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EFFECT OF PROCESSING OF MILK ON BHC RESIDUES

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ABSTRACT

Heating of milk reduced BHC in the range of 59.9 to 67.2 percent. In curd preparation, there is increase BHC residues (0.6 to 27.06 percent). In butter the increase was from 76.8 to 93.3 percent. And in ghee BHC increase was from 125.0 to [31.8 percent.

KEYWORDS: BHC, Effect, Residues.

INTRODUCTION

Pesticides have come in for severe criticism at various forums in the world and India is no exception, since, the publication of Rachel Carson's "Silent Spring" in 1962 with its emotional denunciation of chemical pesticides. Pesticides are an essential part of production technology that makes it possible for the farmers to meet the demands of our growing population. Without pesticides, crop pest would make monoculture impossible and this would also make scientific farming impracticable. Plant diseases and insect pests could spell disaster ram any given year, were it not for the protection of agriculture. It we do not use pesticides, it is estimated that crop losses would be high as 70-100 percent on an average and in some cases, pestdamage or competition would make is pointless even to plant the crop. Substartial gains from the use of pesticides in agriculture as well as public health programme have been acknowledge by all. Monitoring of DDT and BHC residues in various commodities was not undertaken in Kanpur district region previously. The present studies are aimed at a measuring the level of DDT and BHC in various environmental components like milk, water and okra by collecting the samples from seven districts of Kanpur region. Majority of these edible commodities are processed before consumption. The effect of processing like washing, heating, boiling/cooking was also studied in different commodities. it is hoped that monitoring will make aware about the extent of pesticides contamination and bioaccumulation in various commodities and the pesticide risk.

MATERIAL AND METHOD

DDT and BHC residues were estimates simultaneously on Hewlett-Packard Gas Chromatograph. 5840A. The glass column was conditioned for 48 hours with 60 ml/min nitrogen flow. In three weighing bottles little quantities of m,p': O,p' and p,p' - DDT taken separately and their weights were recorded. The weight was found to be 8.50, 10.50 and 12.25 mg of m,p, o,p' and p,p' -DDT respectively. These quantities were transferred to separate volumetric flasks. To these flasks 8.50, 10.50 and 12.25 ml petroleum ether was added. The flasks were stoppered and vigorously shaken. In this way 1000 ppm stock Be solution was prepared for each isomer (1 ug/ul).

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One ul from this stock solution of each of m,p', o,p' and p,p'-DDT was taken separately in one mi petroleum ether tubes. This gave the final concentration of lug/ul. One micro litre (Ina) each of this way injected in to column A, separately with the help of micro litre syringe, which gave identifiable peaks of m,p, o,p and p,p-DDT were prepared. These three were mixed together (lug/ul). One microlitre of this contained 1 mg of each of m,p ;o.p and p,p'- DDT isomers.

RESULT AND DISCUSSION

Initial BHC residue in the vegetables (Okra) range Is 3.212 ppm. When these vegetable (okra) was washed with tap water, there was reduction in the BHC residues in the range of 3d.1 percent. Bovine milk is either consumed directly or processed before heating/ boiling, curd preparation, butter/ ghee making.

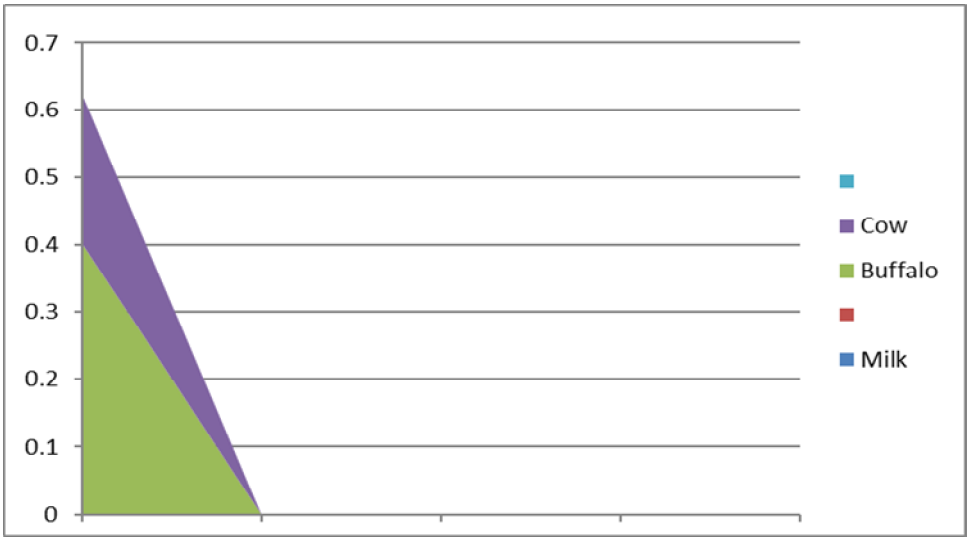
Similar results are also found by Bhatnagar, A. (1998), Broadley, R.H. (1984). Seasonal incidence and Parasitism of *Heliothis*Sp. (Lepidoptera: Pyralidae) larvae in South Queensland Sunflower, Diraviam, J. *et. al.* (1993), Lal, S.S. (1981), Mahto, Y. (1990), Mishra, B.A., *et. al.* (1992), M.M. H. Khan (2019). Effect of temperature and relative humidity on the population dynamics of brinjal and tomato infesting whitefly, Bemisiatabaci, Patel, C.C., and Koshiya, D.J. (1997), Pimpale, T.D. and Summanwar, A.S. (1983), Sekhon, B.S. and Singh, S. (1985). Effect of temperature, relative humidity and rainfall on the population build up of cotton jassid, Sethi, G.R., *et. al.* (1979), Singh, K.M. and Singh, R.N. (1977), Yumamura K, *et. al.* (2006) and Zhang S, *et. al.* (2014).

Table 1.The effects of these processing were studied and are presented in:

Milk	BHC residues(ppm)				
	Initial	After heating/ boiling	In curd	In butter	In ghee
Buffalo	0.402	0.132 (67.2)	0.513(27.6)	0.798(96.3)	0.932(131.8)
Cow	0.22	0.097 (55.9)	0.239(0.6)	0.387(76.8)	0.495(125.0)

- Figures in parenthesis indicated "% reduction
- Figures in Parenthesis indicated "o increase.

Heating of milk reduced BHC in the range of 55.4 to 67.2 percent. In curd preparation, there is increase BHC residues (0.6 to 27.6 percent). In butter the increase was from 76.8 to 9.0 percent. ARS in ghee BHC increase was from 125.0 to 131.8 percent



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