ABSTRACT

Air pollution can reduce the quality of the environment and quality of life of the community surrounding the industry. The village is a residential area with Patihan populous where its location adjacent to the sugar factory which is one contributor to particulate pollutants. This research aims to analyze the environmental health risks (ARKL) $PM_{2,5}$ levels and respiratory disturbances on communities surrounding Rejo Agung Baru sugar factory.

This research was a descriptive cross sectional study design. The sample of respondents was taken by purporsive with a large sampling of samples as many as 14 people housewife. Environmental samples to ambient levels of PM10 in the air as much as 1 point with 3-time measurement and levels of $PM_{2,5}$ as many as 14 homes. Data collection with interviews and Haz-Dust EPAM-5000 Model to measure the levels of particulate matter. Research variables including the levels of PM_{10}, $PM_{2,5}$ levels which then performed ARKL, environmental factors on the measurement of the ambient air, the individual factors and behavioural factors including the smoking habits of the respondent and family members, the use of insect repellent, and condition of the home.

The research results showed that levels of PM_{10} in ambient air quality standard according to meet the still Pergub Jatim No. 10 of 2009 while as many as 7 houses (50%) had levels exceeding $PM_{2,5}$ raw quality according to the PMK No. 1077/MENKES/PER/V/2011. Sources within the home namely $PM_{2,5}$ from the habit of smoking family members, the use of insect repellent, moisture and temperature, and the distance from the outside of the house. The results indicate levels of ARKL $PM_{2,5\ (maximum)}$ in 3 respondents have a risk of exposure to $PM_{2,5}$ not safe for weight loss and concentration that existed with the old are at home 24 hours/day and the frequency of exposure 350 days/year for the next 30 years. Respiratory disturbances the most widely perceived respondent was sneezing

With the result obtained above, required increased awareness of respondents to open the window every morning and afternoon, do not use insect repellent and a family member of the respondents not to smoke inside the house.

Keywords: Risk Analysis of Environmental Health, sugar mill, $PM_{2,5}$, PM_{10}, Complaints respiratory disorders