

## ABSTRACT

### **THE EFFECTS OF ETHANOL EXTRACT OF MANGOSTEEN PEEL (*Garcinia mangostana L.*) ON SPERM COUNT AND MOTILITY OF WHITE MALE RATS (*Rattus norvegicus*) EXPOSED TO CHRONIC PERIOD OF HANDPHONE ELECTROMAGNETIC WAVES**

By

**ANDRIAN PRASETYA WICAKSONO**

Handphone radiation potentially causes damage on reproductive system due to electromagnetic waves that able to induce oxidative stress over increasing free radicals. Extract of mangosteen peel (*Garcinia mangostana L.*) is enriched with amounts of antioxidant, particularly *xanthone*. Antioxidant has its role to prevent free radicals in order to give protective nature and avoid occurrence of oxidative stress. This study is preserved for 28 days with 25 samples of *Sprague dawley* strain white male rats (*Rattus norvegicus*) allotted into 5 groups, consist of group without handphone exposure (K1), group given with only handphone exposure for 3 hours/day, and groups (P1, P2, P3) given handphone exposure for 3 hours/day and ethanol extract of mangosteen peel consecutively with dosage of 50 mg/kgbw/day, 100 mg/kgbw/day, 200 mg/kgbw/day. Spermatozoa specimen is taken from epididymis caudalis shows the mean number of spermatozoa (millions/ml) on K1: 31, K2: 48, P1: 41, P2: 36, P3: 46. Meanwhile, the mean motility of spermatozoa (%) on K1: 95,82, K2: 77,25, P1: 99,82, P2: 93,32, P3: 93,25. The conclusion of this study is ethanol extract from mangosteen peel do not have impact on the sperm count in rats, however it gives impact on elevated sperm motility in rats exposed to chronic period of handphone electromagnetic waves.

Keywords: electromagnetic waves, ethanol extract of mangosteen peel, sperm count, sperm motility