

**PEMBERIAN KOMBINASI DOSIS PUPUK UREA DAN TSP
TERHADAP AGROFISIOLOGIS TANAMAN GANDUM
(*Triticum aestivum* L.) VARIETAS GURI 6 UNAND**

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RINGKASAN

Imelinda. Pemberian Kombinasi Dosis Pupuk Urea dan TSP Terhadap Agrofisiologis Tanaman Gandum (*Triticum aestivum* L.) Varietas GURI 6 UNAND. Dibimbing oleh Irfan Suliansyah dan Nurwanita Ekasari Putri

Gandum (*Triticum aestivum* L.) merupakan komoditas pangan strategis yang banyak dimanfaatkan sebagai bahan baku berbagai produk pangan, seperti mi, roti, dan biskuit. Konsumsi dan permintaan gandum di Indonesia terus meningkat, sementara produksi dalam negeri masih terbatas sehingga ketergantungan terhadap impor gandum semakin tinggi. Salah satu upaya yang dapat dilakukan untuk mengurangi ketergantungan tersebut adalah melalui pengembangan budidaya gandum domestik, terutama di wilayah dataran tinggi yang memiliki kondisi lingkungan sesuai untuk pertumbuhan tanaman gandum. Upaya pengembangan budidaya gandum di lingkungan tropis memerlukan penerapan teknologi budidaya yang tepat, salah satunya melalui pengelolaan pemupukan Nitrogen dan Fosfor yang berperan penting dalam mendukung pertumbuhan, perkembangan, dan hasil tanaman. Penelitian ini bertujuan untuk mengetahui interaksi antara beberapa dosis pupuk Urea dan *Triple Super Phosphate* (TSP), mendapatkan dosis pupuk Urea dan dosis pupuk TSP terbaik terhadap agrofisiologis tanaman gandum varietas GURI 6 UNAND. Penelitian telah dilaksanakan di Jorong Galagah, Nagari Alahan Panjang, Kecamatan Lembah Gumanti, Kabupaten Solok, Sumatra Barat pada ketinggian ± 1.616 m dpl dari bulan September hingga Desember 2025. Pengamatan variabel agronomis dilakukan di Laboratorium Agronomi Fakultas Pertanian Universitas Andalas, sedangkan analisis kadar klorofil total, serapan Nitrogen dan Fosfor dilakukan di PT Wiwiadi Bintang Sains, Limau Manis, Padang. Penelitian ini menggunakan Rancangan Acak Lengkap faktorial yang terdiri atas dua faktor, yaitu dosis pupuk Urea (75, 150, dan 225 kg/ha) dan dosis pupuk TSP (40, 80, dan 120 kg/ha) yang diulang sebanyak tiga kali. Data dianalisis menggunakan uji F dan nilai probabilitas $< 0,05$ maka dilanjutkan dengan *Duncan's Multiple Range Test* (DMRT) pada taraf 5%. Hasil penelitian menunjukkan adanya interaksi antara dosis pupuk Urea dan TSP terhadap rasio tajuk akar, laju tumbuh relatif, tinggi tanaman, jumlah floret malai utama, jumlah biji malai utama, dan bobot 1.000 butir. Peningkatan dosis Urea dan TSP cenderung meningkatkan serapan Nitrogen tanaman, sedangkan serapan Fosfor meningkat pada taraf Urea 75 dan 150 kg/ha, tetapi menurun pada taraf Urea 225 kg/ha. Dosis pupuk Urea 225 kg/ha memberikan pengaruh terbaik terhadap luas daun bendera, bobot biji malai utama, hasil per petak, dan hasil per hektar, sedangkan dosis pupuk TSP 120 kg/ha memberikan pengaruh terbaik terhadap bobot biji malai utama, hasil per petak, dan hasil per hektar. Hasil penelitian ini menunjukkan bahwa kombinasi pemupukan Urea dan TSP berperan penting dalam meningkatkan agrofisiologis gandum varietas GURI 6 UNAND serta berpotensi menjadi dasar rekomendasi pemupukan untuk mendukung pengembangan budidaya gandum di dataran tinggi tropis.

SUMMARY

Imelinda. The Effect of Combined Urea and TSP Fertilizer Dosages on the Agrophysiological Traits of Wheat (*Triticum aestivum* L.) GURI 6 UNAND Variety. Supervised by Irfan Suliansyah and Nurwanita Ekasari Putri

Wheat (*Triticum aestivum* L.) is a strategic food commodity widely used as a raw material in various food products, such as noodles, bread, and biscuits. Wheat consumption and demand in Indonesia continue to increase, while domestic production remains limited, resulting in a growing dependence on wheat imports. One effort to reduce this dependence is through the development of domestic wheat cultivation, particularly in highland areas that possess environmental conditions suitable for wheat growth. The development of wheat cultivation in tropical environments requires the application of appropriate cultivation technologies, one of which is the management of Nitrogen and phosphorus fertilization, as these nutrients play essential roles in supporting plant growth, development, and yield. This study aimed to determine the interaction between various Urea and Triple Super Phosphate (TSP) fertilizer dosages, to identify the optimal Urea fertilizer dosage, and to identify the optimal TSP fertilizer dosage for the agrophysiological traits of wheat cultivar GURI 6 UNAND. The research was conducted in Jorong Galagah, Nagari Alahan Panjang, Lembah Gumanti Subdistrict, Solok Regency, West Sumatra, at an altitude of approximately 1,616 meters above sea level, from September to December 2025. Observations of agronomic variables were performed at the Agronomy Laboratory of Andalas University, while analyses of total chlorophyll content as well as Nitrogen and phosphorus uptake were carried out at PT Wiwiadi Bintang Sains, Limau Manis, Padang. The experiment used a factorial Completely Randomized Design with two factors, namely Urea fertilizer dosages (75, 150, and 225 kg/ha) and TSP fertilizer dosages (40, 80, and 120 kg/ha), each replicated three times. Data were analyzed using the F-test and followed by Duncan's Multiple Range Test (DMRT) at the 5% significance level. The results showed an interaction between Urea and TSP fertilizer dosages affecting the root-shoot ratio, relative growth rate, plant height, number of florets per spike, number of grains per spike, and 1,000-grain weight. Increasing Urea and TSP dosages tended to increase plant Nitrogen uptake, while phosphorus uptake increased at Urea levels of 75 and 150 kg/ha but decreased at 225 kg/ha. A Urea dosage of 225 kg/ha had the best effect on flag leaf area, grain weight per spike, yield per plot, and yield per hectare, while a TSP dosage of 120 kg/ha had the best effect on grain weight per spike, yield per plot, and yield per hectare. These findings indicate that the combination of Urea and TSP fertilization plays an important role in enhancing the agrophysiological traits of wheat cultivar GURI 6 UNAND and has the potential to serve as a basis for fertilizer recommendations to support the development of wheat cultivation in tropical highland regions.