

## INTISARI

Radikal bebas eksogen didapatkan dari asap rokok yang dapat menyebabkan stres oksidatif dan berpotensi terjadi peroksidasi lipid. Air kelapa muda memiliki kandungan asam askorbat, total fenol, dan *L-arginine* yang mampu meningkatkan enzim antioksidan, menurunkan *Reactive Oxygen Species* dan menghambat peroksidasi lipid. Peroksidasi lipid diketahui berdasarkan kadar *malondialdehyde* (MDA) dalam serum. Tujuan penelitian adalah mengetahui pengaruh air kelapa muda terhadap kadar MDA pada tikus dengan perlakuan paparan asap rokok.

Penelitian eksperimental rancangan *post-test only control group* pada 24 ekor tikus yang dibagi menjadi 4 kelompok secara acak. Kelompok 1 diberi pakan standar dan tanpa perlakuan, kelompok 2 diberi pakan standar dan asap rokok 3 batang/hari, kelompok 3 diberi pakan standar, asap rokok 3 batang/hari, dan vitamin E 1,8 IU/200 g BB/hari, serta kelompok 4 diberi pakan standar, asap rokok 3 batang/hari, dan air kelapa muda 8 mL/200 g BB/hari. Pemberian perlakuan dilakukan selama 14 hari untuk semua kelompok. Pengambilan sampel pada hari ke-15 dan analisa kadar MDA menggunakan spektrofotometri. Perbedaan kadar MDA antar kelompok diuji dengan *One Way ANOVA*.

Rerata kadar MDA tertinggi pada kelompok 2 ( $9,39 \pm 0,38$  nmol/mL), diikuti oleh kelompok 4 ( $3,09 \pm 0,56$  nmol/mL), kelompok 3 ( $2,49 \pm 0,53$  nmol/mL), dan kelompok 1 ( $1,62 \pm 0,24$  nmol/mL). Hasil uji *One Way ANOVA* menunjukkan adanya perbedaan bermakna ( $p < 0,05$ ).

Kesimpulan pada penelitian ini terdapat pengaruh air kelapa muda terhadap kadar MDA yang diberikan pada tikus dengan paparan asap rokok

**Kata Kunci** : Asap rokok, MDA, air kelapa muda

## ABSTRACT

**Background:** Exogeneous free radicals are obtained from cigarette smoke which can causes oxidative stress and the potential for lipid peroxidation. Young coconut water contains ascorbic acid, total phenol, and L-arginine which can increase antioxidant enzymes, reduce Reactive Oxygen Species and inhibit lipid peroxidation. Lipid peroxidation is known based on the level of malondialdehyde (MDA) in serum. The purpose of this research is to determine the effect of young coconut water on MDA levels in rats with cigarette smoke exposure.

**Methods:** The study used an experimental study with a post-test only control group in 24 rats which were randomly divided into 4 groups. Group 1 was given standard feed and without treatment. Group 2 was given standard feed and 3 cigarettes smoke/day. Group 3 was given standard feed, 3 cigarettes smoke/day and vitamin E 1,8 IU/200 g BW/day. Group 4 was given standard feed, 3 cigarettes smoke/day and young coconut water 8 mL/200 g BW/day. The treatment was given for 14 days for all groups. Samples were taken on the 15th day and MDA level analysis using spectrophotometry. The differences in MDA levels between groups were tested by One Way ANOVA.

**Results:** This study showed the highest mean levels of MDA in group 2 ( $9,39 \pm 0,38$  nmol/mL), followed by group 4 ( $3,09 \pm 0,56$  nmol/mL), group 3 ( $2,49 \pm 0,53$  nmol/mL), and group 1 ( $1,62 \pm 0,24$  nmol/mL). The One Way ANOVA test results showed a significant difference ( $p < 0,05$ ).

**Conclusion:** This study shows the effect of young coconut water on MDA levels which was given to rats that have been exposed to cigarettes

**Key words:** Cigarette smoke, MDA, *Cocos nucifera* L.

