, respectively. Highest and lowest in cultured shoots 0.5 mg/l+ BAP 0.1 mg/l NAA and callus derived from hypocotyl explants amount of 8.92 cm from medium containing 1 mg/l BAP+ 0.1 mg/l IBA and the callus derived from root explants of 0.54 cm, respectively. This study showed that the hormone BAP from 0.5 to 1 mg of regenerated shoots decreased with increasing length results (L. A. Banoo and M. A. Bari, 2007), who observed increased levels of BAP and NAA and BAP combination shoots up decreased from callus, agreed.

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Along with the progress of science and creativity to be done.

Abstract

Basil is a plant belonging to the family Laminaceae. This research was performed to investigated the effect of plant growth regulators (NAA,BAP and IBA) on regeneration of callus from different explants as a factorial experiment in a completely randomized design with 12 treatments and 3 replications was conducted. Treatments callus from explants of hypocotyl, cotyledon and root at MS medium containing (0.5 and 1 mg/l) BAP and (0.25 and 0.1 mg/l) IBA and (0.25 and 0.1 mg/l) NAA. Results showed that the type of small, medium type and the interaction of them significant effect ($p \leq 0.01$) the number of shoots. The highest number of shoots was obtained by 0.5 mg/l BAP+ 0.1 mg/l NAA using cotyledon explants. The lowest number of shoots on medium containing 1 mg/l BAP+ 0.1 mg/l NAA was created using root explants. The highest and lowest shoots in medium 0.5 mg/l BAP mg/l+ 0.1 mg/l NAA and callus from explants hypocotyl to the 8.92 inches from medium containing 1 mg/l BAP+ 0.1 mg/l IBA and the callus derived from root explants of 0.54 cm, respectively. This study showed no significant change in the number of shoots and shoots with callus from different explants of basil and various concentrations of NAA and BAP and IBA hormone created.

Materials and Methods

For shoot regeneration from cotyledon callus formed from tiny samples, hypocotyl and root, basil experiment in a completely randomized design with three replications. The first factor, regeneration medium, consists of four types:

- medium MS+ 0.5 mg/l BAP+ 0.25 mg/l IBA
- medium MS+ 1 mg/l BAP+ 0.1 mg/l IBA
- medium MS+ 0.1 mg/l BAP+ 0.25 mg/l NAA
- medium MS+ 0.5 mg/l BAP+ 0.1 mg/l NAA

The second factor consists of three types of callus derived from cotyledon explants, hypocotyls and roots, respectively. Data analysis using SAS software and the means compared using Duncan test at 5% level and draw graphs using Excel software was used.

Table 1- Analysis of variance and the number of shoots regenerated from callus fresh basil

| Number of shoots | Shoots length | Degrees of freedom | Sources of variation |
|------------------|---------------|--------------------|---------------------------------|
| 25.311** | 49.637** | 3 | Type of culture |
| 88.557** | 38.987 ** | 2 | Type of callus |
| 7.271** | 4.982** | 6 | Type of culture QUOTE Of callus |
| 0.001 | 0.001 | 24 | Experimental error |
| 0.76 | 0.95 | - | Coefficient of Variation |

* And ** indicate significant at 5 and 1% probability level

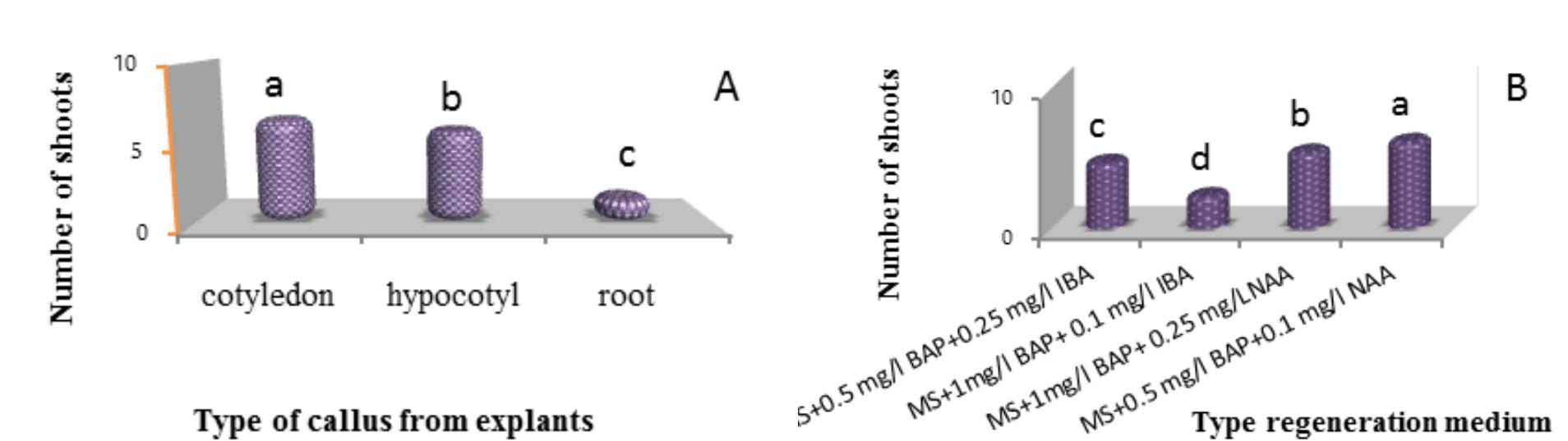


Chart 1- A. The effect of callus B. Effect of regeneration medium

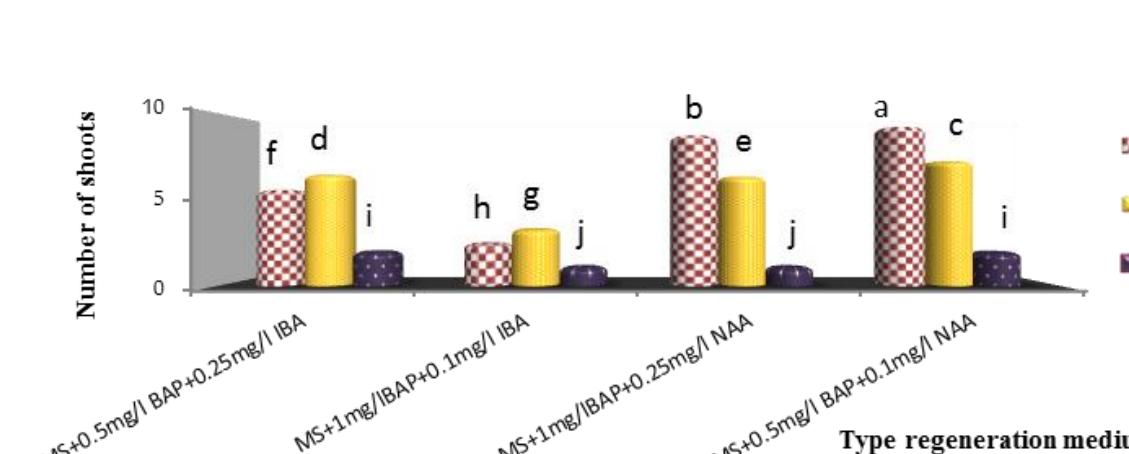


Chart 2- Interaction of callus culture and regeneration;



Figure 1- shoot regeneration from callus Basil