

INTISARI

TANGGAPAN TANAMAN KANGKUNG (*Ipomoea reptans* Poir.), BAYAM (*Amaranthus tricolor* L.), DAN SELADA (*Lactuca sativa* L.) TERHADAP PENGAYAAN KALSIUM SECARA HIDROPONIK

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Tiga percobaan ini bertujuan untuk mengetahui pengaruh penambahan Ca dalam larutan nutrisi terhadap pertumbuhan, hasil dan kadar kalsium (%) serta kandungan kalsium (mg/tanaman) pada tanaman kangkung, bayam, dan selada yang ditanam secara hidroponik. Penelitian dilaksanakan di rumah kaca Jurusan Budidaya Pertanian, Fakultas Pertanian Universitas Gadjah Mada mulai bulan Juni sampai Agustus 2012. Rancangan yang digunakan untuk masing-masing percobaan adalah Rancangan Acak Lengkap (RAL) dengan tiga ulangan. Perlakuan pada penelitian ini merupakan perbedaan konsentrasi kalsium dalam larutan nutrisi yaitu 0, 100, 200, 300, dan 400 ppm. Sumber senyawa Ca yang digunakan adalah $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$.

Hasil penelitian menunjukkan bahwa peningkatan pemberian konsentrasi Ca sampai konsentrasi Ca 400 ppm dalam larutan nutrisi tidak meningkatkan proses fisiologis, pertumbuhan, dan hasil kangkung dan bayam, namun mampu meningkatkan proses fisiologis, pertumbuhan, dan hasil pada tanaman selada. Peningkatan konsentrasi Ca sampai 400 ppm dalam larutan nutrisi selalu diikuti oleh peningkatan kadar dan kandungan kalsium dalam jaringan daun tanaman kangkung dan bayam. Kadar optimum Ca pada selada dapat dicapai pada 175 ppm, namun kandungan kalsium dalam jaringan daun masih meningkat sampai pemberian Ca 400 ppm. Kesimpulan, bila seseorang mengkonsumsi harian 250 g daun kangkung, bayam, dan selada, kangkung mampu menyumbang 16%, bayam menyumbang 12,3% dan selada hanya menyumbang 6,4% dari kebutuhan Ca manusia yaitu 800mg Ca/orang/hari.

Kata kunci: kalsium, kangkung, bayam, selada, hidroponik

ABSTRACT

*RESPONSE OF LAND KALE (*Ipomoea reptans* Poir.), SPINACH (*Amaranthus tricolor* L.), AND LETTUCE (*Lactuca sativa* L.) TO CALCIUM ENRICHMENT IN HYDROPONIC CULTURE SYSTEM*

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Three experiments were conducted to study the effect of Ca enrichment on growth, yield, calcium levels (%), and calcium content (mg/plant) of land kale, spinach, and lettuce in hydroponic culture system. The research was conducted in the greenhouse of Department of Agriculture, Faculty of Agriculture, Gadjah Mada University from June until August 2012. The design used for each experiment was Completely Randomized Design (CRD) with three replications. The treatments applied in the study were Ca concentrations consisted of 0, 100, 200, 300, and 400 ppm. Sources of Ca compound used was $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$.

The results showed that any concentration of calcium up to 400 ppm added in the nutrient solution did not improve physiological processes, growth, and yield of land kale and spinach. However, the physiological processes, growth, and yield of lettuce was increased by addition of 400 ppm Ca in the nutrient solution. Increasing the concentration of Ca up to 400 ppm in the nutrient solution resulted in the increase of Ca levels and Ca content in the leaf tissue of land kale and spinach. The optimum level of Ca in lettuce was obtained by Ca 175 ppm, while Ca content increased along with the concentration of Ca added in the nutrient solution. In conclusion, when a person daily consumes 250 g land kale, spinach, or lettuce, the land kale contributes 16 %, while spinach contributes 12,3 %, and lettuce contributes only 6,4 % of Ca needed by human being which is 800 mg Ca/person/day.

Keywords: calcium, land kale, spinach, lettuce, hydroponic