

## RINGKASAN

Padi merupakan komoditas strategis yang menjadi sumber pangan utama bagi sebagian besar penduduk Indonesia. Optimalisasi teknik budidaya padi menjadi kunci penting dalam upaya peningkatan produktivitas untuk memenuhi kebutuhan pangan nasional. Atas dasar ini dilakukan penelitian tentang kajian teknik budidaya terhadap pertumbuhan dan produksi beberapa varietas padi (*Oryza sativa* L.) Penelitian ini dilaksanakan di Lahan Padi Fakultas Pertanian Universitas Islam Sumatera Utara, Gang Sedar, Desa Tumpatan Nibung, Kecamatan Batang Kuis, Kabupaten Deli Serdang, Provinsi Sumatera Utara dengan ketinggian Tempat  $\pm 25$  meter dpl, dengan topografi datar. Penelitian ini dimulai pada bulan Desember sampai dengan selesai. Penelitian ini dibimbing oleh Ibu Dr. Ir. Noverina Chaniago, M.P. sebagai Ketua Komisi Pembimbing dan Bapak Ir. S. Edy Sumantri, M.P. selaku Anggota Komisi Pembimbing.

Penelitian ini bertujuan untuk mengetahui pengaruh teknik budidaya terhadap pertumbuhan dan produksi tanaman padi (*O. sativa* L.). Untuk mengetahui pengaruh beberapa Varietas terhadap pertumbuhan dan produksi tanaman padi (*O. sativa* L.). Untuk mengetahui interaksi antara teknik budidaya dan beberapa Varietas terhadap pertumbuhan dan produksi tanaman padi sawah (*O. Sativa* L.). Penelitian ini menggunakan Rancangan Petak Terpisah (RPT) dengan 2 faktor yaitu Petak Utama (sistem budidaya) terdiri dari 2 macam, yakni:  $T_1$  = Sistem PTT (Pengelolaan Tanaman Terpadu);  $T_2$  = Sistem SRI (*System of Rice Intensification*). Anak Petak (beberapa varietas padi) terdiri dari 3 taraf, yakni:  $V_1$  = Padi Merah (kultivar);  $V_2$  = Padi Hitam (kultivar);  $V_3$  = Padi Putih (Inpari 32). Parameter yang diamati adalah tinggi tanaman, jumlah anakan, jumlah anakan produktif, bobot gabah kering per sampel, bobot gabah per plot dan bobot 1.000 bulir.

Hasil penelitian menunjukkan bahwa teknik budidaya berpengaruh nyata terhadap pertumbuhan tinggi tanaman, jumlah anakan, bobot gabah kering per sampel, bobot gabah per plot dan bobot 1.000 bulir. Namun, teknik budidaya tidak memberikan pengaruh nyata terhadap jumlah anakan produktif. Perlakuan  $T_2$  Sistem tanam SRI (*System of Rice Intensification*) menunjukkan hasil terbaik. Varietas padi berpengaruh nyata terhadap tinggi tanaman, jumlah anakan, jumlah anakan produktif dan bobot 1.000 bulir. Namun, Varietas padi tidak memberikan pengaruh nyata terhadap bobot gabah kering per sampel dan bobot gabah per plot. Perlakuan  $V_2$  (Varietas padi hitam (kultivar) menunjukkan hasil terbaik. Interaksi antara teknik budidaya dengan Varietas padi berpengaruh nyata terhadap tinggi tanaman dan jumlah anakan. Namun, Varietas padi tidak memberikan pengaruh nyata terhadap jumlah anakan produktif, bobot gabah kering per sampel dan bobot gabah per plot dan bobot 1.000 bulir. Perlakuan interaksi  $T_2V_2$  (sistem tanam SRI dengan Varietas padi hitam) menunjukkan hasil terbaik.

## SUMMARY

*Rice is a strategic commodity that serves as the primary food source for the majority of Indonesia's population. Optimizing rice cultivation techniques is a key factor in efforts to improve productivity and meet national food security needs. Based on this, a study was conducted on the impact of cultivation techniques on the growth and production of several rice varieties (*Oryza sativa* L.). This research was carried out at the Rice Field of the Faculty of Agriculture, Islamic University of North Sumatra, Gang Sedar, Tumpatan Nibung Village, Batang Kuis District, Deli Serdang Regency, North Sumatra Province, at an elevation of approximately 25 meters above sea level, with flat topography. The study began in December and continued until completion. This research was supervised by Dr. Ir. Noverina Chaniago, M.P. as the Head of the Supervisory Committee, and Ir. S. Edy Sumantri, M.P. as a Member of the Supervisory Committee.*

*This study aims to determine the effect of cultivation techniques on the growth and production of rice plants (*O. sativa* L.). It also seeks to examine the influence of several rice varieties on the growth and production of rice plants (*O. sativa* L.), as well as the interaction between cultivation techniques and rice varieties on the growth and production of rice (*O. sativa* L.). This research uses a Split-Plot Design (RPT) with two factors: the main plot (cultivation systems) consisting of two treatments:  $T_1$  = Integrated Crop Management System (PTT);  $T_2$  = System of Rice Intensification (SRI). The subplots (rice varieties) consist of three levels:  $V_1$  = Red Rice (cultivar);  $V_2$  = Black Rice (cultivar);  $V_3$  = White Rice (Inpari 32). The parameters observed include plant height, number of tillers, number of productive tillers, dry grain weight per sample, grain weight per plot, and 1,000-grain weight.*

*The results of the study showed that cultivation techniques had a significant effect on plant height, number of tillers, dry grain weight per sample, grain weight per plot, and 1,000-grain weight. However, cultivation techniques did not have a significant effect on the number of productive tillers. The  $T_2$  treatment (System of Rice Intensification - SRI) produced the best results. Rice varieties had a significant effect on plant height, number of tillers, number of productive tillers, and 1,000-grain weight. However, rice varieties did not have a significant effect on dry grain weight per sample and grain weight per plot. The  $V_2$  treatment (Black Rice cultivar) showed the best results. The interaction between cultivation techniques and rice varieties had a significant effect on plant height and number of tillers. However, rice varieties did not have a significant effect on the number of productive tillers, dry grain weight per sample, grain weight per plot, or 1,000-grain weight. The interaction treatment  $T_2V_2$  (SRI system with Black Rice variety) produced the best results.*