

**KUALITAS UDARA DAN AIR DI SEKITAR KANDANG TERNAK
RUMINANSIA KECIL DI TIGA KECAMATAN KABUPATEN KULON PROGO
DAERAH ISTIMEWA YOGYAKARTA
PADA MUSIM KEMARAU**

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas udara dan air di sekitar kandang ternak ruminansia kecil di tiga kecamatan kabupaten Kulon Progo. Kandang yang digunakan ada sembilan buah, dengan jumlah ternak <6 dan ≥6 ekor perkandang. Sampel udara diambil pada tiga titik yang berbeda, yaitu 0 m, 20 m searah arah angin, dan 20 m berlawanan arah angin dari kandang. Sampel air diambil dari tujuh buah sumur dan mata air yang berada kurang lebih 10 m dari lokasi kandang ternak. Sampel udara dan air tersebut dibawa ke Laboratorium Balai Teknik Kesehatan Lingkungan Yogyakarta untuk dianalisis kadar gas SO₂, NO₂, H₂S, NH₃, CH₄, dan kuantitas bakteri *coliform total* serta *coliform tinja*. Data dianalisis menggunakan metode analisis variansi pola faktorial 3x2 untuk uji kualitas udara dan metode pola searah untuk uji kualitas air. Hasil analisis statistik menunjukkan bahwa jumlah ternak, jarak kandang, dan interaksi keduanya tidak berpengaruh terhadap kadar gas SO₂, NO₂, H₂S, dan NH₃. Kadar gas CH₄ tidak terdeteksi pada tiap kandang. Rerata kadar gas SO₂, NO₂, H₂S, maupun NH₃ masih berada di dalam ambang batas yang diperbolehkan. Kadar gas yang dihasilkan cenderung meningkat dengan semakin banyaknya jumlah ternak di dalam kandang. Hasil analisis statistik menunjukkan bahwa jumlah ternak berpengaruh sangat nyata (P<0,05) terhadap jumlah bakteri *coliform total* maupun *coliform tinja*. Dari hasil penelitian dapat disimpulkan bahwa kualitas udara berada pada kisaran normal, sedangkan kualitas air sudah tercemar oleh kotoran ternak.

Kata kunci : Ruminansia Kecil, Kualitas Udara, Kualitas Air

**AIR AND WATER QUALITIES LOCATED AROUND SMALL RUMINANT BARN
IN THREE DISTRICT KULON PROGO REGENCY
SPECIAL REGION OF YOGYAKARTA
AT DRY SEASON**

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ABSTRACT

The study was conducted to investigate air and water qualities around small ruminant barn in three district Kulon Progo regency. Nine barns containing <6 and ^6 small ruminant were used. The air samples were taken from three different sites are 0 m, 20 m off the barn towards the diversion of the wind (+20), and 20 m off the barn against the diversion of the wind (-20). The water samples were taken from seven wells and source, located approximately 10 m from the barn. Air and water samples were analysed at the Technical of Environmental Health Policlinical Yogyakarta to determine the gasses concentration of SO₂, NO₂, H₂S, NH₃, CH₄ and the number of *total coliform bacteria* and *faecal coliform bacteria*. The data of air quality were analysed by *univariate analysis of variance* and *oneway analyses* for water quality. The results indicated that the concentration of SO₂, NO₂, H₂S, and NH₃ were not influenced by the number of small ruminant in barn, the distance, even the interaction of them. CH₄ gas was not detected in every barn. The concentration range of SO₂, NO₂, H₂S, and NH₃ were below the treshold. Concentration of the gasses inclined towards to the large number of goats or sheeps in barn. Statistical analysed proved that the number of *total coliform bacteria* and *faecal coliform bacteria* were significantly influenced ($P < 0.05$) by the number of small ruminant in barn. The results of this study indicated that the air quality were in the normal range, when water quality were soil by waste animal.

Key words: Small Ruminant, Air Quality, Water Quality