**ABSTRACT**

DINY DINARTI. In Vitro Propagation and Micro Bulb Induction of Shallot.
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Shallot growers use harvested bulbs as propagules for the next planting. The use of the bulbs may cause degenerative diseases. Therefore, propagation system of shallot must be sought. A series of experiments were conducted in the Department of Agronomy and Horticulture IPB and the University of Queensland from May 2007 to July 2011. The first objective in this experiment was to determine the effect of explant storage duration on in vitro shoot multiplication of shallot. The experimental results showed storage length affected the growth of culture. Two-month stored bulbs gave the best results on the number of micro shoots, number of leaves and roots and less vitrification. Four-week-old shoots were the best used as micro-propagules in shallot micro bulb induction. The objective of the second experiment was to determine the effect of temperature on the formation of shallot micro bulbs. It was shown that room temperature influenced the number of micro bulb, bulb base diameter, the widest diameter, ratio of the widest diameter and the base diameter of shallot micro bulb (Dt / Dp), root length, shoot length, number of leaves, number of senescing leaf. Temperature of 30/27 °C was better than 20/17 °C in accelerating the process of micro-bulb formation and increased the size of shallot micro bulbs. The objective of the third experiment was to determine the effect of sucrose and paclobutrazol on micro bulb induction. No interaction between sucrose and paclobutrazol was shown. Sucrose affected plant height, number of senescing leaf, root number, root length, the weight of plantlets and micro bulb widest diameter. Sucrose concentration of 90 g L⁻¹ was the best in inducing shallot micro bulbs. Paclobutrazol significantly affected plant height, number of senescing leaf, number and length of roots. Paclobutrazol at level 10 mg L⁻¹ inhibited plant height, leaf number and root length. Paclobutrazol 0.1-10 mg L⁻¹ shortened root length. Paclobutrazol at concentration of 1 and 10 mg L⁻¹ produced an abnormal form of micro bulb. The objective of the fourth experiment was to determine the success of shallot shoot and micro bulb acclimatization. At this stage of acclimatization, micro bulbs could be successfully grown for 3 weeks after acclimatization. Micro bulb was better in acclimatization than rooted plantlet. Plants may be transplanted to the field at 2 weeks after acclimatization. It is concluded that bulb stored for two months was the best for shoot multiplication. Media MS+vit B5 and 90 g L⁻¹ sucrose at 30 °C was the best for bulb induction. Paclobutrazol should not be used for bulb induction. Bulb was better acclimatized than plantlet. The media for acclimatization was green leaf compost and husk charcoal.

**Key words:** Shallot (Allium ascalonicum L.), micro bulb, explant age, room temperature, sucrose, paclobutrazol.