



THE IMPACT OF PESTICIDES ON THE HEALTH OF FARMERS: A STUDY IN KOLHAPUR AND SOLAPUR DISTRICT OF MAHARASHTRA (INDIA)

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ABSTRACT

The present study was carried out at the Kolhapur and Solapur districts of Maharashtra, India to understand the impact of commonly used pesticides on the health of farmers. The 100 farmers were interviewed from above two districts; using self-structured questionnaire. The main objectives behind this study were to understand the use, sources of information and level of awareness among farmers regarding use of pesticides and occurrence of various health problems due to lack of proper safety measures. The study revealed that the farmers often use pesticides ranging from high to extremely hazardous categories. In present investigation, it was also observed that farmers were suffered with various signs and symptoms of diseases or physiological disorders and the relative risk. Adoption of adequate protective measures in farmers were lacking while using pesticides during daily agricultural activities which may increased the health related problems in the farmers.

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INTRODUCTION

Agriculture is the back bone of the Indian economy and contributes 17.32% (2016-17) to the GDP, ensuring food security for more than 1.27 billion Indians. In the process of achieving the targeted food production, pesticides play an important role in Indian agriculture. Pesticides are agrochemicals which are one invaluable input in sustaining the agricultural production. Tulsi Bhardwaj and J.P. Sharma, (2013) concluded that due to green revolution the application of pesticides has been increased more than hundred times and causing tremendous loss to environment and human health. In agriculture there are high risk groups which are exposed to hazardous pesticides i.e. production workers, formulators, sprayers, mixers, loaders and agricultural farm workers. Many farmers from developing nations spray pesticides without knowing its actual requirement and its negative impacts on soil, crops and living organisms. Many farmers do not use any type of safety measures or personal protective equipments while spraying pesticides. Thus pesticides cause more harm to the health of the farmers. The harms may be headache, nausea, and skin and eye irritation and also cause major impact on the nervous system etc. The tremendous use of pesticides is carried out in all over world. In India, the is mainly due to lower level education of the population in rural areas, no awareness regarding uses of appropriate personal protective equipments during spraying and handling of pesticides and lack of awareness. According to the report of WHO (1990), there is no any segment of the population is

completely protected against exposure to pesticides and the potentially serious health effects, though a disproportionate burden, is shouldered by the people of developing countries and by high risk groups in each country. Pesticide poisoning is alone responsible for death and chronic illness about 1 million people per year. (Environews Forum, 1990).

Pesticides are also responsible for contamination of soil, water and other vegetation. Pesticides are not only kills to pests but also make adverse effect on host or other organisms like birds, fish as well as beneficial insects and non target plants.

METHODOLOGY

Present study is based on primary data which was collected through self-structured questionnaire and interviews of farmers. Total 100 respondents were selected by using simple random sampling method from Kolhapur and Solapur districts.

Questionnaire contained various questions about impact of pesticides on the health of the farmers. It also tries to studies health problems of farmers. It includes questions about availability of pesticides, sources of information, awareness about use of pesticides, various safety measures taken while mixing and spraying of pesticides and various health problems caused due to spraying of pesticides.

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RESULT AND DISCUSSION

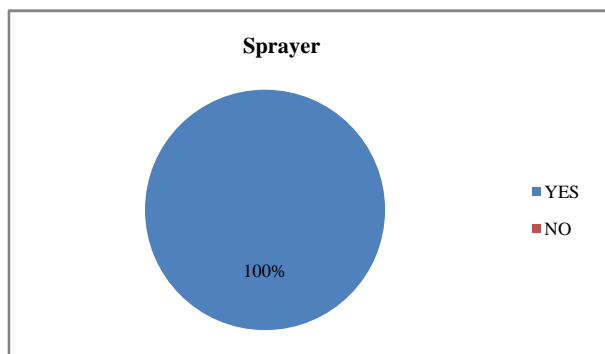


Fig 1 Sprayer

In investigation it was come to know that, the all respondent farmers used sprayer for spraying of pesticides.

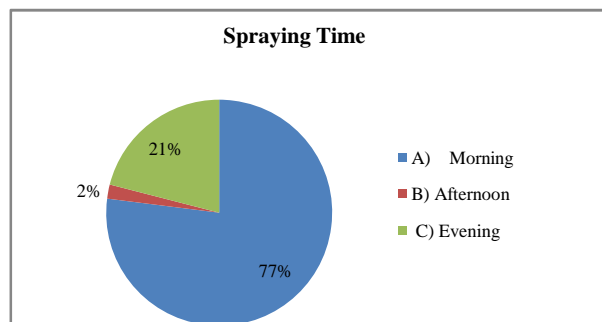


Fig 5 Spraying Time

In present study, it was noted from Kolhapur and Solapur districts that, all the surveyed farmers use to spray pesticides.

The observation shows the spraying time of pesticides. It shows that maximum (77%) farmers spray pesticides in the morning time, while 21% and 2% spray in evening and afternoon respectively.

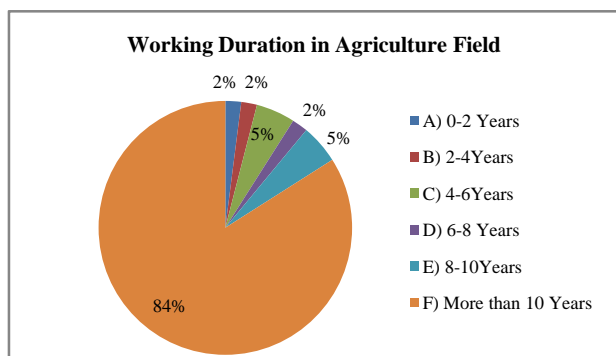


Fig 2 Working Duration in Agriculture Field

In present study, it was noted that 84% farmers are busy in agriculture sector for more than 10 years, 2% for each 0-2, 2-4 and 6-8 years and 5% for each 4-6 and 8-10 years.

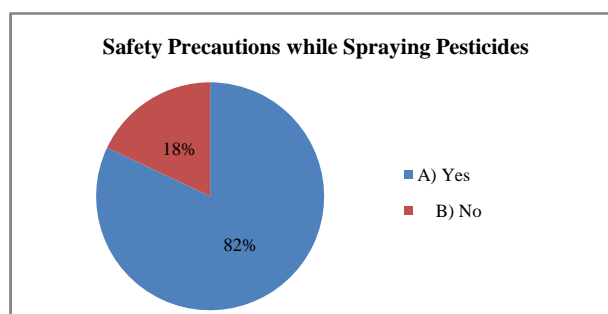


Fig 6 Precautions while Spraying Pesticides

During present investigation it was noted that only 18% respondents were taking safety precautions when they spray pesticides on the other hand maximum (82%) farmers were not taking any safety precautions while spraying of pesticides.

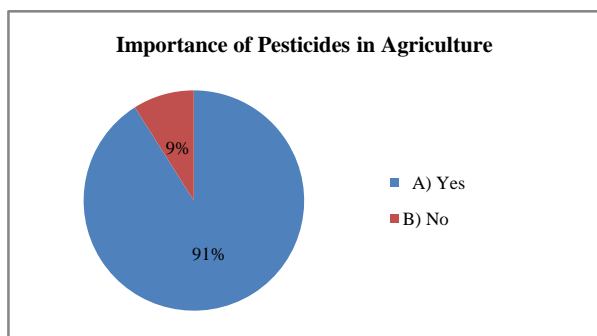


Fig 3 Importance of Pesticides in Agriculture

After analysis, it was concluded that that 91% farmers think that pesticides are important in agriculture while only 9% were thinking about pesticides are not important in agriculture.

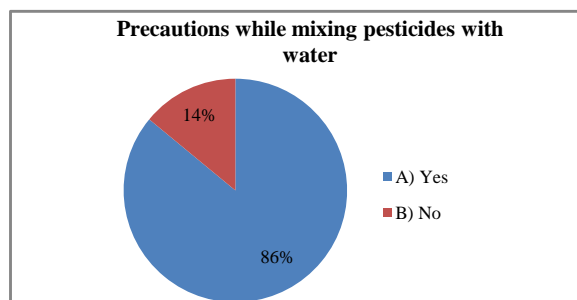


Fig 7 Precautions while mixing pesticides with water

With respect to mixing of pesticides with water it is shows that 86% farmers take precautions while 14% does not take any type of precaution.

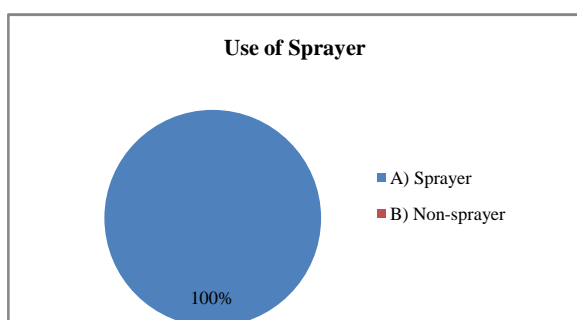


Fig.4 Use of Sprayer

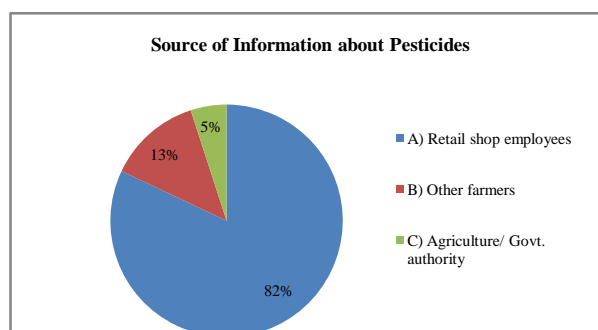


Fig 8 Source of Information about Pesticides

More farmers receive relevant information regarding pesticides from retail shop employee it was 82% followed by other farmers (13%) and remaining 5% received it from agriculture or government authority.

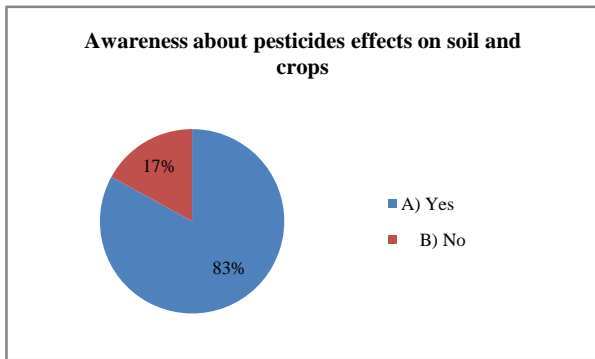


Fig 9 Awareness about pesticides effects on soil and crops

Study was done about awareness regarding harmful impacts of pesticides on soil and crops. It shows that 83% farmers are aware that the pesticides affect the quality of soil and crop and remaining 17% are not much aware about it.

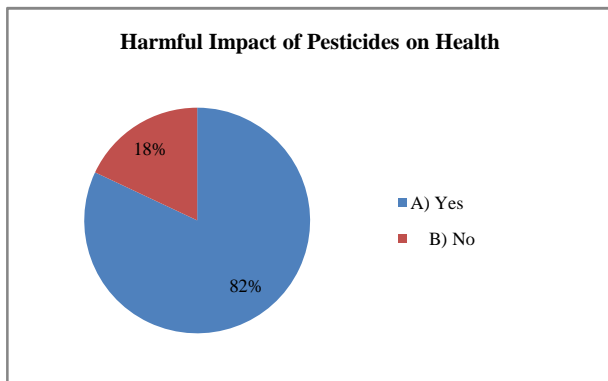


Fig 10 Harmful impact of pesticides on health

Awareness regarding harmful impacts of pesticides was noted. It was seen that 82% farmers are aware regarding to the harmful impacts of pesticide on their health as well as 18 % are not aware about it.

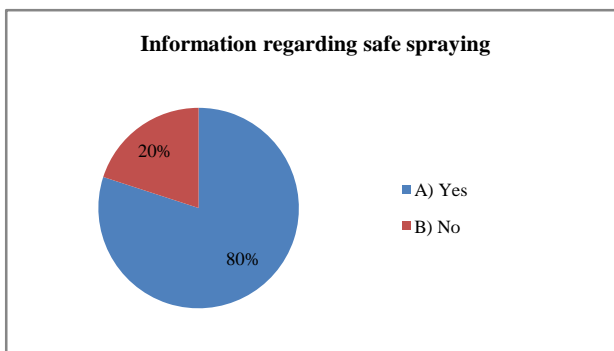


Fig 11 Information regarding safe spraying

Study was carried out to check whether farmers receive necessary information regarding safe spraying of pesticides. It was observed that 80% farmers receive all necessary information regarding safe spraying of pesticides and remaining 20% do not receive necessary information.

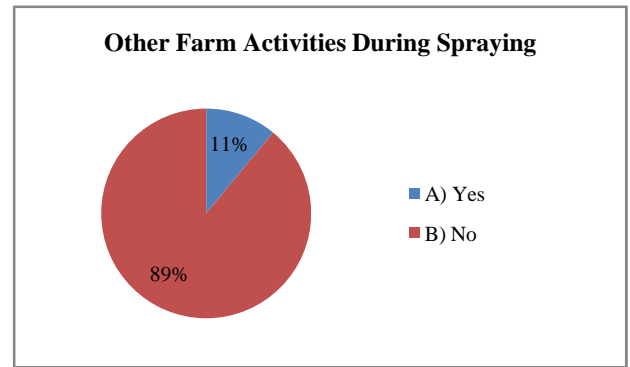


Fig 12 Other farm activities during spraying

During this study, it was also noted whether other farm activities are continued or not during spraying of pesticides. In 89% cases farm activities are not continued while spraying pesticides and in 11% cases farm activities are continued during spraying pesticides.

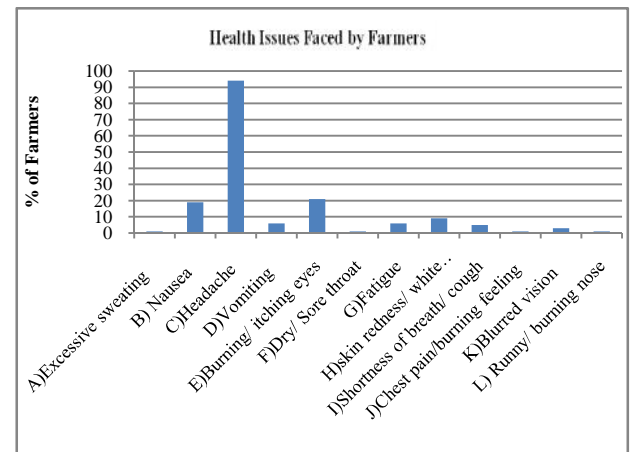


Fig 13 Health issues faced by farmers

The present study is also reflecting the health problems faced by farmers due to use of pesticides in agricultural activities. The occurrence of problems such as excessive sweating, nausea, headache, vomiting, itching eyes, sore throat, fatigue, skin redness, shortness of breath, chest pain, blurred vision and runny nose was observed. The occurrence of headache was more among farmers than any other health issues

CONCLUSIONS

After the present study it can be concluded that many farmers are not aware about harmful impacts of pesticides on their health as well as quality of soil and crops. Majority of farmers think that pesticides are very essential for good yield. It was also concluded that farmers do not receive proper and relevant information about spraying of pesticides. It is also found that many farmers do not use any safety measure and thus suffer from many health problems in day to day life. There is a requirement of creating more awareness among farmers regarding use, effectiveness and positive as well as negative impacts of pesticides on biotic as well as abiotic factors.

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