

***UTILIZATION OF COOPERATION BETWEEN AGRICULTURAL TRAILS
AND TECHNOLOGICAL EVALUATION OF ARTICHOKE TO PREPARE
BISCUITS FOR DIABETICS***

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ABSTRACT:

Globe artichoke is one of the important vegetable crops which is considered a great economic and healthy benefits. So, this study was carried out in two parts on artichoke plant (French cultivar). The first part concerned with the cultivation of artichoke and their effects of different levels of potassium mineral fertilizer ;i.e. (0, 30, 60, 90 and 120 kg K₂O/fed.) with and without biofertilizer namely potassiumag at a level of 4 L/fed. on the productivity of artichoke heads, quality and chemical composition including inulin and total phenolics compounds. The second part was related to technological processes for using artichoke powder in preparing special blends of anise biscuits for diabetics and evaluating its sensory characteristics, beside its effect on blood glucose serum level. Results showed that, fertilizing artichoke with 60kg K₂O plus 4L potassiumag/fed. led to increase the productivity of artichoke heads than potassium mineral fertilizer alone and improve most physical characteristics of heads and receptacles. On the other hand, artichoke fertilized with 60 kg K₂O + 4L potassiumag /fed. was the best treatment where it contained the highest contents of total carbohydrates and inulin than other treatments which also, was used for preparing artichoke powder after treating with 0.5% sodium metabisulphite before drying process to minimize the browning of artichoke powder. Biscuit blends fortified by 10 and 15% artichoke powder and prepared for diabetics led to improve sensory properties and chemical composition especially for contents of carbohydrates and fibers as well as, its positive effect on blood glucose level. So, it could be recommended that, eating artichoke head are healthy benefits either in a fresh state or in a powder form to prepare functional biscuits for diabetics, and also, encourage the farmers to cultivate more areas in artichoke for export and healthy using.

Key words: Artichoke, *Cynara scolymus* L, K-fertilizers, K-biofertilizers, inulin, blood glucose, diabetic.

***EFFECT OF ORGANIC COMPOST AND MINERAL N FERTILIZERS
APPLIED INDIVIDUALLY OR IN DIFFERENT COMBINATION RATES
ALONG WITH SEAWEED EXTRACT ON VEGETATIVE GROWTH, TUBER
DEVELOPMENT, DRY WEIGHT AND GROWTH ANALYSIS OF POTATO
PLANTS.***

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ABSTRACT:

This investigation was carried out at the Experimental Farm of the Fac. Agric., Minoufiya Univ., Shibin El-Kom, Egypt during the summer seasons of 2008 and 2009 to study the effect of two organic composts e.g. zoological and botanical ones and mineral fertilizers at a rate of 120 kg N/fed., individually or in different combination rates along with or without seaweed extract on vegetative growth, tuber development, dry weight production and growth attributes. A complete randomized block design with 3 replicates was used. It is important to point out that the application of zoological compost in different combination rates with inorganic fertilizer was much better than applying of botanical one and the using of seaweed extract with them in tries combinations were the most effective treatments comparing with other ones. The obtained results indicated that fertilization with any of the used fertilizers either alone or in mixture forms with or without foliar spray with seaweed extract significantly augmented vegetative growth, tuber development, dry weight of different plant organs and plant growth analysis. Whereas the application of fertilizer mixture of 25 % of mineral nitrogen + 75 % zoological compost + foliar spray with seaweed extract was the most effective treatment followed by that of 50 % of mineral nitrogen + 50 % zoological compost + foliar spray with seaweed extract then 50 % of mineral nitrogen + 50 % botanical compost + foliar spray with seaweed extract, respectively.

Key words: Potato, mineral N-fertilizer, zoological-, botanical compost, seaweed extract, plant growth, tuber d

EFFECT OF STORAGE ON THE OIL CHARACTERISTICS OF SOME SNACK FOODS

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ABSTRACT:

This study was conducted to evaluate the safety and quality of different types of marketable snack products, potato chips with different flavors (chicken, kebab, chili, and cheese) as well as extruded corn snacks with different flavors (ketchup, cheese, and chili), produced by three different companies. Chemical characteristics of oil (the values of acid, peroxide and thiobarbituric acid) were carried out at the beginning of experiments and during storage at ambient temperature $25 \pm 2^\circ\text{C}$ for different periods (6 months for potato chips and 3 months for corn snacks). Corn snacks with ketchup flavor from company 3 had the highest ($p \leq 0.05$) acid, peroxide and TBA values (0.42 mg KOH/100 gm oil, 0.45 meq O₂/kg oil and 0.55 mg malonaldehyde / kg sample, respectively), while the highest ($p \leq 0.05$) values of peroxide and TBA were noticed in potato chips with cheese flavor (0.79 meq O₂/kg oil and 0.41 mg malonaldehyde / kg sample). Acid, peroxide and TBA values were increased significantly ($p \leq 0.05$) by increasing storage periods in all snack samples, the highest value were observed by the end of storage (3 and 6 months). Acid value of the stored potato chips ranged from 0.86 to 5.21 mg KOH/100 gm oil, while peroxide value was ranged from 4.47 to 27.75 meq O₂/kg oil, whereas TBA value was ranged from 0.47 to 1.39 mg malonaldehyde / kg sample. Highest ($p \leq 0.05$) acid and TBA values were noticed in corn snacks with ketchup flavor (3.16 mg KOH/100 gm oil and 1.27 mg malonaldehyde / kg sample), while highest value of peroxide value were noticed in corn snacks with chili flavor (18.94 meq O₂/kg oil). Although the importance of oil characteristics of snack foods on human health, there is no allowed limits found in the Egyptian standard specifications (ESS) of corn snacks (1525/2005) or ESS of potato chips (1629/2005). Meanwhile, the results of this work indicated that acid and peroxide values in all samples were up to the limits recommended in the Egyptian standard specifications of oil (ESS 2142/2005) by the end of storage period. Meanwhile, TBA value not mentioned in neither ESS of snacks nor ESS of oils so that we can not decide about it.

Key words: potatoes chips, corn snacks, acid value, peroxide value, storage period, TBA.

