

Effects of some auxins on propagation by hardwood cutting of autumn olive (*Elaeagnus umbellata* Thunb.)

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Abstract: Autumn olive (*Elaeagnus umbellata* Thunb.), belonging to Elaeagnaceae family, naturally spreads over Southern Europe and East Asia. It is a deciduous shrub or small tree growing up to 6 m in height and 9 m in width. Its form is rounded, with dense branches. The species can store the nitrogen in its roots. Thus, it has the ability to live even in the most inefficient soil. It is valued for its ability to prevent erosion and to attract wildlife, and has been used to increase certain types of agroforestry. When it is mature, the species has edible fruit with brilliant red or yellow pigmentation, and can be consumed especially as dried fruit. In addition, the greatest benefit of the fruit is the amount of lycopene it has. 100 grams of this fruit contains 7 to 17 times more lycopene than the same amount of tomatoes. Besides having extremely useful fruits, the species which also includes antioxidants can be used in horticulture and landscaping thanks to its leaves and flowers. Therefore, it is necessary to protect and reproduce autumn olive. Within the scope of this study, propagation of the species is carried out by hardwood cutting which is one of the vegetative propagation methods. The objective of the present study is to determine the effects of some auxins (IBA 1000 ppm, IBA 5000 ppm, NAA 1000 ppm and NAA 5000 ppm) were investigated on propagation by hardwood cutting of autumn olive in greenhouse media with air temperature at 20±2°C, rooting table temperature at 25±2°C and perlite rooting media. The first root formation date, rooting percentage, root length and the number of roots were determined. The results showed that the highest rooting percentage occurred as 60% in NAA 5000 ppm treatment. This study will provide a basis for further researches to be made using vegetative propagation methods.

Keywords: Autumn olive, *Elaeagnus umbellata*, Cutting propagation, Auxin