



PEMANFAATAN ARANG BERBAHAN BAKU EKSKRETA AYAM SEBAGAI MEDIA TANAM DALAM PERTUMBUHAN TANAMAN JAGUNG (*Zea mays*)

INTISARI

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Penelitian ini bertujuan untuk mengetahui dan membandingkan pertumbuhan tanaman *Zea mays* menggunakan media tanam yang terbuat dari limbah peternakan yaitu eksreta ayam pada level yang berbeda. Penelitian ini menggunakan arang berbahan baku eksreta ayam. Tanah dan arang berbahan baku eksreta ayam dilakukan uji awal terlebih dahulu yaitu uji kadar air, kadar abu, pH, C, dan N. Penelitian ini dibagi dalam 4 perlakuan yaitu kontrol yang berupa tanah (p0), tanah yang dicampur dengan arang berbahan baku eksreta ayam 1% (p1), tanah yang dicampur dengan arang berbahan baku eksreta ayam 2,5% (p2), dan tanah yang dicampur dengan arang berbahan baku eksreta ayam (p3) 5%. Perlakuan tersebut dilakukan pada polybag yang berdiameter 30 cm, 1 perlakuan terdapat 3 sampel. Setelah media tanam disiapkan maka kemudian ditanam biji *Zea mays*. Proses penanaman terjadi selama 8 minggu. Penyiraman dilakukan 2 kali dalam sehari pada pukul 07.00 dan pukul 17.00. Setiap 7 hari sekali dilakukan pengukuran panjang daun, banyak daun, dan tinggi tanaman. Pada setiap minggu sudah mulai terlihat bahwa terdapat perbedaan yang signifikan pada masing-masing perlakuan. Setelah dilakukan pemanenan tanaman jagung diukur kembali panjang daun, banyak daun, panjang akar dan tinggi tanaman. Tanah bekas pemanenan juga dilakukan uji kadar air, kadar abu, pH, C, dan N. Hasil yang didapatkan pada tinggi tanaman adalah pada kontrol (p0) 83,67 cm, pada penambahan arang berbahan baku eksreta ayam 1% (p1) 128,67 cm, pada penambahan arang berbahan baku eksreta ayam 2,5% (p2) 119,3 cm, dan pada penambahan arang berbahan baku eksreta ayam 5% (p3) 99 cm. Hasil yang didapatkan pada banyak daun pada kontrol (p0) adalah 26, pada penambahan arang berbahan baku eksreta ayam 1% (p1) 45, pada penambahan arang berbahan baku eksreta ayam 2,5% (p2) 32, dan pada penambahan arang berbahan baku eksreta ayam 5% (p3) 32. Hasil yang didapatkan pada panjang akar pada kontrol (p0) 9,67 cm, pada penambahan arang berbahan baku eksreta ayam 1% (p1) 22cm, pada penambahan arang berbahan baku eksreta ayam 2,5% (p2) 17,67 cm, dan pada penambahan arang berbahan baku eksreta ayam 5% (p3) 7,67cm. Kesimpulan penelitian ini bahwa pertumbuhan yang paling optimum terjadi pada perlakuan penambahan arang berbahan baku eksreta ayam 1% (p1) dengan tinggi tanaman 128,67 cm, banyak daun 45, dan panjang akar 22 cm.

Kata Kunci : Eksreta ayam, Arang, Arang berbahan baku Eksreta ayam, Media tanam, Tanah, *Zea mays*



USE OF CHICKEN EXCRETE RAW CHARCOAL AS A GROWING MEDIUM IN PLANT GROWTH CORN (*Zea mays*)

ABSTRACT

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In this study, the development of *Zea mays* plants utilizing planting soil generated from livestock waste, specifically chicken excreta at various levels, will be determined and compared. In this investigation, charcoal generated from chicken waste was employed. First, pre-tests were conducted on soil and charcoal generated from chicken excrement, including measurements of the water, ash, pH, C, and N contents. In this investigation, there were four different treatments: control soil (p0), soil mixed with charcoal made from raw chicken excreta 1% (p1), soil mixed with charcoal made from chicken excreta 2.5% (p2), and soil combined with charcoal made from chicken excreta (p3) 5%. One treatment included three samples, and the treatment was conducted in polybags with a diameter of 30 cm. The *Zea mays* seeds are sown after the planting media has been prepared. For 8 weeks, the planting procedure takes place. Two times a day, at 7:00 and 17:00, watering is done. Leaf length, leaf count, and plant height were all measured every seven days. Every week, it has become clearer that each treatment differs significantly from the others. Leaf length, number of leaves, root length, and plant height were all measured once the corn plants had been harvested. After harvesting, the soil's water, ash, pH, C, and N contents were also examined. The plant height measurements were control (p0) 83.67 cm, 1% charcoal made from chicken excreta (p1) 128,67 cm, 2.5% charcoal made from chicken excreta (p2) 119.3 cm, and 5% charcoal made from chicken excreta (p3) 99 cm. The results were 26 for the number of leaves in the control (p0), 45 for the addition of charcoal made from chicken excreta at 1%, 32 for the addition of charcoal at 2.5%, and 32 for the addition of charcoal at 5%. The measured root lengths were 9.67 cm for the control (p0), 22 cm for the addition of charcoal made from chicken excreta, 17.67 cm for the addition of charcoal made from chicken excreta at a 2.5% concentration, and 7.67 cm for the addition of charcoal made from chicken excreta at a 5% concentration. According to the study's findings, growth was most optimal when 1% (p1) of charcoal derived from chicken excrement was added to plants with a height of 128.67 cm, 45 leaves, and 22 cm roots.

Keywords: Soil, *Zea mays*, Planting media, Charcoal, Charcoal derived from chicken excreta