RINGKASAN

Penelitian ini dilaksanakan di lahan percobaan Fakultas Pertanian Universitas Islam Sumatra Utara, yang terletak di Jl. Karya Wisata, Gedung Johor, Kecamatan Medan Johor, Kota Medan, dengan ketinggian tempat sekitar 25 mdpl. Penelitian ini berlangsung mulai bulan Juli hingga September 2024.

Penelitian ini dibimbing oleh Bapak Dr. Ir. Diapari Siregar, M.P. selaku Ketua Komisi Pembimbing dan Ibu Dr.Syamsafitri, S.P., M.P. selaku Anggota Komisi Pembimbing. Penelitian ini bertujuan untuk mengetahui pengaruh pupuk kandang kambing terhadap pertumbuhan, produksi dan ketahanan tanaman jagung manis pada sistem pertanian organik. Mengetahui pengaruh pestisida urine kambing terhadap pertumbuhan, produksi dan ketahanan tanaman jagung manis pada sistem pertanian organik. Mengetahui interaksi antara pupuk kandang kambing dan pestisida urine kambing terhadap pertumbuhan, produksi dan ketahanan tanaman jagung manis pada sistem pertanian organik. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) faktorial, yang terdiri dari dua faktor perlakuan yaitu sebagai berikut: Faktor pertama pupuk kandang kambing (K) yang terdiri dari 3 taraf yakni: K_0 = Kontrol (tanpa pupuk kandang kambing); K_1 = 10 ton / ha (2,25 kg/plot); K_2 = 20 ton / ha (4,5 kg/plot). Faktor kedua Pestisida urine kambing (U) yang terdiri dari 3 taraf yakni: U_0 = Kontrol (tanpa pestisda urin kambing); U_1 = Pestisida urin kambing 180 ml/1 liter air/plot; U_2 = Pestisida urin kambing 360 ml//1 liter air/plot. Variabel yang diamati meliputi daya berkecambah benih, tinggi tanaman, jumlah daun. diameter batang, bobot tongkol berkelobot per sampel, bobot tongkol tanpa kelobot per sampel, intensitas penyakit bulai serta inventarisasi hama dan penyakit.

Hasil penelitian menunjukkan bahwa perlakuan pupuk kandang kambing berpengaruh terhadap pertumbuhan tinggi tanaman, jumlah daun, diameter batang, bobot tongkol berkelobot per sampel, bobot tongkol tanpa kelobot per sampel dan intensitas penyakit bulai. Tetapi tidak berpengaruh terhadap perkecambahan benih. Perlakuan terbaik terdapat pada K_2 (pupuk kandang kambing 4,5 kg/plot). Aplikasi pesisida urine kambing hanya berpengaruh terhadap intensitas penyakit bulai. Tetapi tidak berpengaruh terhadap pertumbuhan perkecambahan benih, tinggi tanaman, jumlah daun, diameter batang, bobot tongkol berkelobot per sampel dan bobot tongkol tanpa kelobot per sampel. Perlakuan terbaik terdapat pada U_2 (pestisida urine kambing 360 ml/1 liter air/plot). Interaksi dari kedua perlakuan tidak berpengaruh nyata terhadap semua variabel yang diamatin. Hama dan penyakit yang dominan di temukan selama penelitian adalah hama ulat grayak (*Spodoptera frugiperda*) dan penyakit hawar daun atau cendawan (*Helminthosporium maydis*).

Kata Kunci : Ketahanan, Organik, Pertumbuhan, Produksi dan Tanaman.

SUMMARY

This research was conducted at the experimental field of the Faculty of Agriculture, Islamic University of North Sumatra, located at Jl. Karya Wisata, Gedung Johor, Medan Johor District, Medan City, with an altitude of approximately 25 meters above sea level. The study was carried out from July to September 2024.

This research was supervised by Dr. Ir. Diapari Siregar, M.P., as the Head of the Supervisory Commission, and Dr. Syamsafitri, S.P., M.P., as a member of the Supervisory Commission. The aim of this study is to determine the effect of goat manure on the growth, yield, and resistance of sweet corn in an organic farming system. It also seeks to assess the impact of goat urine pesticide on the growth, yield, and resistance of sweet corn in an organic farming system, as well as the interaction between goat manure and goat urine pesticide on the growth, yield, and resistance of sweet corn in this system. This study used a factorial Randomized Block Design (RBD) consisting of two treatment factors: The first factor is goat manure (K), which has 3 levels: K_0 = Control (no goat manure); K_1 = 10 tons/ha (2.25 kg/plot); K_2 = 20 tons/ha (4.5 kg/plot). The second factor is goat urine pesticide (U), which also has 3 levels: U_0 = Control (no goat urine pesticide); U_1 = Goat urine pesticide 180 ml/1 liter of water/plot; U_2 = Goat urine pesticide 360 ml/1 liter of water/plot. The variables observed include seed germination rate, plant height, number of leaves, stem diameter, cob weight with husk per sample, cob weight without husk per sample, intensity of downy mildew disease, and inventory of pests and diseases.

The results of the study indicate that goat manure treatment has an effect on plant height, number of leaves, stem diameter, cob weight with husk per sample, cob weight without husk per sample, and intensity of downy mildew disease. However, it did not affect seed germination. The best treatment was found in K_2 (goat manure 4.5 kg/plot). The application of goat urine pesticide only affected the intensity of downy mildew disease, but did not affect seed germination, plant height, number of leaves, stem diameter, cob weight with husk per sample, and cob weight without husk per sample. The best treatment was found in U_2 (goat urine pesticide 360 ml/1 liter of water/plot). The interaction between both treatments did not have a significant effect on all the observed variables. The dominant pests and diseases found during the study were the armyworm (Spodoptera frugiperda) and downy mildew disease or fungus (Helminthosporium maydis).

***Keywords**: Resistance, Organic, Growth, Yield, and Plants.*