

## Abstract

### **Propagation of *Amygdalus arabica* Oliv. by Stem Cuttings and Seeds**

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Stem cuttings (collected November 1993, January and May 1994) and seeds (collected November 1993) of *Amygdalus arabica* Oliv. were collected from known mother shrubs grown naturally in the Eastern part (Badia) of Jordan. Two types of cuttings were prepared: basal (15 mm in diameter) and medial (6 mm in diameter); each cutting was 15 cm long and received two 20 mm long opposite longitudinal incisions. Bases of both types of cuttings in the collection dates were dipped separately in zero, 2000, 3000 and 4000 ppm IBA for 10 seconds. The cuttings were left to root for

8 weeks in a heated glasshouse at the University of Jordan Campus and in a controlled glasshouse at AL-Hussein Station. The experimental design was factorial in a completely randomized design with 10 cuttings per treatment in four replications.

Seed experiment consisted of five treatments: Stratification of endocarps containing seeds at 5°C, stratification of endocarpless at 5°C, scarification of endocarps containing seeds with concentrated H<sub>2</sub>SO<sub>4</sub>, stratification of scarified endocarps containing seeds and a control (nonscarified nonstratified). Number of seeds per treatment was 20 (4 replications) in CRD. The seeds were planted in cell trays in a glasshouse at the University of Jordan, January 1994. The seedlings were transplanted when they attained 5 to 6 cm length.

The results indicated that significantly highest rooting percentage (18%) was obtained in cuttings prepared in November 1993 and rooted at the University of Jordan using 3000 ppm IBA. At AL-Hussein Station and the University of Jordan, significantly highest rooting percentages were obtained in basal cuttings prepared in November 1993 and dipped in 3000 ppm IBA and in medial cuttings prepared in January 1994 and dipped in 2000 ppm IBA, where 17.5% and 27.5% were obtained, respectively.

Medial cuttings prepared in January 1994, dipped in 2000 ppm IBA and rooted at AL-Hussein Station, gave significantly highest percentage (20%). The overall rooting percentage was

significantly best in medial cuttings at 2000 (18%) and 3000 ppm (18.1%) IBA.

All IBA treated cuttings prepared in November and rooted at the University of Jordan gave significantly greater number of roots per cutting over the controls. Greatest number of roots per cutting (2.9) was obtained when 3000 ppm IBA was used as well as in basal cuttings (2.3) prepared in November 1993 and rooted at AL-Hussein Station.

In January 1994, medial cuttings with 3000 ppm IBA at University Campus and at AL-Hussein Station, greatest number of roots per cutting (30.5 and 17.5 respectively) was obtained. The overall results showed that greatest root number per cutting was obtained with the 3000 ppm IBA (9.7), medial (7.5) as well as in cuttings prepared in January (9.3).

Significantly longest roots were obtained in basal cuttings with 3000 ppm IBA (3.8) and rooted in November 1993 at University of Jordan as well as cuttings with 2000 ppm (1.9) and; basal cuttings (1.3) rooted in November 1993 at AL- Hussein Station. However, significantly longest roots were obtained in medial cuttings with 4000 ppm IBA and rooted in January 1994 whether at the University of Jordan or AL-Hussein Station where 13.8 and 10.3 mm were obtained, respectively. The overall average

root length (6.7 mm) was obtained in medial cuttings with 4000 ppm IBA.

Callusing percentage in cuttings prepared in November 1993 or in January 1994 at the University of Jordan showed no significant difference to IBA concentration. However; cuttings rooted at AL-Hussein Station in November 1993 gave significantly better callusing in basal cuttings (51.3%) while those prepared in January 1994 showed highest callusing in medial cutting treated with zero pm IBA. The overall results showed better callusing in basal cutting in comparison to medial ones.

In general, cuttings collected in January were superior to those collected in November in root number per cutting and in average root length and in less incidence of rotting.

Significantly highest germination percentage (71%) and lowest number of days for seed germination (13) were obtained in endocarpless stratified seeds. However, survival percentage of seedlings was significantly least in endocarpless stratified seeds (55.8%).