

A Study to understand the safety measures used by farmers in application of the insecticides and pesticides in and around Nandgaon Tehsil.

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Abstract:

Since the inception of Green revolution India has been trying its best to improve the production of agricultural goods. This has been largely achieved by using modern methods of agriculture practice along with indiscriminate use of pesticides and insecticides in the farm land. This study tries to understand the level of awareness among the farmers who are actually using these chemicals in their farmland and are getting directly affected.

Keywords: Pesticides, Insecticides, PPE, Carcinogenic, Farmers

Introduction:

India is an agriculture based economy almost 70 % of the indian population depend directly or indirectly on agriculture. The growing population and increasing demand of food supply demands for intensive agricultural practice and choice of high yielding crops. Along with this the demand of maintaining the yield is a great challenge and safe guarding the crop is another challenge. The crops are affected adversely by the attack of insects, Fungus, viruses and bacteria. In order to keep these enemies at the bay the farmers usually resort to chemical pesticides, Insecticides and fungicides. These chemicals are used on large scale by farmers all around the world and india too however in india the safety measure and precautionary warnings are completely ignored. The callus approach towards the handling of chemicals by farmers may cause health hazards and may also pollute the soil. This study deals with the chemicals used in agriculture by the farmers of Nandgaon Khandeshwar tehsil. The study covers an area of Nandgaon and adjoining villages to understand different pesticides, insecticides and fungicides used by farmers of the region. We also tried to understand the farmers perspective for using such chemicals

Material Method:

A survey was conducted among the farmers to understand the different chemicals they usually used in their farm lands. Also our survey tried to understand the farmer's awareness towards the safety procedures and precautionary measures.

Site of Survey:

Nandgaon kahndeshwar tehsil and adjoining villages were selected for random survey. We visited farmers from the Village namely Mokhad, Rajura, Shivni, Shirpur, yenas, etc.

Data Collection:

In all 50 farmers were questioned over the use of chemicals in agriculture. The questionnaire was specifically designed to understand the effectiveness of these chemicals and also the awareness of farmers towards the risk associated with the use of these chemicals. The question were in the form of closed question with yes/No answer type and multiple choice . The question were asked in local language "Marathi" however the question are translated here in English for the purpose of study and understanding of readers.

Sr.No	Question
1	What is your educational background
2	How many years you have been practicing agriculture
3	What crop you usually take in your farm
4	Do you use chemical pesticides and insecticides for your crops
5	Do you use Personnel Protection Equipment (PPE) while spraying
6	What Pesticides and insecticides you use
7	Are you aware of Biopesticides and Bio insecticides.
8	Do you use face mask while mixing the chemicals
9	Do you wash your hands regularly
10	Do you recently complained any respiratory, Skin , or other health issue
11	How many time in a single crop you use insecticides and pesticides
12	Does your local dealer makes you aware about the method of use and proportions of mix.
13	Does your Local dealer makes you aware about the precautionary measure to be used while spraying.
14	Do you read the safety warnings on the Boxes and bottles

Result and Discussion:

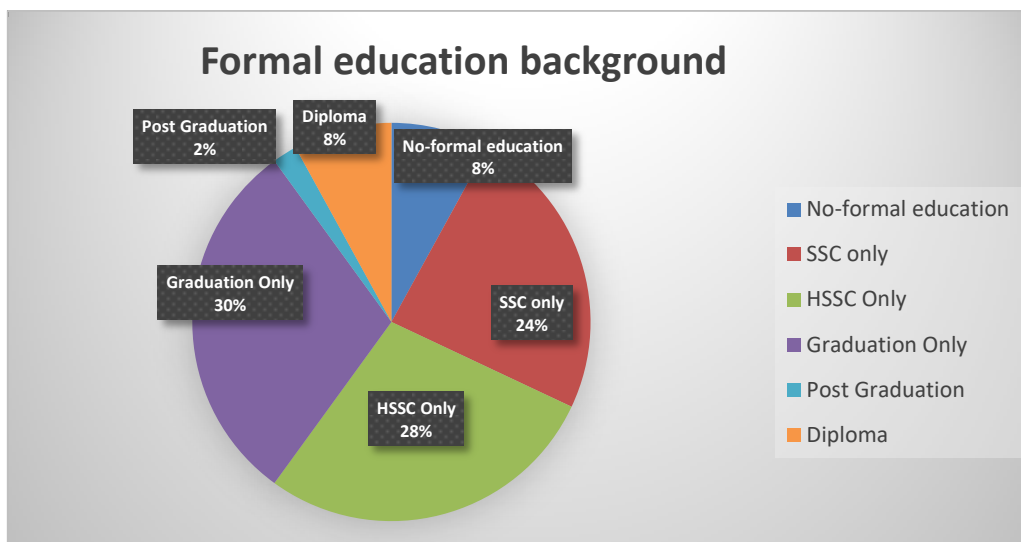
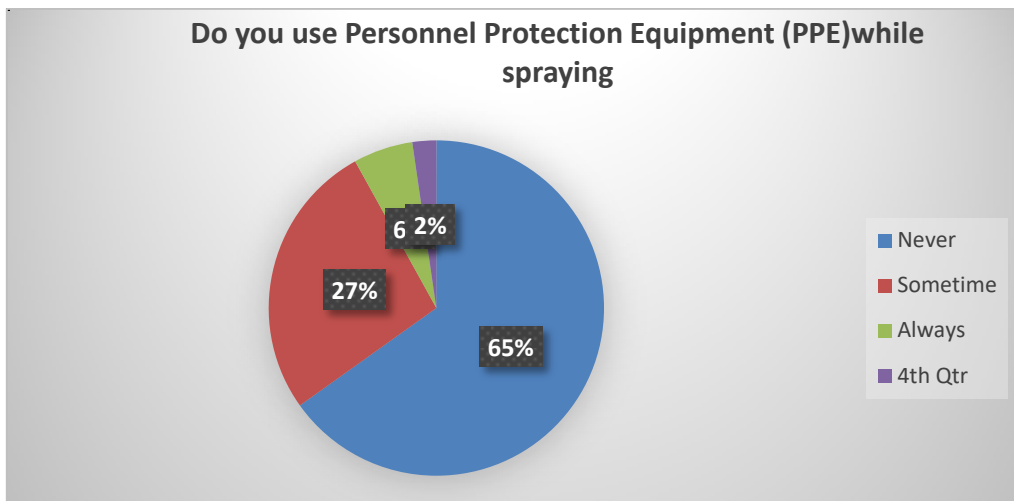
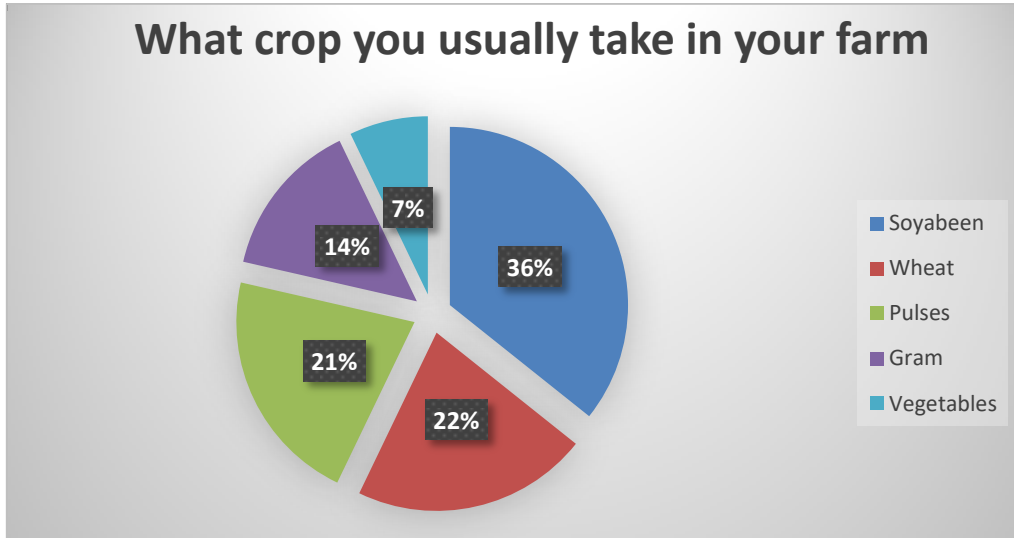
The survey revealed that the young farmers (35-40 age group) were found to graduate in different streams while few were 12th passed. Farmers of higher age group from 50-60 age were 10th pass or lower grades than 10th. This reveal that awareness towards the warning mentioned on the chemicals were some time ignored while many time the farmer was unable to understand the instruction mentioned. It was also found from the survey that Insecticides and pesticides were used on very large scale on suggestion of fellow farmer and sometime by Retailers. Following list of insecticides were found to be used more in an around the Nandgaon Tehsil Table1.

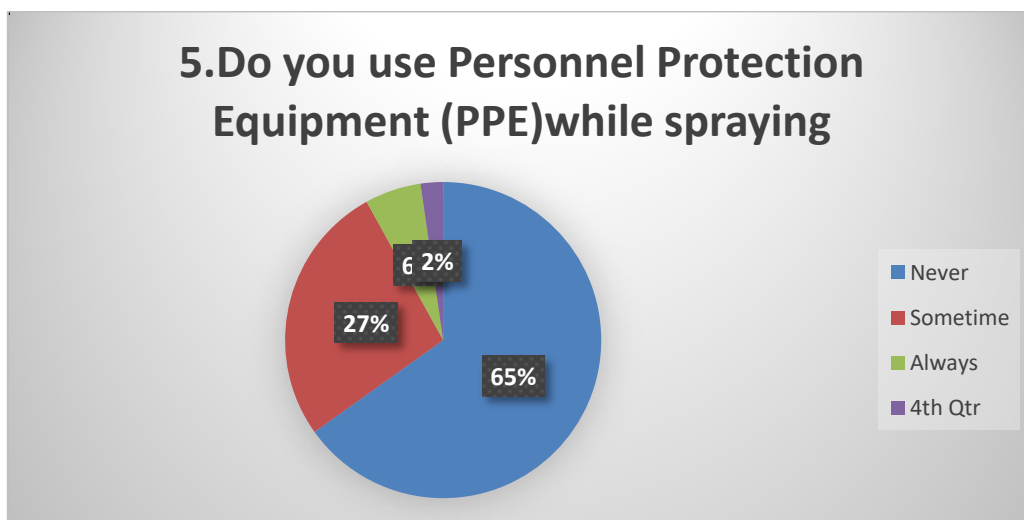
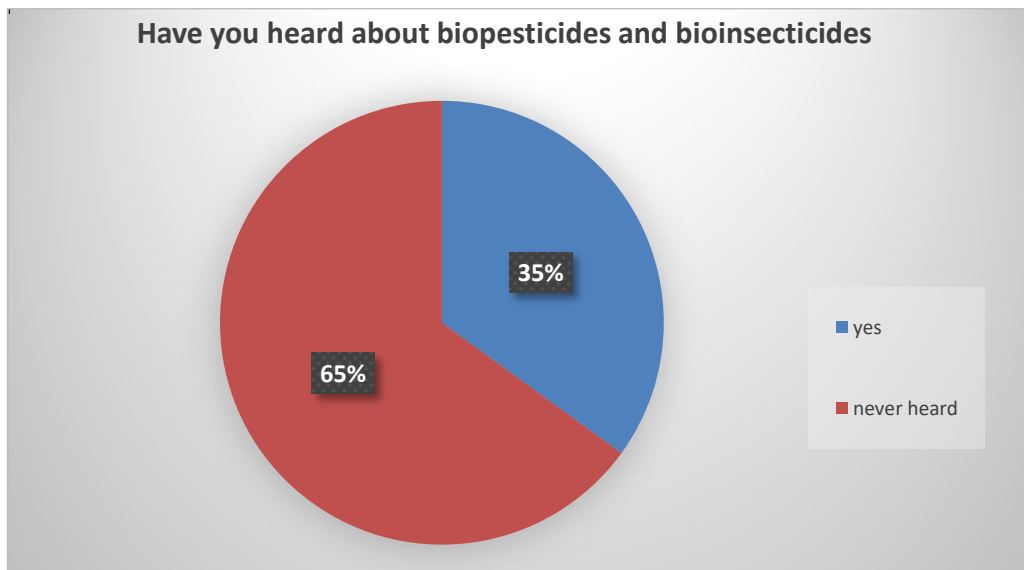
Table1: list of insecticides

Sr.No	Brand Name	Major Chemical	Application
1	Lancer, Missile, SWAL, Oratbene	Acephate 75% SP	Sucking and chewing insects of Cotton, sugarcane etc
2	Jashn (tata), Profex (Nagarjane), Curacrone (Syngenta), Celron (exel)	Profenophos 50% EC	Aphids, Jassids
3	Confider Super (bayer), Josh (plus), Protect (MLL)	Imidachloropride 30.5% SC	Termites etc
4	Larvin (bayer)	Thiodicarb 75% WP	Lepidopterans, larva and adults of moths etc
5	Solmon (bayer)	Imidachloroprid 19.81%+	Sucking and biting type insects
6	Icon (Syngenta),	Cybalothrine 10% WP	Jassids, Thrips, Leaf roller, Stem Boarer.

It was found that the farmers seldom use the PPE and follow no safety measure while it was also observed that during mixing of chemicals gloves were also not used. Large number of farmers were not aware of Biopesticides and Bio-insecticides⁴ The farmers knew very little about this and they also showed reluctance in

use of Biopesticides and bio insecticides because of their belief of slow effect⁵. Among the farmers interviewed in this study only farmers were able to read and understand the warning and precautionary measures mentioned on the boxes or bottles of pesticides and insecticides, thus the others who couldn't read the warning can be at high risk to get adversely exposed to the harmful chemicals⁶





Conclusion:

The use of chemical insecticides and pesticides is most popular and presently there is no cheaper alternative to these chemicals. The use of these chemicals without following the safety measures are hazardous and risky as this may result in dreadful diseases. Allergy reactions on hands, face, and neck are prominent symptoms¹. The ignorance of farmers towards PPE and other safety measures is a matter of great concern². This study hence helps us to understand the use and effects of chemical insecticides and pesticides on farmers of Nandgaon Tehsil. Prolonged exposure to these pesticides may malfunction organs at various levels. The liver-related issues of many farmers found in this study could be because of prolonged exposure to pesticides³, however, this is not a conclusive remark as the study only deals with a smaller set of farmers and also their other eating habits have not been considered in the study. A larger number of farmers could give a significant input, but this study clearly points out the ignorance and lack of knowledge of farmers against the hazardous effects of prolonged use of insecticides and pesticides without following the precautionary measures. Creating an awareness among such ignorant groups of farmers and introducing them to Biopesticides and insecticides could help to reduce the use of chemical pesticides and insecticides.

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