Effect of some a gricultural treatments on yield productivtty of artichoke

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This study was carried out in the seasons of 1992-1993 and 1993-1994 at the Experimental Farm, Faculty of Agriculture Moshtohor, Zagazig University and laboratory of the Department of Horticulture at the same faculty. It was conducted to elucidate the effect of NPK fertilizer levels and growth regulators (GA3 or PP333) at different concentrations on vegetative growth, early as well as total yield and the physical and chemical properties of flower head and edible parts (receptacles) of artichoke cv. Herious.This experiment included 21 treatments resemple the combination of three levels of NPK fertilizers with seven treatments of growth regulators. This experiment was arranged in a split-plot design with four replicates where the fertilizer levels i.e. low level (45 kg N+16kg P205 + 24kg K20/fad.), medium level (60 kg N+32kg P205 + 48kg K20/fad.) and high level (75 kg N+48kg P205 + 72kg K20/fad.) were situated in the main plots and growth regulator treatments i.e. GA3 at 10, 20 or 40 ppm, PP333 at 20, 40 or 60 ppm beside the control one were randomly distributed in the sub-plots.The obtained results can be summarized as follows :Using the medium or high level of NPK fertilizers as soilapplication combined with 40 ppm GA3 as foliar spray resulted in the highest values of plant height and number of leaves per plant. As for number of shoots/plant, using 10 ppm GA3 or 40 ppm PP333 proved to be of superior effect in thisrespect. However, in case of dry matter % of the 4th leaf, no clear trend could be detected.2.Increasing NPK fertilizers level significantly increased N, P and K concentrations in artichoke leaves. Furthermore application of either GA3 or PP333 at various used rates were mostly of a slight but not significant enhancing effect in this respect.3.Application of the medium level of NPK fertilizer combined with 40 ppm GA3 followed by using the highest level of NPK fertilizer when combined with 20 ppm PP333 surpassed all studied treatments concerning length, diameter and fresh weight of flower heads and weight of receptacles. However, dry matter of receptacles showed the highest values with the lowest NPK fertilizer level combined with 10 ppmppm PP333•4.Increasing NPK fertilizer levels significantly increased number of flower heads per plant as well as early and total flower heads yield per faddan. Although, application of either GA3 or PP333 at their used concentrations significantly improved all studied yield parameters compared to untreated control, an increasing tendency in this respect could be observed as GA3 concentrations increased, meanwhile opposite trend was detected in case of PP333• Artichoke plants supplemented with the highest fertilizer level (75 kg N +48kg P205 + 72kg K20/fad.) and sprayed three times with 40 ppm GA3 ranked first, followed by those received the medium fertilizer level (60 kg N + 32kg P205 + 48kg K20/fad.) and sprayed with 20 ppm PP333, meanwhile plants received the lowest fertilizer level (45 kg N+16kg24kg K20/fad.) and not treated with growth regulators ranked last among all studied treatments. As average of both seasons, corresponding values of the three previously mentioned treatments were 12.74, 11.92 and 7.14 tons/fad. in case of total yield and 1670, 1698 and 854 kg/fad; in case of early yield,respectively.5.Using the medium fertilizer level combined with 20 or 40 ppm of either GA3 or PP333 resulted mostly in the highest values of N, P and K as well as reducing, non-reducing and total sugars% of the edible part of the flower heads.6.Artichoke plants supplemented with the lowest used level of NPK fertilizers and sprayed three times with 40 ppm of either GA3 or PP333 showed the highest values of inulin content in their edible parts (receptacles).7 Receptacles possessed the minimum status of fibers werethose of artichoke plants fertilized with the highest used NPK level and

sprayed three times with 10 ppm GA3 orGenerally, it may be concluded that using either medium (60 kg N+32kg P2O5 + 48kg K20/fad.) or the highest used fertilizer level (75 kg N+48kg P2O5 + 72kg K20/fad.) in combination with foliar sprays three times after 60, 80, 100 days from planting with either GA3 or PP333 at 20 or 40 ppm for each may be recommended. Such treatments are advisable as the highest total and early yield as well as flower heads of best physical and chemical properties of their receptacles could be obta