#48-PP55 A Description of Pesticide Use in Infertile and Fertile Farmers (Study on Red Onion Farmers in Brebes)

Sri Winarni[1], Hanifa Maher Denny[2], Dharminto[1], Djoko Nugroho[1], Fahmi Arifan[3], Anis[4], Nuryanto[5]

[1]*Department of Biostatistics and Population study, Public Health, Diponegoro University, Semarang, 50275, Indonesia*
[2]*Department of Biostatistics and Population study, Public Health, Diponegoro University, Semarang, 50275, Indonesia*
[3]*Programme Diploma of Chemical Engineering, Faculty of Engineering, Diponegoro University, Semarang, 50275, Indonesia*
[4]*Medicine, Diponegoro University, Semarang, 50275, Indonesia*
[5]*Department of Nutrition Science, Medicine, Diponegoro University, Semarang, 50275, Indonesia*

Introduction
Infertility rate in Indonesia ranges from 6.9% to 9.3%. The prevalence of reproductive age couples who do not have descent for > 1 year in Pamulihan Village, Larangan District, Brebes is 33%. The highest pesticide users in Indonesia are in the Brebes area. The farmers use pesticide mixtures of more than 5 types of drugs. During the onion pest season, they spray the red onion every two days. Based on the test result of cholinesterase of 457 farmers in 11 sub-districts in Brebes Regency, they experienced mild poisoning (19.25%) and moderate poisoning (4.08%). Studies related to the impact of pesticides on the quality of spermatozoa have not been widely carried out in the Brebes area. This study is an initial research of micronutrient supplementation on infertile farmers.

Objectives
This study aims to describe the use of pesticides between the red onion farmers who experience sperm abnormalities with those who do not.

Methodology
This research is a descriptive cross sectional study. Data was collected through the one-on-one interview process using a structured questionnaire. Respondents used in this study were 5 farmers who experienced sperm disorders and 12 fertile farmers. The total respondents were 17 red onion farmers. The use of pesticides includes the type of pesticide used, frequency of use, personal protective equipment when spraying pesticides, and the storage of onion seeds.

Results
Infertile farmers have 100% sperm deformity (teratozoospermia). The percentage of farmers who use more than 3 types of pesticides is 80%. Types of pesticides used by red onion farmers are organophosphates (Mankozeb, Glifosate, Chlorpyrifos, Dimetoate, Chlorotalonil, Profenofos), carbamates (Methomyl, Tiodikarb, Carbosulfan, Indoksakarb), and pyrethroids (Chlorfenapir, Beta-Siflutrin, Emamectin benzoate, Metoxifenozid, Fenpropatrin, Spinoteram, Abamectin). One hundred percent of farmers spray the onions 3 times a week. As many as 94% of farmers do not use personal protective equipment (masks, gloves) when spraying the onions. Seventy-five percent more farmers

keep the onion seeds in the house. Before the onion seeds are stored all farmers (100%) spray pesticides so that the onion seeds are not easily decayed.

Conclusions

Infertile and fertile farmers use pesticides with dangerous procedures that do not use PPE, excessive use (pesticide mixture> 3 types, spraying 3 x / week, and spraying onion seeds and placed at home.

Keywords: pesticides, infertile, fertile, red onion farmers

Corresponding author: *Sri Winarni, Department of Biostatistics and Population study, Public Health, Diponegoro University, Semarang, 50275, Indonesia, Tel. 02-8122893069, E-mail: winarniwiwin1975@gmail.com*