RINGKASAN

Cabai merah keriting (*Capsicum annuum* L.) merupakan salah satu komoditas hortikultura penting di Indonesia yang memiliki nilai ekonomi tinggi serta permintaan pasar yang terus meningkat. Upaya peningkatan produktivitas dapat dilakukan melalui pemanfaatan pupuk organik, di antaranya pupuk kandang ayam dan kambing. Kotoran ayam diketahui kaya akan nitrogen yang menunjang fase vegetatif, sementara kotoran kambing memiliki rasio C/N lebih seimbang sehingga efek residunya lebih lama. Kombinasi keduanya berpotensi menghasilkan pertumbuhan dan produksi cabai merah keriting yang lebih optimal.

Penelitian ini dilaksanakan di lahan percobaan Fakultas Pertanian Universitas Islam Sumatera Utara pada bulan Januari–April 2025 dengan menggunakan Rancangan Acak Kelompok (RAK) faktorial. Faktor pertama adalah dosis pupuk kandang ayam, sedangkan faktor kedua adalah dosis pupuk kandang kambing, dengan beberapa taraf perlakuan dan tiga kali ulangan. Variabel pengamatan meliputi tinggi tanaman, jumlah cabang, diameter batang, umur berbunga, panjang buah, bobot buah per tanaman, bobot segar tanaman, dan hasil panen.

Hasil penelitian menunjukkan bahwa pupuk kandang ayam berpengaruh nyata terhadap pertumbuhan vegetatif, terutama tinggi tanaman, jumlah cabang, dan percepatan umur berbunga. Pupuk kandang kambing berpengaruh lebih konsisten terhadap hasil generatif, khususnya panjang buah, bobot buah, dan bobot segar tanaman. Interaksi kedua pupuk memberikan efek sinergis yang lebih tinggi dibandingkan penggunaan tunggal, dengan kombinasi dosis tertentu menghasilkan pertumbuhan serta produksi terbaik.

Dengan demikian, penggunaan kombinasi pupuk kandang ayam dan kambing dapat dijadikan alternatif teknologi pemupukan organik yang berkelanjutan untuk meningkatkan produktivitas cabai merah keriting sekaligus memperbaiki kesuburan tanah.

SUMMARY

Curly red chili (Capsicum annuum L.) is one of Indonesia's important horticultural commodities, which has high economic value and increasing market demand. Efforts to increase productivity can be made through the use of organic fertilizers, including chicken and goat manure. Chicken manure is known to be rich in nitrogen, which supports the vegetative phase, while goat manure has a more balanced C/N ratio, resulting in a longer residual effect. The combination of the two has the potential to produce more optimal growth and production of curly red chili peppers.

This study was conducted at the experimental field of the Faculty of Agriculture, University of North Sumatra, from January to April 2025 using a factorial randomized block design (RAK). The first factor was the dose of chicken manure, while the second factor was the dose of goat manure, with several treatment levels and three replicates. The observation variables included plant height, number of branches, stem diameter, flowering age, fruit length, fruit weight per plant, fresh plant weight, and crop yield.

The results of the study indicate that chicken manure has a significant effect on vegetative growth, particularly plant height, number of branches, and flowering time. Goat manure has a more consistent effect on generative yield, specifically fruit length, fruit weight, and fresh plant weight. The interaction between the two types of manure produces a higher synergistic effect than either used alone, with certain combinations of doses resulting in optimal growth and production.

Therefore, the use of a combination of chicken and goat manure can be used as an alternative sustainable organic fertilization technology to increase the productivity of curly red chili peppers while improving soil fertility.