# Biochemical studies on some horticulturl crops by products

## Ahmed Abdel-aziz Salman Mohamed?

This study was conducted on some horticultural crops by products such as apricot and mango kernel seeds to evaluate their chemical and biological quality as alternative source of protein material. Chemical composition of apricot and mango kernel seeds obtained from Kaha Company for Food Preservation, Kaha, Kalubyia Governorate, Egypt.Physicochemical properties, fatty acids, of apricot and mango kernel seeds oil were identified and determined by gas liquid chromatography. Elimination of anti-nutritional factors from apricot and mango kernel seeds by-products were curried out. Apricot and mango kernel seeds are studied. Beside nutritional evaluation of apricot and mango kernel seeds meal and their protein isolate were curried. The obtained results could be summarized as follows:1. Chemical composition of apricot and mango kernel seeds:The chemical composition of apricot and mango kernel seeds were determined, data show that, apricot and mango kernel seeds contained 8.9-9.4% moisture, total lipid 48.15-10.31%. Crude protein 25.14-7.23%, total carbohydrates 16.3-73.38%, crude fiber 2.45-2.95% and ash content 5.51-5.13%, respectively. While defatted meal had 44.1-13.75% crude protein, Total carbohydrate 28.2-75.67%. Crude fiber 4.5-5.21% and ash content was found to be 4.1-3.65%for defatted mealrespectively.Total cyanogenic in apricot and mango kernel seeds and meal contained 0.18-0.05, 0.25-0.09%, respectively. Total phenolic compounds content of apricot and mango kernel seeds and defatted flour were 0.2-6.2, 0.42-4.1 %, respectively. Phytate content was found to be 0.14-1.95, 0.25-2.9% for apricot and mango kernel seeds and defatted meal, respectivelyTrypsin inhibitor in apricot and mango kernel seeds and defatted flour contained 0.00-4.9, 0.00-5.3%, respectivelySince, apricot and mango kernel seeds meal can beconsidered as a rich source for protein after removing anti-nutritional factors from the meal.2. Physicochemical properties and fatty acids of apricot and mango kernel seeds oils:a- from the data presented in this study, physical properties of apricot and mango kernel seeds oils could be noticed that refractive index of apricot and mango kernel seedsoil are 1.47139-1.4620, specific gravity were 0.9136-0.8980, respectivelyb- The chemical properties of apricot and mango kernelseeds oils as follow: Acid value were 1.1-4.1,saponification value were 190-192, peroxide value were0.3-2.9 and iodine value were 102-78, respectively.c- Gas liquid chromatography (GLC) was used fordetermining fatty acids of apricot and mango kernel seedsoils. The obtained results show that apricot and mangokernel seeds seed oil contains high amount of unsaturated fatty acid 96.11-86.31% of total fatty acids.3. Elimination of toxic compound of apricot and mangokernel seeds mealSeveral processes, including soaking in tap water, sulphite and heating treatment have been investigated for detoxification. The treatment with soaking in water and sulphitic ’caused agradual decline in all anti nutritional factors effective in removing 44-72% polyphenol, 16-40% phytic acid and 20-55% HCN and the treatment with soaking in water and heated gave the highest removal of polyphenols from kernel meals, while Soaking mango seed kernels in water and sulphite effective in removing 35-63% of polyphenol 41-60% trypsin inhibitor and22-47% phytic acid.4.Effect of pH on protein isolate from apricot and mangokernel seeds mealThe maximum apricot and mango kernel seed protein extraction was achieved at pH 10.0 and the percentage of extracted protein was 90.92% while at pH 4-5 (Isoelectric point)extracted protein reached its lowest value.5.Amino acids composition of apricot and mango kernelseedsGlutamic and aspartic acids are the most abundant amino acids in apricot and mango kernel protein (18.4-19.62%

and 11.3-9.21%) followed by argentine (8.6-7.84%); cystine andmethionine contents were found to be in minimum quantities 0.43-0.48% and 0.95-1.15% respectively. However, the total essential amino acids content were 30.82-33.86%, respectivel. Comparing to total amino acids. y 6. Chemical composition of biscuits producedIt was found that, ether extract, fiber and ash increased with increasing the different levels of mango seed kernels meal. While crude protein and total carbohydrates decreased with increasing the level of mango seed kernels or defatted apricrnseed kernels meals levels of7. Organoleptic evaluation of biscuits produced:The obtained data could be noticed that suppleinented with 5% mango seed kernels or defatted apricot seed kernels meals to soft wheat flour (72% extraction rate) produced biscuits with average grade of like very much for all the evaluated attributes without significant difference ($p>0.05$) compared to control. In spite of addition of mango seed kernels meal up to10% showed significant decrease ($p<0.05$) in some sensory attributes of biscuits, average grade of all quality attributes were greater than 7. This indicates that the produced biscuit with 10% defatted mango and apricot seed kernels has like moderatelquality grade. y