

**ABSTRAK**

**EFFECT OF MORINGA OLEIFERA LEAVES EXTRACT ON MALONDIALDEHID (MDA) LEVEL AND FOLLICLE POLYCYSTIC OVARY SYNDROME FEMALE RAT MODEL WITH INSULIN RESISTANCE**

**LISA PURBAWANING WULANDARI**

*Polycystic Ovary Syndrome (PCOS) is the most common endocrinopathy in women and it is frequently associated with insulin resistance (IR), hyperandrogenemia, chronic inflammation, and oxidative stress (OS). The use of moringa oleifera as an antioxidant should be investigated as an alternative treatment of MDA levels and follicular refinement in PCOS with insulin resistance. The aim of this study was to prove the effect of moringa leaf extract (moringa oleifera) in various doses to decreased MDA levels and decrease theca cell follicle thickness of female rat PCOS model with insulin resistance. This research method used white rat (Rattus norvegicus) 3-month-old female weighing 100-130 grams divided into 5 groups (n = 8). PCOS model rat were given intramuscularly 1 mg/100grBW injection of testosterone propionate for 28 days, followed by metformin therapy and Moringa oleifera leaf extract at doses of 250 and 500 mg/KgBW for 14 days. Then examined levels of MDA in the blood and the thickness of the theca cell. The results showed that MDA levels in the PCOS control group increase significantly ( $p < 0.05$ ) compared with negative controls. Moringa oleifera extract of 500 mg/KgBW showed a significant decrease ( $p < 0.05$ ) to MDA levels compared to PCOS control group. Examination of theca cell thickness in ovarian histology showed that metformin and Moringa oleifera leaf extracts of 500 mg/KgBW significantly decreased the thickness of theca cells ( $p < 0.05$ ) compared to the PCOS control group. The conclusion of this study is moringa oleifera leaf extract of 500 mg/KgBW as an antioxidant has been shown to decrease MDA levels and decrease the thickness of theca cell of female PCOS mouse with insulin resistance.*

**Keywords:** Polycystic ovary syndrome, *Moringa oleifera*, malondialdehyd level, theca cell thickness