**Abstract Submission: 49th Asia-Pacific Academic Consortium for Public Health**

**Title of the abstract:**
Nutritional Intake Pattern of Horticulture Farmers in Three Ethnic Population in Indonesia and Farmer Susceptibility to Chlorpyrifos Insecticide

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**Summary (400 to 500 words) should be concise and contain all sufficient information for a fair assessment:**

**[Objective]**
This study aimed to analyse the relationship of nutritional intake pattern with farmer susceptibility to chlorpyrifos insecticides.

**[Method]**
This study was conducted with a cross-sectional design. Data on nutrient intake pattern of farmers was attained using recall 24-hours form and food frequency questionnaire, while information about smoking habit and age was obtained from interview. Height and weight of farmers was measured to get Body Mass Index (BMI). Urine analyses was applied to get information about consumption of iodium and goitrogenic food. Serum analysis was done to get data on paraoxonase 1 (PON1) activity that describe the individual susceptibility to chlorpyrifos. There were 298 vegetable farmers were participated as subjects, came from three population: Javanes, Sundanese, and Makassarese.

**[Result]**
The highest median total energy intakes were the Makassarese, approximately 2638,15 kilocalories. The Makassarese group has much more carbohydrate intake, about 482, 88 g/day. The highest mean total protein intake was among the Sundanese population, about 82,12 g/day. The highest mean fat intake was the Javanese populations, approximately 93,15 g/day. Magnesium and phosphor were micronutrients that consumed by majority of farmers among the three ethnic populations. The intake of vitamin A was adequate mostly among the Makassarese and the Sundanese population, about 86 % and 92,2 % respectively, while among the Javanese group there was only below 50% farmers had adequate vitamin A intake. In opposite, vitamin E, vitamin C, calcium, and zinc were the micronutrients which were the least consumed by farmers from all populations. Vitamin D was consumed adequately by only 9 % and 11 % of farmers in the Javanese and Sundanese groups respectively, but quite high in the Makassarese group, around 60% farmers. All population had UEI median >100µ g/L, means that all populations came from location with adequate iodium intake. The majority of farmers in three populations had normal urinary thiocyanate: above 75%. The majority of farmers in the three populations had low activity
of PON1 and the highest prevalence was in the Sundanese group (64.7%). There was no significant relationship was found between frequency of vitamin C and vitamin E consumption.

[Conclusion]
In conclusion, majority of farmers in the three populations had low activity of PON1 majority of farmers had high sensitivity to the effect of chlorpyrifos exposure. Inadequate antioxidant vitamins might resulted in susceptibility of farmers toward health effect of chlorpyrifos insecticide exposure. Majority of farmers in all ethnic population had adequate macronutrients intake but inadequate in some micronutrients intake.

| Keywords            | nutrient intake, farmers, PON1, individual susceptibility, Indonesia |