

## 4<sup>th</sup> International Conference on **Agriculture & Horticulture** July 13-15, 2015 Beijing, China

## Chemical characterization of sewage effluents repetitively used in irrigation arid region dry lands

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**S** ewage effluent samples were monthly collected during the period from January to July 2012 from the main canals of Konbera (Abu-Rawash site) and Zenine (El-Motamadia site) that are frequently used in irrigating different eaten raw field and horticulture crops. Nile water samples were periodically collected from El-Khanater El-Khayria as standard irrigation water. The chemical characterization of sewage effluent and Nile water samples included pH, conductivity, SAR, soluble cations as well as potential toxic elements (PTEs) using standard analytical methods. Results confirmed significant variations in these studied chemical parameters between the two studied sewage effluents. A significant increase in EC, pH and SAR values in both sewage effluents samples compared Nile water representing save levels for irrigation water according to FAO standards were noticed. The content of PTE's in both sewage effluentsshowed that the concentrations of Cd<sup>2+</sup>, Cu<sup>2+</sup>, Mn<sup>2+</sup> and in some months and those of Zn<sup>2+</sup> in certain months far exceeded the safe levels found in Nile water. Despite that the Doneen parameter that estimates water quality (Cl<sup>+</sup>+0.5 SO<sub>4</sub><sup>2</sup>) should not exceed 5 in irrigation water; both sewage effluent samples had values higher than the safe level. Special precautions and remediation biotechnologies should be considered to minimize health and environmental hazards for such waters.

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## Investigating the effects of a creamer versus skim milk powder in yoghurt production

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Y oghurt produced at Nyarungu Training Centre (a dairy company in Chitungwiza) has not been of much preference on the dairy market. One of the ingredients responsible for the quality of the yoghurt is the thickening agent used. The thickening agent used at Nyarungu training centre is skim milk powder. The study was undertaken to find out a better thickening agent between skim milk powder and a creamer. The creamer used in this study was cremora. Addition of 2.5% cremora milk powder and 2.5% skim milk powder was done to skimmed milk of 12.02% total solids after preheating. The yoghurt with cremora obtained higher sensory scores for mouthfeel, viscosity and taste. The final product of yoghurt with cremora contained 4.10% protein, 3.48% fat, 0.74% acidity and 12 colony forming units of yeast and molds. There was a strong positive linear relationship between the fat content and the mouthfeel scores for the yoghurt with cremora. The yoghurt cremora as a thickening agent had a better shelf life. The shelf life was better by a scale factor of 0.7.

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