Vol. 13, No. 2, Page No. 44–49 (2024)
Received : September, 2024, Accepted : October, 2024

Data Analysis of Extensive Use of Pesticides with Special Reference to Karanja Lad Market Maharashtra India

Sanjeev Kumar
Assistant Professor
SSSKR Innani College Karanja Lad
Department of Zoology, Maharashtra
skmprasaddevbhumi@gmail.com

Abstract

Present study depicts the extensive use of pesticides. In the study area every year the large numbers of farmer were infected or effected by the side effects of the pesticides in seasonal variation of crops. In this study the local market was surveyed and seasonal turnover of the pesticides were analysed over all more than 120 farmers or respondents were interviewed in terms of pesticides use and their side effects were noted down for study. Seasonal use of extensive pesticides imparts heavy amount of money in terms of health, side effects and crops maintenance. Indirectly these side effects were transferred into human health.

Key words : data analysis, pesticides, karanja Lad

Introduction

This current study based on survey of pesticide market in Karanja Lad, District Washim, Maharashtra. Every year a huge number of farmers in their region are regularly affected by extensive uses of pesticide in their agricultural practices in various seasons.

Pesticides are the toxic chemical substances that are released to environment to kill, prevent, control or repel the different types of harmful pest of agriculture. Pesticides serve as regulator that works by destroying the pests. Insects and pests are getting immune to the commercial pesticides due to over usage. Recently, pesticides have been developed which target multiple species. On the level of population, the effects of pesticides depend on the exposure and toxicity, as well as on different factors like life history, characteristics, timing of application, population structure and landscape structure[1, 2].

It is accepted that pesticides perform important role in agriculture. The increase in world's population urges to increase the crop quantity as demand or sustain. With the use of pesticides, it improves crop quantity as well as quality of food. About one third of agricultural products are produced using pesticides without the use of pesticides, there would be a great loss in the agriculture. Serious concerns about human health and biodiversity are raising due to overuse of pesticides[5,6].

The extensive use of pesticides has many adverse effects of human health and environment. With the overuse of pesticides has many, a decline in populations of different fish species is observed[3,4]. Long term pesticide exposure damages the immune system. Water pollution is on the rise due to these pesticides, even at low concentration.

Materials and Methods

Study area: - Karanja lad is a city and a municipal council in Washim district in the Indian state of Maharashtra. Karanja is located at $20^0 48' 33"$N $77^0 48' 33"$E. Karanja is normally hot but the wells usually have water around the year. Karanja receives an average of 33 inches of rainfall during monsoon season. The Adan River flows near Karanja city. There are 3 lakes situated in the city, the Rishi Talav the Sarang Talaw and the Chandra Talaw. Karanja market has a large number of pesticides shops.

Survey area: - The survey was conducted in Karanja lad market. The total number of pesticides shops are above 50 and there are near about 100 pesticides dealers in Karanja market. In present study 40 shops were surveyed. This survey was conducted in the form of personal interview of shop keepers in Karanja market.

Methodology

Local pesticides market was surveyed. Questionnaire survey had been conducted. Shopkeepers and local farmers were interviewed with open ended and close ended questions. Personal interview also taken in some aspects. Local market was personally observed regarding the complete estimation of pesticides use. Quantitatively analysis facilitated and observed to the frequency of use of pesticides in the area. Some personal interview for socio-medical analysis was also conducted in the area for side effects on human health in the area.

Result and Discussion

Table 1 List of Pests and crops

Sr. No	Crops	Pests	Scientific Name of Pests
1	Cotton	Jassids	Amrasca biguttula
		White fly	Bemisia tabaci
		Aphids	Aphis gossypii
		Thripds	Frankliniella schultzei
2	Soyabean	Stem fly	Melanogromyza sojae
		Girdle beetle	Oberea brevis
		Jassid	Apheliona maculosa
		White fly	Bemisis tabaci
3	Pigeon pea (Tur)	Gram pod borer	Helicoverpa armigera
		Pod fly	Melanogromyza obtuse
		Pod bug	Clavigralla scutellaris
		Plume moth	Aeaxelastis atomosa
4	Black gram (Urid)	Blister beetle	Mylabris phalerata
		Spotted pod borer	Maruca testulalis
		Spiny pod borer	Etiella zinckenella
		Blue butterfly	Lampides boeticus
5	Green Gram (Mung)	Grass blue butterfly	Euchrysopscnejus
		Bean aphids	Aphis craccivora
		Leaf hopper	Empoasca kerri
		Pod bugs	Ripotortus pedestris

Second Season crop-

Sr. No	Crops	Pests	Scientific Name
1	Wheat	Wheat thrips Brown mite American pod borer Shoot fly	Haplothrips tritici Petribia latens Helicoverpa armigera hubner Atherigona naqvii
2	Chicken pea	Pod borer Cut worm Bruchids Semilooper	Helicoverpa armigera Agrotis ipsilon Callosobruchus chinensis Autograph nigrisigna

Vegetables Pests-

Sr.No	Vegetables	Pests	Scientific Name
1	Cauliflower	Diamond back moth Cabbage head borer Cabbage aphids Painted bug Tobacco caterpillar	Plutella xylostella Hellula undalis Brevicoryne brassicae Bagrada bug(hilaris) Spodoptera litura
2	Green Chilli	Tobacco caterpillar Aphids Jassids Thrips Fruit borer	Spodoptera litura Aphidoidea Leaf hoppers Thrips (Thysanoptera) Helicoverpa armigera
3	Tomato	Tobacco caterpillar Whiteefly Fruit borer	Spodoptera litura Hemiptera Aleyrodidae Leucinodes orbonalis
4	Brinjal	Fruit borer Aphids Jassids	Leucinodesorbonalis Aphidoidea Leaf hopper orbonalis

Sr. No	Insecticide
1	Fatal Super-404 (Profenofos 40% + Cypermethrin 4% E.C.)
2	Target-505 (Chlorpyriphos 50% + Cypermethrin 5 % E.C)
3	Phendal 50% EC (Phenthoaate 50% EC)
4	Syngenta (Polytrin C 44 EC)
5	Coragen (Chlorantraniliprole 18.5% w/w SC)
6	Barazide

	(Novaluron 5.25% + Emamecrin Benzoate 0.9 w/w SC)
	Herbicides
1	Weed block (Imazethapyr 10% SL)
2	Sacrip (Metasulfurm Methyl 20 % WP)
	Fungicides
1	Dhanuka M-45 (Mancozeb 75%WP)
2	Rimzim (Carbendazim 50% WP)
3	Flight Plus (Hexaconazole 5% SC)
4	Phytozole (Propiconazole 25% EC)

Banned pesticide by government of Maharashtra

India has always been particular about the use of pesticide in agriculture. That's why the country has an Insecticides Act science 1968 which has undergone amendments as time passed. About 27 pesticides are likely to be banned by the central government.

The list of banned pesticides by central government.

● Hazardous	● Diuron
● Endosulfan	● Malathion
● Acephate	● Mancozeb
● Atrazine	● Methomyl
● Benfauracarb	● Oxyfluorfen
● Butachlor	● Pendimethalin
● Captan	● Quinalphos
● Carbendazim	● Sulfosufuron
● 2,4-D	● Thiodicarb
● Deltamethrin	● Thiophanatemethyl
● Dicofol	● Zineb
● Dimethoate	● Ziram
● Dinocap	

While the central is considering banning 27 pesticides in India, the Maharashtra Agricultural has urged the Central govt. to ban 6 agrochemicals.

Cypermethrin 4% EC, Fipronil 40% EC, Imidacloprid 40% EC, Acephate 75% SC and Difenthiron 50% WP, Monochrotophos 36% SL are banned by

Maharashtra government but still these are in vogue in the market.

Clinical Symptoms after use of Pesticides

Pesticides have improved the standard of human health by controlling vector-borne diseases, however, their long term and indiscriminate use has resulted in serious health effects.

Some people are more susceptible to the toxic effects of pesticide than others, such as infants, young children, agricultural farm workers and pesticide applicators. Pesticides enter the human body through ingestion, inhalation or penetration via skin.

But majority of people get effected via intake of food. Immediate effects of pesticide exposure include headache, stinging of the eyes and skin itching, appearance of rashes and blisters on the skin. Some acute effects of pesticide also include dizziness, diarrhoea, abdominal pain, nausea and vomiting, blurred vision, blindness and very rarely death. Chronic effects of pesticides are often lethal and may not appear even for years.

Table 2 List, Data of Respondent village wise of Karanja

Village	Respondent Male	Respondent Female	Respondent Child up to 14 yrs	Clinically Affected after uses	TOTAL
Ambola	12	10	8	YES	30
Belkhed	14	8	6	YES	28
Donad	22	11	10	YES	43
Dudhora	13	10	8	YES	31
Girda	11	12	6	YES	29
Hiwara	25	8	9	YES	42
Januna	14	14	5	YES	33
Kamargaon	28	10	11	YES	49
Loni	10	10	8	YES	28
Mokhad	19	12	8	YES	39
Naregaon	22	10	8	YES	40
Pimpalgaon	12	10	8	YES	30
Pimpri	8	12	8	YES	28
Rahati	17	10	6	YES	33
Sherpur	11	10	8	YES	29
Shirsoli	13	12	6	YES	31
Shinganpur	10	14	9	YES	33
Sohal	15	14	7	YES	36
Tarkheda	11	10	6	YES	27
Umarada	14	10	7	YES	31
Wadegaon	12	10	8	YES	30
Waghola	15	10	6	YES	31
Waki	8	10	8	YES	26
Yevta	12	10	9	YES	31

Zodga	11	10	6	YES	27
TOTAL	**359**	**267**	**189**		**815**

Over all 815 villagers were interviewed and found that all respondents were given their positive consent for medically effected after the use of pesticides in every seasons.

References

1. Penske, R.A., Kissel, J.C., LU C., Kalman, D.A. and Simcox, N.J. (2000). Biologically based pesticide dose estimates for children in anagricuItural community. Environment Health Perspect, 108:515–520.
2. Bonner, M.R., Lee, W.J., Sandler, D.P., Hoppin, J.A., Dosemeci, M., Alavanja, M.C. Occupational exposure to carbofuran and the incidence of cancer in the Agricultural Health Study. Environment Health Perspect, 113:285–289.
3. Hou, L., Lee, W.J., Rusiecki, J.A., Hoppin, J.A., Blair, M.R., Lubin In, Samanic C, Sandle,r D.P., Blair, A., Alavanja M. (2006). Cancer incidence, pendimethatin exposure among pesticide applicators: Epidemiology, 17(3):302–307.
4. Mahajan, R., Blair, A., Lynch, C.F., Schroeder, P., Hoppin, I.A. and Sandler, D.P. (2006). Alavanja M.C. Fonofos exposure and cancer incidence in the Agricultural Health Study. Environment Health Perspect, 114:1838–1842.
5. Purdue, M.P., Hoppin, J.A., Blair, A., Dosemeci, M., Alavanja, M.C. (2007). Occupational exposure to chlorinated insecticides and cancer incidence in the Agricultural Health Study. *International Journal of Cancer*, 120:642–649.
6. Van, Bemmel, Visvanathan, K., Beane, Freeman L., Coble, J., Hoppin, J.A., Alavanja M.C. (2008). S-ethyl-N,N-dipropylthiocarbarnate Exposure and Cancer incidence among male pesticide applicators in the Agricultural Health Study: A prospective cohort. Environment Health Perspect, 116:1–1167.