

ABSTRACT

Kriswandini, Lia. 2012. **An Antihyperglycemic Effect of Black Seed (*Nigella sativa*) on Rat Model for T2DM**. Thesis. Biology Departement Faculty of Science and Technology The State of Islamic University Maulana Malik Ibrahim Malang. Promotor (1) Dr. Retno Susilowati, M.Si and (2) Dr. H. Munirul Abidin, M.Ag.

Keywords: T2DM, Black seed (*Nigella sativa*), Blood glucose, Histology of Pancreas.

Type 2 Diabetes Mellitus (T2DM) is a metabolic disorder caused insulin deficiency with hyperglycemia. Obesity has become one of stimulator for T2DM. Free radical increases in human body and rat model with T2DM. Black seed (*Nigella sativa*) has a high level of antioxidant like thymoquinone, α -pynene, carvacrol that can decrease glucose level in plasma and improve the destruction of langerhans islands. The aim of our study is to investigate effects of black seed on glucose level and level of destruction on langerhans islands on rat model for T2DM.

This research is experimental research with a completely randomized design (RAL) with 5 treatment and 5 repetition. The treatment is K+ (diabetic rats without extract of black seed), D1 (diabetic rats with extract of black seed dose 150 μ g/kg BW/day), D2 (diabetic rats with extract of black seed dose 300 μ g/kg BW/day), K- (normal rats) and K- J (normal rats with extract of black seed dose 150 μ g/kg BW/day). Glucose level was analyzed using ANKOVA and level of destruction on langerhans islands using one-way ANOVA. If the calculation results differ significantly, then conducted further tests with BNT 0,05.

Results showed that treatment of black seed dose 150 μ g/kg BW/day on rats model for T2DM for 45 days can decrease glucose level in plasma and improve the destruction of langerhans islands on rat model for T2DM. There is an increase on body weight of diabetic rats. But, the treatment with black seed dose 300 μ g/kg BW/day is not effective to decrease glucose level, improve the destruction of langerhans islands, and increase body weight of rats model for T2DM.