

## ABSTRACT

### USE OPPORTUNITIES OF DIFFERENT AGGREGATES AND NUTRIENT SOLUTIONS IN LILIUM GROWING

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This study was conducted to determine the effects of different Nutrition Solution formulations (NS) and aggregates (substrate) which are used as growing substrate on the quality of flower stalk, plant growth and bulb development, on liliium cultivation as cut flower. The study is performed as Nutrition Trial and Substrate Trial. The Nutrition Trial is carried out in spring and autumn periods whereas Substrate Trial is carried out in only spring period and in autumn, the cultivar of *Lilium* LA hybrids "Ercolano", in spring, the cultivar of *Lilium* LA hybrids "Ceb Dazzle" were used.

In Nutrition Trials, 4 different NS which of each included different dose of macro and micro nutrient elements, were used, whereas in Substrate Trail 9 different substrates as Chestnut shell + Perlite (1:1), Peanut shell + Perlite (1:1), Sand + Peanut Shell (1:1), Perlit, Chestnut shell + Sand (1:1), soil + Organic Manure + Peat (Control) (1:1:1), Peat + Sand (1:1), Cocopeat, Volcanic Tuff were used. In the study, plant lenght parameters related to the liliium plants growth, some parameters related to the growth of mother bulb and bulblets formed on bulb and stem, and some parameters such as flower stalk lenght, flower stalk diameter, number of nods, length and number of leaves, fresh and dry weight of flower stalks, number of flower buds, lenght of flower buds; diameter of flower and vase life related to the quality of flower stalks, have been set in order to determine the affects of Formulation of Nutrition Solution and aggregates on flower liliium cultivation.

When the results are evaluated generally, it is concluded that the best results are obtained from the mixture of perlite+peanut shell (1:1) in Substrate Trial. In Nutrition Trial it was found that there were no differences in respect to the flower quality and plant growth among the NSs used in autumn period, whereas in spring period, the highest values were obtained from NS-1 application that includes 210 ppm N, 31 ppm P, 234 ppm K, 48 ppm Mg, 160 ppm Ca, 64 ppm S, 2,5 ppm Fe, 0,5 ppm Mn, 0.5 ppm B, 0,02 ppm Cu, 0,05 ppm Zn and 0.01 ppm Mo, in respect

to the flower stalk and leaf length, flower stalk fresh and dry weight of flower stalk and length of flower bud criterias.

**Key words:** Lilium, Nutrition solution formulation, Substrate culture, substrate quality