



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## REVIEW OF PESTICIDE RESIDUE PRESENT IN VEGGIES AND FRUITS

<sup>1</sup>Prof. Annasaheb Mahavir Chougule, <sup>2</sup>Prof. Vishal Tanaji Patil

<sup>1</sup>Assistant Professor, <sup>2</sup>Assistant Professor

<sup>1&2</sup>Miraj Mahavidyalaya, Miraj, Dist- Sangli, Maharashtra, India

**Abstract:** Rise in the people of India, results in greater need for food along with decline in land for farming. Hence to fulfil the increased demand, food is adulterated to obtain additional volume simply speaking time period. Additionally, pesticides in plants are utilizing above the optimum this is certainly legal limitation by farmers to achieve more profit in lower time. Although pesticides tend to be highly effective on insects however they can have a home in a host. On the list of course of organophosphate pesticides, chlorpyrifos is trusted in veggies. Chlorpyrifos has actually toxic effects on the human body particularly on brain and system this is certainly nervous.

Do-it-yourself bio-pesticides are prepared by family unit members using local resources without having any study that is scientific analysis. It will always be early honest that is aged by naturally. Homemade bio-pesticides are often environment that is friendly safe, low-cost or cost free locally available sources utilization system through interesting family labor. The knowing that is common home made bio-pesticides and natural pest administration had been really good.

**Index Terms - Pesticide residue, veggie examples, fruit examples, bio-chemicals, Bio-pesticides**

**Stream- Computer Science and Multidisciplinary Stremms**

### I. INTRODUCTION

The aim of this section is explanation of the presence of pesticide deposits in fruits & vegetables, mainly how they are introduced, dissipated, degraded, affected by meals techniques being processing their danger assessment.

Fruits & vegetables are very important the different parts of the diet this is certainly real human they provide Essential nutrients that is necessary for all of the responses happening in your body. A high consumption of vegetables & fruits (five or even more portions per) has been promoted not just day to avoid consequences due to vitamin-deficiency additionally to lessen the occurrence of significant conditions such as for example cancer, cardiovascular conditions and obesity. Like other crops, fresh fruits and Vegetables tend to be assaulted by insects and diseases during storage and manufacturing resulting in damages that reduce steadily the high quality and the yield. To be able to identify the loss and maintain the high quality of fruits & vegetables harvest, pesticides are employed along with other pest management practices during cropping to destroy pests and diseases which can be counter. The usage of pesticides has actually increased simply because they have actually quick activity, decrease toxins made by food infecting organisms and tend to be less labor intensive than many other controls this is certainly pest. But, the employment of pesticides during production usually causes the current presence of pesticide residues in vegetables and fruit after harvest.

The presence of hazardous pesticide residues is a major issue for buyers because pesticides are known

to possess prospective results being harmful other non-targeted organisms than bugs and diseases.

The most important issues are their poisonous effects such interfering using the systems which can be reproductive And foetal development along with their ability to cause asthma and cancer(Gilden et al,2010). A few of the pesticides are persistent and therefore stay in the actual body causing very long term exposure. The issue has resulted in governments starting systems which can be monitoring order to assess the safety scenario and make informed decisions when legislation that is moving.

**II. DAY BY DAY CANCER PATIENTS ARE INCREASING:**

“Pesticides will be the noxious substances circulated purposely into the environment to eliminate items that tend to be residing. Substances in this group are made to eliminate weeds (herbicides), bugs (insecticides), fungus (fungicides), rodents (rodenticides), and others”. The use of these pesticides are distributed everywhere in the globe, ideally agricultural areas, domiciles, areas, schools, structures, woodlands, and roadways. It is very important that the accessibility to these chemical substances are available in the air this is certainly breathed kitchen sink, earth, woodlots and airplane sprayed facilities. Also they might be found in the meals and drinks commonly used.

Now something about our, Kolhapur has changed into a Cancerpur. In Shirol and Karveer taluka there are more than 18000 cancer patients. Land and water have arsenal contents. It is as a result of arsenal in land and liquid. It get utilized in fruit and veggies and sugarcane. As well as it fertilizer is used abundantly with substance spray.

Cancer instances and deaths in Maharashtra went up by 11,306 and 5,727, correspondingly — a collective enhance of approximately 8% — in past times three years, a survey this is certainly recent. The info by the National Centre for Disease Informatics and Research-National Cancer Registry Programme (NCDIR-NCRP) ended up being recently presented at that correct amount of time in the Lok Sabha by Ashwini Kumar Choubey, minister of condition for health insurance and family members welfare.

Cancer Statistics in India (according to cancerindia.org)

- Approximate overall count of people alive with the disease: over 2.25 million
- On a yearly basis, brand new cancer patients: Over 11,57,294 lakh
- Cancer-related deaths: 7,84,821

Chance of present for the disease prior to the age of 75 many years

Male: 9.81%

Female: 9.42%

Total deaths due to cancer in 2018

- Total: 7,84,821
- Men:4,13,519

Women: 3,71,302

Risk of dying from disease prior to the age 75 years is 7.34% in men and 6.28% in females.

Cancers of oral cavity and lungs account for over 25% of cancer deaths in males and cancer of breast and oral cavity account for 25% cancers in females .

The utmost effective five cancers in both women and men take into account 47.2% of most cancers; these types of cancer may be avoided, screened for and/or detected early and treated at an phase this is certainly early. This can significantly lower the death price from the types of cancer.

	<b>MEN</b>	<b>WOMEN</b>
1	LIP,ORAL CAVITY	BREAST
2	LUNG	LIP, ORAL
3	STOMACH	CERVIX
4	COLORECTAL	LUNG
5	ESOPHAGUS	GASTRIC

Depending on the suggestion of WHO, there ought to be at the least 30% vegetables & fruits within our diet this is certainly daily on the human body body weight of the individual. Veggies are the source that is significant of nutrients. But it is not heartening to know that rather than satisfying the requirements being health

These fruits and vegetables carry pesticide residue, and hurt the continuous wellness of the customers. Main reasons of choosing the pesticide deposits during these foodstuffs could be due to providing shiny and look this is certainly fresh great color into the crop. This contributes to use of artificial chemical compounds beyond the limitations being safe.

For collection and study of information we are using data cleansing process and BI resources (Business Intelligence tools) for data gathering and we are organizing a well furnished app and web pages for our farmers and consumers. And this application and internet site when possible we're donating to Maharashtra Government to improvement this is certainly additional improvement and also to service to farmers.

### III. SOME DANGEROUS CHEMICAL PESTICIDES USED:

Many reports have analyzed the ramifications of pesticide exposure in the risk of cancer tumors. Organizations have already been discovered with: leukemia, lymphoma, brain, kidney, breast, prostate, pancreas, liver, lung, and skin types of cancer. This increased risk occurs with both domestic and exposures which can be occupational. Increased rates of cancer have been discovered among farm workers just who apply these chemical substances. A mother's occupational experience of pesticides during maternity is connected with increases in her own kid's risk of leukemia, Wilms' cyst, and mind disease. Experience of insecticides inside the real house and herbicides outside is involving bloodstream cancers in kids.

1. **Endosulfan**- Endosulfan is an organochlorine that is off-patent and acaricide this is certainly being eliminated globally. The two isomers, exo and endo, are known popularly when I and II. Endosulfan sulfate is really a product of oxidation containing one O that is additional atom into the S atom. Endosulfan turned into a highly questionable agrichemical.

Endosulfan patient –



2. **Dichlorodiphenyltrichloroethane** - commonly known as DDT, is just a colorless, tasteless, and crystalline this is certainly very nearly odorless element, an organochlorine. It absolutely was initially developed as an insecticide, then it became infamous because of its effects that are environmental. DDT was synthesized in 1874 by the Austrian chemist Othmar Zeidler. DDT's insecticidal action was discovered because of the chemist that is swiss Hermann Müller in 1939. DDT ended up being found in the one half that is second of War II to regulate malaria and typhus among civilians and troops. Müller ended up being granted the Nobel Prize in Physiology or Medicine in 1948 "for his finding of the performance that is a lot of as being a contact poison against a few arthropods".



Alzheimer's disease patient

3. **Endrin-** Endrin is an organochloride with all the formula this is certainly chemical that was very first produced in 1950 by Shell and Velsicol Chemical Corporation. It was primarily used being an insecticide utilized as an insecticide on crops such as cotton fiber, sugarcane, rice, grains and whole grain. It is also used in orchards to regulate animals which can be small such as mice and voles, and to pull grasshoppers from recreational land. The mixture became infamous being a persistent pollutant this is certainly organic that is why its prohibited in many countries.

4. **Chlorpyrifos-** The body is replacing the depleted enzymes into the nervous system so it can function generally again during this time period. Contact with lower amounts of chlorpyrifos could cause nostrils this is certainly runny rips, and increased saliva or drooling. Men and women may sweat, and develop hassle, sickness, and faintness. It mainly tied to children's health.



5. **Diazino-** Diazinon has been used on lawns, gardens, agricultural plants and livestock as an insecticide or nematocide (for worms). It's triggered nausea, dizziness, burning sensations, headaches, blurry visions, stomach and muscle mass cramps, twitching, diarrhoea, aching bones, disorientation and an failure to concentrate. Then demise if you have a significant spill, this chemical could cause respiratory paralysis and. As much as 18 million weight of diazinon were utilized yearly in the United States until it had been prohibited in 2000 december. In 2000, it absolutely was the reason this is certainly leading of reactions to pesticides and is still being used to regulate fire ants in California. Initially it had been eliminated, restricted for use or "banned" in homes. This doesn't mean use had to be stopped. It can be used for as long it stockpiled while you have actually. Retail sale of diazinon services and products for interior uses had been permitted until about 2002 december. Fundamentally, it had been allowed to be actually prohibited by 2004.

**IV. NATURAL OR ORGANIC TECHNIQUES FOR VEGETABLES AND FRUITS:**

Few things we have to follow:

**a. Soil requirement and management:**

That is first and very thing this is certainly essential organic agriculture. The soil is important or extremely credential this is certainly important agriculture. And its particular management is again the part this is certainly important. These days due to utilize that is optimum of the soil quality is decreasing. Straight proportionally the quality of meals can be decreasing.

The components that organic vegetable farming requires is Manures, Biofertilizers, Vermicompost, Nitrogen, Potassium, Phosphorus, Sulfur, Green Sand, Rock phosphate, Boron, Magnesium Sulfate, Iron Sulfate, Aluminum Sulfate, Guano, Bone Meal, Gluconate, Langbeinite, and manure that is green etc.

To generate the most wonderful soil for veggie, nonchemical veggie farmers vastly relays on compost or fertilizer this is certainly all-natural.

How to create compost this is certainly healthier

- a. Green manure helps you to get nitrogen through the atmosphere increases soil vitamins, stops erosion, furthermore it stores and holds the matters which can be natural vitamins in non-growth period.
- b. Crop rotation and manure this is certainly green also used to stop conditions & pests.
- c. The farmers also use pet manure which is a advantage this is certainly great the land.
- d. The deficiency is filled by the Potash of Potassium in the soil.
- e. The phosphorus plus the sand this is certainly green the merchandise of potassium which fills the space of mineral when it comes to earth.

**I. Organic or natural non-chemical agriculture method can grow any vegetables.**

But this can be a list of many profitable and preferred vegetables which can be natural.

- Leeks, Spinach, Greens, Swiss Chard, Herbs, Kale & Kohlrabi, Lettuce.
- Cabbage, Broccoli, Cauliflower.
- Beans, Peas, .
- Corn, Tomatoes, Zucchini, Cherry Tomatoes, Okra, Eggplant,
- Squash & Pumpkins, Watermelons, Cucumbers, Melons
- Radishes, Carrots, Rutabagas, Turnips & Parsnips, Beets.
- Onions, Potatoes .

**V. SOME OF ALTERNATIVES FOR CHEMICAL PESTICIDES:**

Pest	Preferred Alternatives
Insects	Plant flowers generate habitat for beneficial predatory insects. Tolerate a insects which can be few. Use insecticidal soaps, horticultural natural oils, neem oil, or microbial pesticides such as Bacillus thuringiensis (Bt).
Weeds	Mulch plants with straw or compost. Use weeding this is certainly mechanical flaming, corn gluten dinner (pre-emergent programs), or crucial natural oils (post-emergent applications).
Fungi	Plant varieties which are resistant. Ensure air that is good by correct spacing and pruning of plants. Eliminate and get rid of infected leaves. Use sulfur dust, potassium bicarbonate, garlic extract, or fungicides being microbial as Bacillus subtilis.
Nematodes	Plant varieties that are resistant. Rotate crops with mustard and grains being little wheat, rye, or oats. Use solarization, dry or fallowing that is clean.
Slugs/snails	Pick slugs or snails! that is (escargot at evening for a couple of nights within a row to create communities down. Use slug traps and iron phosphate baits.
Gophers/moles	Exclude animals being burrowing fencing underneath the soil range. Encourage predators that are normal as owls and gopher snakes. Use traps.

**VI. SOME HOMEMADE SOLUTIONS EXCEPT USE OF CHEMICAL PESTICIDES:**

We list down several of our favorite, all-natural, inexpensive, organic methods for making pesticides for the kitchen area yard.

**1. Neem Leaf**

Neem is definitely employed for its medicinal and properties that are cooking. It is also considered made use of as being a deterrent to insects. This natural herb this is certainly medicinal a bitter taste and strong odour that may maintain the insects from your flowers, but non-toxic to pets, wild birds, plants and people. It's best to spray oil that is neem young plants where it is stated is effective for around 22 times. Include some neem oil to a dash of liquid soap and some water this is certainly warm blend gradually. Add it up to a squirt usage and bottle immediately.

**2. Salt Spray**

Among the best & most methods which are natural make pesticides in the home is salt spray. In fact, not just does it help deter bugs, it will aid in increasing nourishment absorption like magnesium which help plants take up nutrients which are vital phosphorus and sulphur. Some sodium could be added by you in water and stir the clear answer really. Add it as a squirt sprinkle and bottle in the plants. You'll be able to sprinkle salt round the base of the flowers, reapplying each week.

**3. Onion And Garlic Spray**

Take about one clove of garlic plus one onion that is medium-sized add some water in their mind. Let it remain for a while before a tsp is added by you of cayenne pepper as well as a dash of fluid soap to your blend. Utilize it on the flowers to ensure no bug infests your produce.

**4. Eucalyptus Oil**

The smell that is strong of oil deters insects and insects. All you have to do is always to spray some oil in your plants to check out the outcomes. Make sure it really is utilized by you frequently.

**5. Chrysanthemum Flower Tea**

Chrysanthemum blossoms are said to hold a plant this is certainly powerful substance called pyrethrum. This compound is believed to damage the system this is certainly stressed of and pests. Everything you need to do is always to boil some blossoms which can be dried up to a cooking pan packed with water for about 20 moments. Strain, cool and add it into the squirt container. This option are stored as much as two months. In order to make it more efficient, you can include some oil that is neem it.

**VII. CONCLUSION:**

In the long run of my study i will say that organic management this is certainly pest can be an ecological friendly, low-cost, and healthier way of pest control system. Slowly farmers getting aware of this process and this management this is certainly pest are getting preferred time by time due to the useful features. Bio-pesticides really are a set of tools and applications that can help our farmer's transition away from highly toxic main-stream chemical pesticides into a period of certainly agriculture that is renewable.

**VIII. ACKNOWLEDGMENT**

First and foremost, I express my deep sense of gratitude to Parents, Teachers and Colleagues.

I owe debt of gratitude to the library of Miraj Mahavidyalaya, Miraj for providing me ready references on these topic.

I also express words of gratitude to my daughter Asmi and Wife Shruti.

**IX. REFERENCES**

- 1] Abadalla, E.F., Sammour, E.A., Abdullah, S.A. and El-Sayed, E. I., Persistence of some organophosphosphate deposits on bean and tomato flowers. Bull. Of Faculty of Agric. Uni. Cairo, Egypt. 44,2:456-476;1993.
- 2] Abhilash, P.C. Singh, V. Singh, N., Simplified detection of combined deposits of lindane and HCH isomers in vegetables, fruits, grain, pulses and plants using medicinal matrix solid-phase dispersion (MSPD) followed closely by GC-ECD., 113:267-271; 2009.
- 3] V.Lakshminarayana and P. K. Menon, Screening of Hyderabad marketplace samples of food things for organochlorine insecticides, Indian Journal of Plant Protection. 3(1975) 4-19.
- 4] R. W. Waites and C.H. Van Middlem, Residue scientific studies of toxaphene, malathion and parathion on some Florida veggies, Journal of Economic Entomology. 4 (1996) 590.
- 5] Ashutosh K, Srivastava. Purushottam Trivedi, M.K.Srivastava, M.Iohani, Laxman Prasad Srivastava, Monitoring of pesticide deposits in marketplace basket samples of vegetables from Lucknow town, india, Environ.Monit Assess.176(2001) 465-472.
- 6] T.S.S Dikshith, V K Mishra, D D Joshi, M.K. Srivastava and R B Raizada, Organochlorine insecticide residues in vegetables of Lucknow marketplace in india, Journal of Food technology and technology. 29 (1991) 335-337.
- 7] M.D. Dethle, V.D. Kale and S.D.Rane, Pesticide residues in/on farm gate types of vegetables, pest administration in horticultural ecosystem. 1 (1995) 49-53.
- 8] J.K. Dubey and A.Nath, Monitoring of pesticide deposits in temperate horticulture produce in india, Journal of Food technology and science. 32(1995) 138-140.
- 9] V.K.Madan, Beena kumari, R.V.Singh, Rakesh Kumar and T.S.Kathpal, Monitoring of pesticide from farmgate samples of vegetables in Haryana, Pesticide Research Journal. 8 (1996) 56-60.
- 10] B. M. Keikotlhaile, and P. Spanoghe Ghent University, Belgium, Pesticide deposits in vegetables and fruit; DOI: 10.5772/13440
- 11] Bert Beck Sustainable pest control in vegetables through enhanced applications of entomopathogenic nematodes; 91/414/EEC
- 12] [https://www.researchgate.net/publication/221910239\\_Pesticide\\_Residues\\_in\\_Fruits\\_and\\_Vegetables](https://www.researchgate.net/publication/221910239_Pesticide_Residues_in_Fruits_and_Vegetables)
- 13] [https://www.researchgate.net/publication/257312551\\_PhD\\_thesis\\_Sustainable\\_insect\\_control\\_in\\_vegetables\\_through\\_optimized\\_applications\\_of\\_entomopathogenic\\_nematodes](https://www.researchgate.net/publication/257312551_PhD_thesis_Sustainable_insect_control_in_vegetables_through_optimized_applications_of_entomopathogenic_nematodes)
- 14] [https://www.researchgate.net/publication/282532140\\_Pesticide\\_Use\\_Practices\\_and\\_Perceptions\\_of\\_Vegetable\\_Farmers\\_in\\_the\\_Cocoa\\_Belts\\_of\\_the\\_Ashanti\\_and\\_Western\\_Regions\\_of\\_Ghana](https://www.researchgate.net/publication/282532140_Pesticide_Use_Practices_and_Perceptions_of_Vegetable_Farmers_in_the_Cocoa_Belts_of_the_Ashanti_and_Western_Regions_of_Ghana)
- 15] [https://www.researchgate.net/publication/257312551\\_PhD\\_thesis\\_Sustainable\\_insect\\_control\\_in\\_vegetables\\_through\\_optimized\\_applications\\_of\\_entomopathogenic\\_nematodes](https://www.researchgate.net/publication/257312551_PhD_thesis_Sustainable_insect_control_in_vegetables_through_optimized_applications_of_entomopathogenic_nematodes)
- 16] <https://shodhganga.inflibnet.ac.in/handle/10603/122943>
- 17] <https://www.indiastat.com/health-data/16/diseases/77/cancer/17811/stats.aspx>
- 18] [https://www.researchgate.net/publication/286042190\\_Effects\\_of\\_Pesticides\\_on\\_Environment](https://www.researchgate.net/publication/286042190_Effects_of_Pesticides_on_Environment)
- 19] <https://www.nytimes.com/2019/07/18/climate/epa-chlorpyrifos-pesticide-ban.html>
- 20] [https://en.wikipedia.org/wiki/Health\\_effects\\_of\\_pesticides#Cancer](https://en.wikipedia.org/wiki/Health_effects_of_pesticides#Cancer)
- 21] [https://en.wikipedia.org/wiki/Pesticide\\_poisoning#Prevention](https://en.wikipedia.org/wiki/Pesticide_poisoning#Prevention)
- 22] <https://www.thenewsminute.com/article/unapproved-pesticides-kerala-vegetable-farms-may-cause-health-issues-says-study-110761>
- 23] <http://www.spices.res.in/pages/pesticides-formulations-banned-india>