

SUMMARY

FADILLA ANITA KINSKY JOHANSYAH. Research entitled “Anxiolytic-Like Effect of Patchouli (*Pogostemon cablin* (Blanco) Benth.) Essential Oil Inhalation on Elevated Plus-Maze Test in Mice (*Mus musculus*)” under the supervision of Dr. Eka Pramytha H., M. Kes., drh as the first supervisor and Dr. Rimayanti, M. Kes., drh as the co-supervisor.

The aim of the research was to find out whether Patchouli (*Pogostemon cablin* (Blanco) Benth.) Essential Oil has anxiolytic-like effect if it was inhaled by mice (*Mus musculus*). This study was using 20 mice range 3-6 months old with 25-30 grams body weight which were tested in behaviour test called Elevated Plus-Maze (EPM) Test. Mice were put in EPM one by one and being observed for five minutes. Observation done for five parameters, they are total number of squares which are transverse in the open arms (STO), number of visits to the open arms (VOA), number of visits to the closed arms (VCA), time spent in the open arms (TOA), and time spent in the closed arms (TCA). These 20 mice were divided into five treatment groups they are negative control group (C1) that was treated by 1 mg/kg of saline intraperitoneally, positive control group (C2) that was treated by 1 mg/kg of diazepam intraperitoneally, 1.0% PEO inhalation (T1), 2.5% PEO inhalation (T2), and 5% PEO inhalation (T3).

ANOVA data analysis showed that all the open arms activity (STO, VOA, and TOA) indicated significant difference between treatment groups. The analysis continued with post hoc Duncan Test and the result showed that no PEO dosages were significantly affected STO. The VOA could be slightly affected by 1.0% and

2.5% PEO. 1.0% of PEO also could give little effect towards TOA. Closed arms activity (VCA and TCA) were not significantly affected by all the treatments. This result was reached as expected as Baretta (2012) and Walf (2007) cited in their study. All this results were drawn a conclusion that 1.0% or less of PEO inhalation are potential to give anxiolytic-like effect to mice.

**ANXIOLYTIC-LIKE EFFECT OF PATCHOULI (*Pogostemon cablin*
(Blanco) Benth.) ESSENTIAL OIL INHALATION ON ELEVATED
PLUS-MAZE TEST IN MICE (*Mus musculus*)**

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ABSTRACT

The aim of the research was to find out whether Patchouli (*Pogostemon cablin* (Blanco) Benth.) Essential Oil has anxiolytic-like effect if it was inhaled by mice (*Mus musculus*). Experiment design was using Completely Randomized Design. This study was using 20 mice range 3-6 months old with 25-30 grams body weight which were tested in Elevated Plus-Maze (EPM) test. Mice were put in EPM one by one and being observed for five minutes. Observation done for five parameters, they are total number of squares which are transverse in the open arms (STO), number of visits to the open arms (VOA), number of visits to the closed arms (VCA), time spent in the open arms (TOA), and time spent in the closed arms (TCA). These 20 mice were divided into five treatment groups they are negative control group (C1) that was treated by 1 mg/kg of saline intraperitoneally, positive control group (C2) that was treated by 1 mg/kg of diazepam intraperitoneally, 1.0% PEO inhalation (T1), 2.5% PEO inhalation (T2), and 5% PEO inhalation (T3). The result was analysed by Kruskal-Wallis and post hoc test Mann-Whitney Test. STO result was (C1) $0.75^a \pm 0.5$, (C2) $5.25^b \pm 1.5$, (T1) $2.25^{ab} \pm 2.217$, (T2) $1.75^a \pm 0.957$, (T3) $0.5^a \pm 0.577$. The VOA result was (C1) $0.75^a \pm 0.5$, (C2) $2.25^b \pm 0.5$, (T1) $1.75^{ab} \pm 1.5$, (T2) $1.25^a \pm 0.5$, (T3) $0.5^a \pm 0.577$. The VCA result was (C1) $11^a \pm 0.816$, (C2) $9.5^a \pm 3.109$, (T1) $10^a \pm 1.826$, (T2) $11.5^a \pm 1.291$, (T3) $9.5^a \pm 4.796$. The TOA result was (C1) $4^a \pm 2.828$, (C2) $22.75^b \pm 10.532$, (T1) $14.5^{ab} \pm 13.528$, (T2) $7^a \pm 5.596$, (T3) $3.5^a \pm 4.041$. The TCA result was (C1) $150.75^a \pm 17.443$, (C2) $178.25^a \pm 66.979$, (T1) $117^a \pm 48.642$, (T2) $174.25^a \pm 37.686$, (T3) $195.5^a \pm 57.703$.

Keyword: patchouli, essential oil, aromatherapy, elevated plus-maze test, anxiety