

Knowledge's Level Of The Child's Farmers Against The Use Of Pesticide And The Dangers

by Maria Yuantari

Submission date: 30-Jan-2019 03:06PM (UTC+0700)

Submission ID: 1070509330

File name: 12._Prosiding_AASIC_2018.pdf (387.26K)

Word count: 3249

Character count: 17475



KNOWLEDGE'S LEVEL OF THE CHILD'S FARMERS AGAINST THE USE OF PESTICIDE AND THE DANGERS

Maria G. C. Yuantari¹; Sri Handayani¹; Eti Rimawati¹; Kismi Mubarakah¹; Eko Hartini¹

¹*Faculty of Public Health Dian Nuswantoro University, Semarang, Indonesia*

e-mail: mgcatur.yuantari@dsn.dinus.ac.id; yanih16@gmail.com; erijavas@gmail.com;

kismi.mubarak@gmail.com; eko.hartini@dsn.dinus.ac.id

ABSTRACT

Indonesian farmers depend on pesticide, which is deemed as their life-saver for harvests. However, unconsciously the chemicals are toxic and dangerous to the farmers' health, consumers, and the other micro-organisms. Pesticides even threaten children's health as the next generation. This study aimed to identify the level of knowledge of child's farmers against the use of pesticide and the dangers.

The method of the study was cross-sectional with interview technique, located in Curut and Wedoro villages, sub-district of Penawangan, Grobogan district. The population of the study is child's farmers in Curut and Wedoro villages. The sample has been taken based on inclusion criteria with child's farmers in the grade of 3, 4, and 5 of primary school, with a total of 52 children.

Results showed that children's farmers have had low knowledge of pesticides and its dangers. It showed 76,8% did not know about pesticides, 61,5% did not know the use of pesticides, 69,2% did not know its dangers, 86,5% did not know how to dispose of pesticides, 55,8% did not know that personal equipment was used on the farm, and 65,4% was never given information about pesticides.

These children lacked knowledge about the use of pesticides and the dangers. This effect is due to the avoidance of appearing as part of the wrong culture or behavior that is against the use of pesticides.

Keywords: child's farmers, pesticide, education, environment.

Introduction

Farmers make up the largest working group in Indonesia. Although its tendency is declining every year, the labor works in agricultural sector still amounted to 42 million people or about 40% of the workforce population in Indonesia. (Sulistiono 2000) In agriculture, pesticides are a means to kill the pests of plants. According to the FAO, a pesticide is any substance or mixture that is expected as a precaution, destroy or control any pest, including the vector of disease to humans and animals; plants are not favored in the process.



Indonesian agricultural pesticide-use advanced rapidly and planting farmers are pleased to have a bountiful harvest that is not damaged or plagued with pests and weeds.(Novisan 2002) However unwittingly pesticides are toxic to the individual farmers. Drug designation and pharmacodynamics for pesticides has become a trend, which is helpful for the healing process. Usage in excess of the dose also had become a habit. Because of such habit, it was proved that there is a relationship between the increased dosages of pesticides that correlates with the incidence of poisoning in horticultural farmers Ngablak Magelang, Jawa Tengah.(Yuantari et al. 2009)

The use of pesticides without protection and the health care of people are often associated with pesticides. Pesticides poisoning does not occur only during the time when pesticides are used, but also the time to prepare, spray, and to people who eat the crops. The physiological impact of pesticides on its user may include dizziness when spraying or afterwards, or vomiting, heartburn, runny eyes, skin feels itchy and become injured, seizures, fainting , and a few cases end in death. (Pesticide Action Network Asia and the Pacific 1999)

Pesticides can have negative impact on children who are the nation's future and the survival of life on this earth. The farmer's children are a priceless investment to society, as the next generation of children must be equipped with a high education and good health. Many children are born with disabilities or defects due to the use of pesticides. Waliszewski 2009 found that after exposure to pesticides in the body of female farmers after childbirth pesticides can be present in their breastmilk. Maternal exposure to pesticides is also harmful to the fetus and the child when the parents are exposed to pesticides, in a case-control study by Yuon K Shim, et al. 2009, a relationship was found between the pesticides and the incidence of cancer in children whose parents are exposed to pesticides. To add to the dangers of pesticide use, delays in early childhood development was correlated with environmental exposure to pesticides on pregnant women, which was researched by Lovasi (2011).

Excessive and misuse of pesticides impacts the health of farmers such as poisoning, which is divided into three classifications: mid acute poisoning, severe acute and chronic poisoning. Mild acute poisoning cause dizziness, headache, mild skin irritation, body ache and diarrhea. Severe acute poisoning cause symptoms of nausea, chills, abdominal cramps, difficulty breathing salivation, pupils shrink and pulse rate increased. Furthermore, severe poisoning can lead to unconsciousness, convulsions, and even can cause death. (Quijano et al. 1999). Chronic poisoning is more difficult to detect because it is not immediately noticed causes no specific symptoms and signs. Based on previous studies, the impact of exposure to pesticides can cause multiple myeloma, sarcoma, prostate cancer, pancreatic cancer, uterine cancer, ad Hodgkin's disease.(Alavanja et al. 2004; Arcury 2003; Rich 2006).

Improper use of pesticides may also upset the balance of nature, among others. Pesticides directly, cause environmental pollution of air, soil, and water, all of which was proven in Indonesian waters where organochlorine pesticides has been found at relatively high amounts,



especially in the waters of Jakarta (Munawir, 2005). Pesticides such as these; kill non-target organisms. For the agricultural environment, improper pesticide-use can use pesticide resistance in PPO (Plant Pest Organism), thus increasing pest populations following the use of pesticides, or creating an emergence of new pests.(Djojsumarto 2008; Sinulingga 2006)

Grobogan is an agricultural area and a buffer for food products and human resources when the needs of the sick require more than what is available. This Grobogan area will have an impact on the outcome of future global food security and will be felt by residents of central java especially in their children, as the future generation. The purpose of this study was to identify the level of knowledge the children of farmers on pesticides and its dangers.

Method

The data collection is done cross-sectionally with interviews using a structured questionnaire that had been tested. The research was located in the village of Curut and Wedoro Subdistrict of penawangan Grobogan district, the center of agriculture and horticulture. This study was conducted from March to May 2012. The population in this study are the children of farmers in the village of Curut and Wedoro. Sampling was based on inclusion criteria with the provisions of farmers' children. Data analysis was done using computer software, performed univariate analysis to illustrate the picture of the children's knowledge of farmers on the use of pesticides and its dangers.(BPS Grobogan 2007)

Result and Discussion

a. The involvement of children on agricultural

Farmers working on in the agricultural land was assisted by family members, neighbors and did not rule out the possibility of their children. Of the 52 respondents, 15 are the children of farmers who helped cultivate the farmland. While the remaining 37 children did not participate in agricultural activities.

These children helped farmers in agriculture activities along with their parents, such as preparing the pesticides, helping mixing pesticides, spraying it in the fields, eradicating pests, wash the pesticide equipment including clothes.

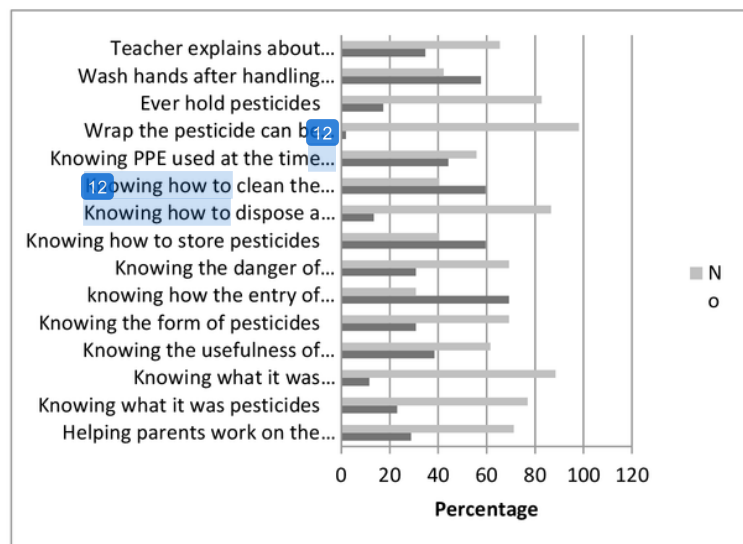
b. Children's knowledge of pesticides

The children's knowledge of pesticides used by their farming parents, in general, is still very low. The data is shown in graph 1. From the interviews, it revealed that 76,8% of children do not know about pesticides and 88.5% did not know what is meant by insecticide, as it also does not know what's the use of pesticides as much as 61.5%. Kids farmers understand pesticide medicinal plants, the perception of drugs are usually harmless and as a helper for illness. Travelling entry of pesticides into the body of their 69.2% answered the entry of pesticides in the body can be through the mouth, skin, nose, and eyes. 69.2% did not know the



dangers of pesticides enter the body, but 30.8% answered when asked whether if pesticides enter the body then they responded that pesticides can cause intoxication, dizziness, and even there the answer can lead to death.

There are still children who do not know how to store pesticides as much as 40.4%, whereas most children answered storing pesticides can be placed in the room with no ventilation, and to not incorporate meals with a warehouse. When pesticides are exhausted, then how to dispose of pesticide containers 86.5% answered do not know, while answering wrap packaging and burn it. 40.4% of respondents did not know how to clean the atomizer while out how by means of spray-washed with soap. When the on-farm use of personal protective equipment that 55.8% of children did not know. For respondents who answered most farmers should wear a mask and hat. If after handling the pesticides do is wash your hands. Of the 52 children, 65.4% of children felt they have not been notified of pesticides' effects. The lack of knowledge among these children about pesticides, based on interviews is because they did not get enough information or the education about pesticides from teachers at school and in the family environment.



Graph 1. The child's farmer knowledge toward pesticide in Curut and Wedoro village the subdistrict of Penawangan year 2012

The level of knowledge of children of farmers on pesticides and its dangers is still relatively low it is known from the notion of pesticides, insecticides, the use of pesticides, pesticide hazards, methods of storage of more than 50% did not know. Although farmers are already familiar with the children's viewing habits of parents used pesticides are still not good levels of knowledge. In Lebanon by Salameh, et al (2004) conducted a study on knowledge, attitudes, and practices in the



use of pesticides to compare between groups are often exposed to pesticides, rarely and never exposed to pesticides, it turns a good knowledge not necessarily performed practically in this study. Children of farmers performed lowly, like what was found with Indonesian children. Their knowledge should be better, but the pesticide education is still low.

Farmers' children are living at home with the family farmers and are indirectly exposed to agricultural chemicals, because of their storage, and the intensity of the children's farm work also affected the children of farmers exposure to pesticides. Health impacts caused by the use of pesticides such as goiter (Golder, 2010) as well as the change in cell growth at birth due to exposure to diazinon and parathion (Abayomi A, 2010).

Increased knowledge of children about the dangers of pesticides and is needed to reduce the negative impact of the use of pesticides. From interviews and viewing of local teaching materials in primary school was not yet contained instructional material about pesticides and its dangers. For local content material as subjects KPDL (On Yourself and Environmental Concern) in Grobogan area contains information about the way to plant a variety of products featured in Grobogan area. Elementary school children, especially in agricultural areas need to solid understanding pesticides and its dangers, it is expected that school-age children more readily change behavior than the parents. To add the benefits, the awareness if more effective when it is provided as early as possible. Knowledge among school children can be therefore maintained better and the community can avoid avoiding the negative effects of pesticide use.

Subdistrict Penawangan already implementing agricultural local subject, elementary school children in grades 4,5, and 6 have learned about the various kinds of agricultural engineering from and how to grow food crops, and what to do if the plant disease, but there has been no material about pesticides and impacts that occur as a result of its use. Only a few children are given guidance and insights from their respective parents about the dangers and handling of pesticides, whereas dangers of pesticides also haunt the child every day.

The role of the school should be the starting point for providing explanations about pesticides and their impact in order to increase knowledge among grade school children. Teachers are more trustworthy as well as being a role model to children than parents who mostly just graduated from elementary school. The behavior of parents in their use of pesticides is still much less precise, as seen from the results of the study 68 vegetable farmers in Magelang Ngablak. In that study, 76,5% of pesticide poisoning were tied to an 81% of the farmers that do not use personal protective equipment), additionally, the mixing of pesticides was not according to instructions and the praying method was again without consideration of the direction of the wind. Parents tend to provide justification even when their behavior is not correct, including topics such as in applying pesticides. For example, when viewed seemed already too well that the packaging of pesticides that have been depleted should be burned than be used to elsewhere. It is not right for burning waste deposits because it may produce harmful chemicals and pollute the air. The behavior of parents



who do not use personal protective equipment indirectly give false knowledge to children. The local school system is an excellent starting place to improve knowledge of pesticides. Teaching guidelines are easy to understand for children as well as appealing because of hope to have better health can improve their health and wellness.

Conclusion

The level of knowledge among the farmer's children about pesticides and its danger was still low. It was discovered from our findings that 88.5% of children do not know the name of insecticides, 76.9% do not know what is called pesticides, 61.5% do not know the use of pesticides, 69.2% do not know how exposure to pesticides enter the body, 86.5% could not correctly answer about how to dispose of pesticide packs. A reason for this may be due to the lack of teaching materials that discuss pesticides in local content subjects. The KPLD has focused heavily on ways of planting and increased agricultural production instead of creating materials about the dangers of pesticides and the health of farmers, consumers, and environment. The behavior of farmers who are now less precise in the use of pesticides will make an example unfavorable for children so as to was the danger the health of the future generation.

Prevention of the dangers of using pesticides should be as early as possible in order to appropriately incorporate their facts with pesticide-use instruction and to change the farmer's behavior. Through teaching materials about pesticides that contain the notion of the hazards of pesticides and their use, the health of farmers and their children can be improved. Installing the knowledge about pesticides from elementary school ages will create more awareness and more careful handling of pesticides.

References

- Sulistono, Astrid. (2000). Occupational diseases and its related, Publisher of Universitas Indonesia (UI-Press), Jakarta, 2000.
- Novisan. Tips for resolving practical issues of pesticide use, Argomedia Pustaka, Jakarta. 2002.
- Yuantari MG Catur, Onny setiani. Nurjazuli. (2009). Environmental Economy Study of Pesticide Usage and Its Impact on Farmer's Health in Horticultural Area of Sumber Rejo Village, Ngablak Subdistrict, Magelang Regency. *Jurnal Kesehatan Lingkungan*. Volume 8, No. 2, pp; 63-69.
- Pesticide Action Network Asia and the Pacific. (1999). *Beware, Pesticides Hazardous to Health*. Yayasan Duta Awam.
- Waliszewski, S.M., Melo, s.G., Villalobus, P.R., Gomez, A.Z, Amador, M.O., Herrero, M.M., Carvajal, O., 2009. Breast Milk Excretion Kinetic of *b*-HCH, ppDDE and ppDDT, *Bull Environ Contam Toxicol* volume 83;pp 869–873 DOI 10.1007/s00128-009-9796-3
- Youn K, shin, Steven P, Mlynarek, Edwin van Wijngaardens. (2009). Parental Exposure to Pesticides and Childhood Brain Cancer: U.S. Atlantic Coast Childhood Brain Cancer Study , *Environmental Health perspectives*.
- Lovasi, Gina S; Quinn, James W; Rauh, Virginia A; Perera, Frederica P; Andrews, Howard F. (2011). Chlorpyrifos Exposure and Urban Residential Environment Characteristics as



6th Asian Academic Society International Conference (AASIC)
A Transformative Community:
Asia in Dynamism, Innovation, and Globalization



- Determinants of Early Childhood Neurodevelopment, *American Journal of Public Health*. Volume 101 Nomor 1 pp: 63-70
- Quijano Romeo dan Sarojeni V. Rengam. (1999). Pesticides are Dangerous to Health. Yayasan Duta Awam, Pesticide Action Network Asia and the Pacific, ISBN: 983-9381-11-3. Series: 983-9381-04-1.
- Arcury, Thomas A, Quandt, Sara A. (2003). Pesticides At Work and At Home: Exposure of Migrant Farmworkers. *Journal Medical Science*. Volume 362, 9400 pp 20-21.
- Alavanja, Michael C R., Hoppin, Jane A., Kamel., Freya. (2009). Health Effects of Chronic Pesticide Exposure: Cancer and Neurotoxicity *Annual Review of Public Health*. volume 25; pp 155-97.
- Rich Deborah. (2006) Are pests the Problem or Pesticides. *Biology Journal*. Volume 28, No. 1 pp 6-7.
- Munawir Khazanah. (2005). Monitoring of Organochlorine Pesticide Levels In Several Estuaries In the waters of Jakarta Bay. *Oseanologidan Limnologi di Indonesia* No.37: 15-25.
- Panut Djojoseumarto. (2008). Pesticides and their applications, Agromedia Pustaka, Jakarta.
- Sinulingga. (2006) Organocull Residue Study On Carrot *Daucus Carota L* in Central Area Kab. Karo Sumut, *Jurnal Sistem Teknik Industri* . Volume 7, No. 1 Januari.
- BPS Kabupaten Grobogan. (2008). Grobogan In Figures Year 2007. Published Cooperation Bappeda dan BPS Kabupaten Grobogan.
- Salameh Pascale R, Isabelle Baldi, Patrick Brochard, and Bernadette Abi Saleh. (2004). Pesticide in libanon: a knowledge, attitude, and Practice study, *Environmental Research* 94,1-6, available online at www.sciencedirect.com
- Goldner, Whitney S; Sandler, Dale P; Yu, Fang; Hoppin, Jane A; Kamel, Freya. (2010). Pesticide Use and Thyroid Disease Among Women in the Agricultural Health Study. *American Journal of Epidemiology*. Volume 171 No. 4; pp 455
- Abayomi A., Adigun, Nicola Wrench, Frederic J., Seidler, Theodore A., Slotkin. (2010) Neonatal organophosphorus pesticide Exposure alters developmental trajectory of cell signaling cascades controlling metabolism: Differential effects of diazinon and parathion: *Journal Environmental Health Perspectives*. Volume 118, No. 2: 210-215.

Knowledge's Level Of The Child's Farmers Against The Use Of Pesticide And The Dangers

ORIGINALITY REPORT

12%

SIMILARITY INDEX

8%

INTERNET SOURCES

6%

PUBLICATIONS

9%

STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Mae Fah Luang University Student Paper	3%
2	onlinelibrary.wiley.com Internet Source	1%
3	Submitted to Universitas Dian Nuswantoro Student Paper	1%
4	journal.unnes.ac.id Internet Source	1%
5	www.kelair.bppt.go.id Internet Source	1%
6	Yuantari, Maria G. C., Cornelis A. M. Van Gestel, Nico M. Van Straalen, Budi Widianarko, Henna R. Sunoko, and Muhammad N. Shobib. "Knowledge, attitude, and practice of Indonesian farmers regarding the use of personal protective equipment against pesticide exposure", Environmental Monitoring and Assessment, 2015. Publication	1%

7	Submitted to Kingston University Student Paper	1%
8	Submitted to University of Glamorgan Student Paper	1%
9	Submitted to Ryerson University Student Paper	1%
10	www.science.gov Internet Source	1%
11	migratorysoaringbirds.birdlife.org Internet Source	1%
12	Veronica Sundstedt, Diego Navarro, Julian Mautner. "Possibilities and challenges with eye tracking in video games and virtual reality applications", SIGGRAPH ASIA 2016 Courses on - SA '16, 2016 Publication	<1%
13	www.innspub.net Internet Source	<1%
14	repository.usu.ac.id Internet Source	<1%
15	www.cdpr.ca.gov Internet Source	<1%
16	krishikosh.egranth.ac.in Internet Source	<1%

Exclude quotes Off

Exclude matches < 8 words

Exclude bibliography Off