Effect of Supplementation of Garlic Husk Extract to The Feed of Dairy Goats on The Fermentation Product and Ruminal Microbe

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Abstract	Abstract. This study was designed to examine the effects of supplementation with husk extract of garlic (Allium sativum) in the feed of dairy goats containing sufficient amount of ÃƒÂ,Ã,Â organic minerals (Selenium, Chromium and Zinc) on the fermentation and microbes in the rumen. The materials used in this study were the rumen fluid of goat, goat ration composed of 60% grass, 35% tofu, and 5% concentrate (CP 11.90%, CF 28.57%, 60.94% TDN). The research method was experimental using a completely randomized design (CRD). The treatments were tested, namely R0: control diet; R1: R0 + Cr + 1.5 ppm 40 ppm Zn lysinat + 0.3 ppm Se; R2: R1 + 15 ppm ÃƒÂ,Ã,Â of garlic husk extract (Allium sativum); R3: R1 + 30 ppm garlic husk extracts ; R4: R1 + 45 ppm ÃƒÂ,Ã,Â of garlic husk extrat; and R5: R1 + 60 ppm ÃƒÂ,Ã,Â garlic husk extract. The results showed that the treatment effect on a decrease in dry matter (DMD) and ÃƒÂ,Ã,Â organic matter digestibility (OMD), protozoa and total gas in total, however, there was an increase in total VFA concentrations. The treatment gave a linear response to the DMD, ie Y = 50.412 - 0.1651XÃƒÂ,Ã,Â and OMD,ÃƒÂ,Ã,Â Y = -0.1768X + 50.319. However, in response VFA is cubic, with a line equation Y = 203.16 - 3.2646X + 0.2447X2- 0.0033X3. It culd be concluded that ÃƒÂ,Ã,Â supplementation of garlic husk extract and organic minerals can improve rumen fermentation with the best level at 25 ppm.Key words: ÃƒÂ,Ã,Â Garlic husk extract, micro minerals, rumen fermentation, dairy goatÃƒÂ,Ã,Â Abstrak.ÃƒÂ,Ã,Â Penelitian ini dirancang untuk mengkaji pengaruh suplementasi ekstrak kulit bawang putih (Allium sativum) dalam pakan kambing perah yang tercukupi mineral organik (Selenium, Chromium dan Seng) terhadap hasil fermentasi dan mikrobaÃƒÂ,Ã,Â pada rumen. Materi yang digunakan adalahÃƒÂ,Ã,Â cairan rumen kambing, ransum kambing yang tersusun atas 60% rumput gajah, 35% ampas tahu dan 5% konsentrat (PK 11,90%, SK 28,57%, TDN 60,94%). Metode penelitian adalah eksperimental menggunakan Rancangan Acak Lengkap (RAL).ÃƒÂ,Ã,Â Perlakuan yang diujicobakan yaitu R0: pakan kontrol; R1: R0 + 1,5 ppm Cr + 40 ppm Zn lysinat + 0,3 ppm Se; R2: R1 + 15 ppm ekstrak kulit bawang putih (Allium sativum); R3: R1 + 30 ppm ekstrak kulit bawang putih ; R4: R1 + 45 ppm ekstrak kulit bawang putih ; dan R5: R1 + 60 ppm ekstrak kulit bawang putih . Hasil penelitian menunjukkan bahwa perlakuan berpengaruh terhadap penurunan kecernaan bahan kering (KBK) dan kecernaan bahan organik (KBO), protozoa dan gas total, namun demikian terjadi peningkatan konsentrasi VFA total. Perlakuan memberikan respon linierÃƒÂ,Ã,Â terhadapÃƒÂ,Ã,Â Kecernaan Bahan Kering, yaitu Y = 50.412 - 0,1651X ÃƒÂ,Ã,Â danÃƒÂ,Ã,Â KBO, Y = -0,1768X + 50,319. Namun demikian pada ÃƒÂ,Ã,Â VFAÃƒÂ,Ã,Â ÃƒÂ,Ã,Â responnya adalah kubik, dengan persamaan garis Y = 203,16 ÃƒÂ¢Ã,Â€Ã,Â“ 3,2646X + 0,2447X2 ÃƒÂ¢Ã,Â€Ã,Â“ 0,0033X3.ÃƒÂ,Ã,Â Dapat disimpulkan bahwa suplementasi ekstrak kulit bawang putih dan mineral organik dapat memperbaiki fermentasi rumen dengan level terbaik 25 ppm.ÃƒÂ,Ã,Â Kata kunci : ekstrak kulit bawang putih, mineral mikro, fermentasi rumenÃƒÂ,Ã,Â
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