

Estimation of Chemical Pesticide in Fruits and Vegetables

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Abstract : Experiment were conducted to estimate quantity of pesticide residues in Kharbuja , Pineapple, Turai and ladyfinger. In the present case samples were tested and in all these samples malathion quantity was ranging from 0.02 to 0.08 mg/kg . Besides this toxicant Monocrotophos, Endosulfan and Chlorpyrifos were also found . Malathion effect the nervous system causing nausea, diarrhea, cramps etc. Endosulfan and monocrotophos are hazardous products affecting CNS which lead to slurred speech , weakness, fatigue, body paralysis , cancer, vomiting, nausea etc. Minute quantity of pesticides seems to be very risky for our health. Pesticide should be used in a level given by Government norms and must not be use in excess quantity. Investigator tried to aware people about proper use of pesticides through the study done.

Keywords: Chromatography, Hazardous, Investigation, Neuron , Slurred



INTRODUCTION : Pesticide is a substance used to kill and repel pests. These are used to protect plant and various food products from pests. These include herbicides , fungicides, etc. Two centuries ago there was no scientific bases for plant production . Sumerians was first selective insecticide found to kill broad leaf weeds . The pesticides are harmful chemicals that are used to protect various food products from damage through pests. For every pesticide there should be a tolerable limit and if this limit exceed then it shows contagious effects on human health. Even pesticide spray in small quantity are absorbed in soil or dissolve in water. These may often seep into ground water which we consume. Lack of education is one of the main reason. Farmers do not practice pesticide safe applications and lead to skin contact , inhalation and even ingestion. Pesticide once entered in our food chain remains for years and cannot be destroyed easily. In this study main objective of the investigator was to estimate the quantity of organophosphate, organ chlorine, carbonates and inorganic pesticides . Importance of the study is to aware people specially farmers about the proper use of pesticides in tolerable limit.

Material and Method

All the samples were collected from Kota district and technique of pesticide analysis was gas chromatography which is used for spraying and analyzing the compounds. It is similar to column chromatography with mass detector used.

Samples - Sample of pineapple (1kg), Ridge Gourd (1kg), lady-finger (1kg), kharbuja (1kg), A gas chromatograph which consist of carrier gas, column, column temperature detector etc.

Result and Discussion

After the complete study the investigator found that the range of malathion was some what higher in food samples collected from Kota district. Malathion percentage in kharbuja is 0.05mg/Kg, while it was 0.08mg/Kg in pineapple and 0.04mg/Kg in lady-finger. Along with this endosulfan quantity wasblittle bit higher in Ridge Gourd is 0.03mg/Kg. Chloropyrifos quantity also ranges from 0.04 – 0.06mg/Kg.

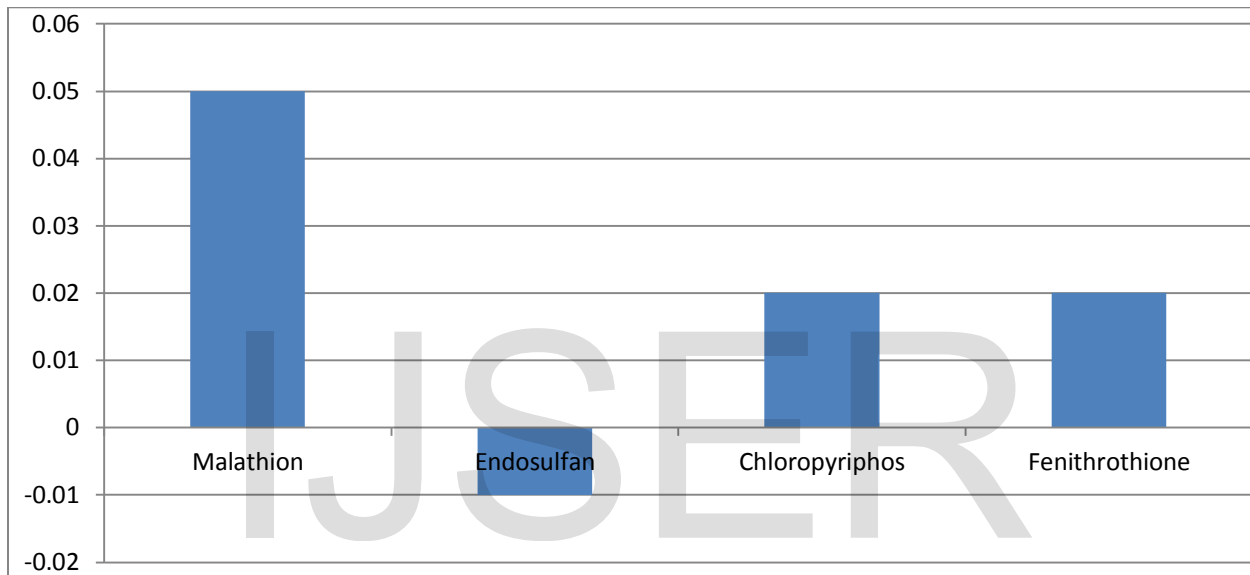
Gil Garcia et al in 1997 used a liquid chromatography method and detect methomyl in tomatoes and green beans grown in green house. Determination limit was range from 0.03mg/Kg to 0.01mg/Kg.

S. No	Sample	Malathion mg/Kg	Endosulfan mg/kg	Chlorpyrifos mg/kg	Fenitrothione mg/Kg	Monocrotopus mg/Kg	Fenithion mg/Kg
1	Kharbuja	0.05	0.01	0.02	0.02	0.02	0.02
2	Ridge Gourd	0.01	0.03	0.01	0.02	0.02	0.02
3	Pineapple	0.08	0.01	0.04	0.02	0.02	0.02

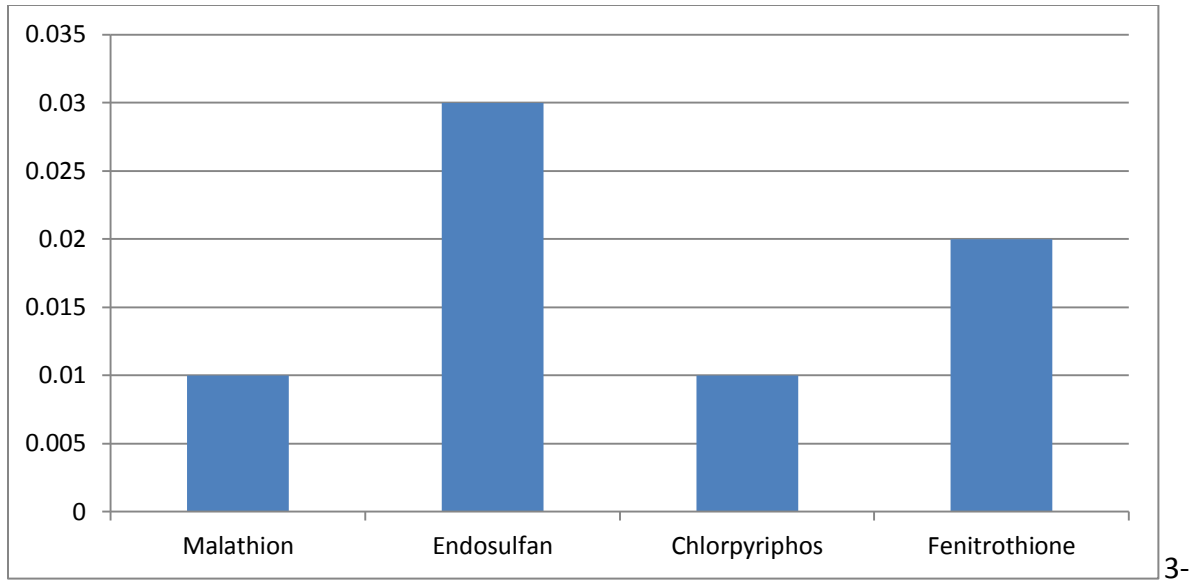
4	Ladyfinger	0.04	0.01	0.06	0.02	0.02	0.02
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Result will be well explained with the help of graphs

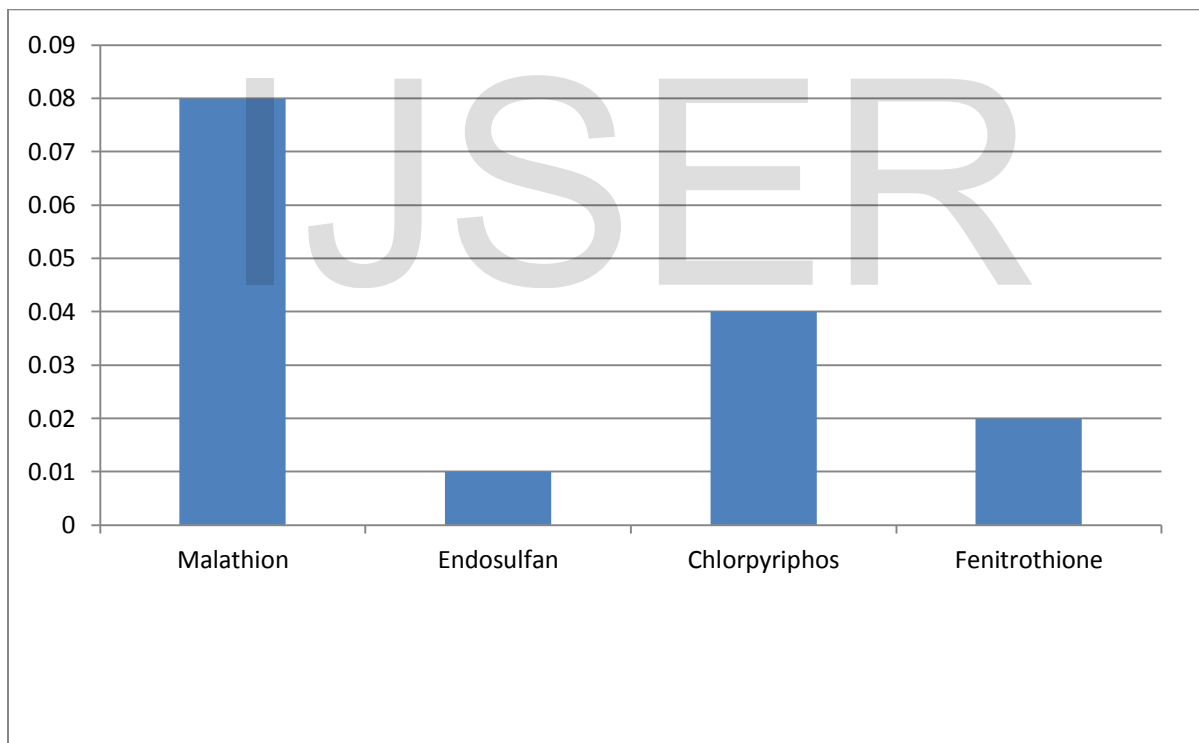
1-Residue detected in kharbuja sample (1kg) are shown below



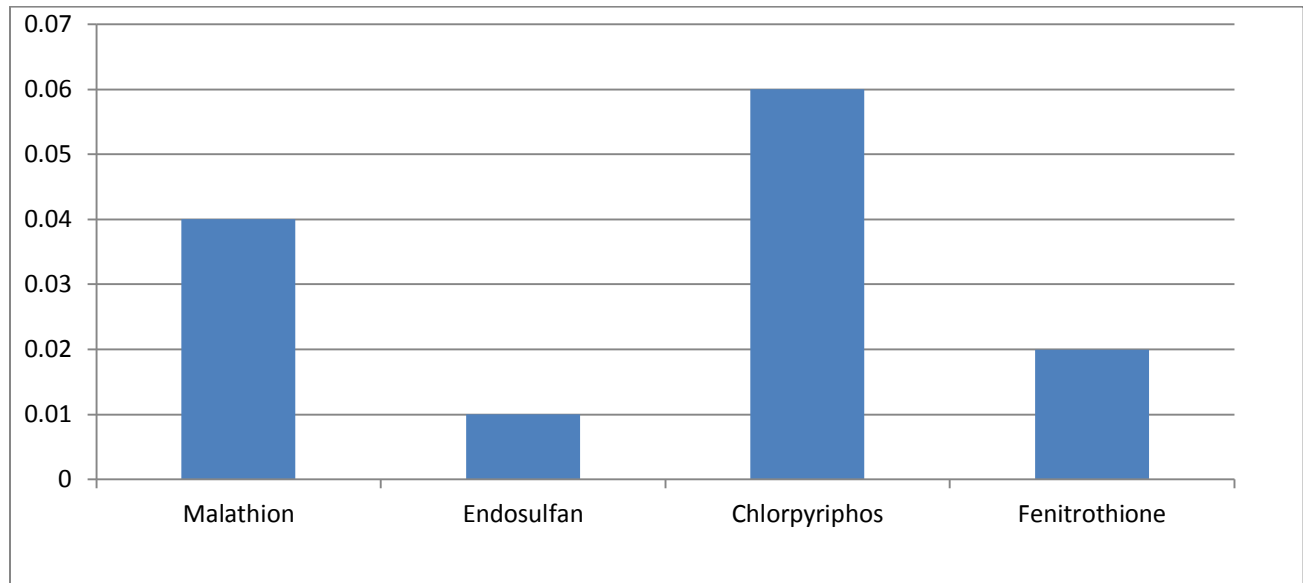
2- Residues detected in Ridge Gourd are shown below



Residues detected in pineapple are shown below



4- Residues detected in Lady-finger are shown below



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