

PROFIL LINGKUNGAN KANDANG *TUNNEL VENTILATION* TERHADAP
PRODUKSI, KINERJA REPRODUKSI DAN KONDISI FISILOGIS
SAPI PERAH DI PT. GREENFIELDS INDONESIA

INTISARI

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Penelitian ini bertujuan untuk mengetahui profil kandang *tunnel ventilation* di PT. Greenfields Indonesia meliputi suhu, kelembaban udara, intensitas cahaya, dan kecepatan angin terhadap produksi, kinerja reproduksi, dan kondisi fisiologis sapi perah di musim kemarau dan penghujan. Penelitian dilaksanakan selama Agustus dan 20 Desember 2017 sampai 5 Januari 2018 di PT. Greenfields Indonesia Malang untuk profil kandang *tunnel ventilation* dan laboratorium Ilmu Ternak Perah dan Industri Persusuan untuk analisis proksimat pakan sapi perah laktasi. Kandang yang digunakan yaitu kandang A dan B dengan jumlah *exhaust fans* yang berbeda. Sebanyak 54 dan 62 ekor sapi Friesian Holstein (FH) laktasi masing-masing di musim kemarau dan penghujan. Penelitian ini merupakan *exploratory research*. Data lingkungan mencakup suhu, kelembaban relatif, kecepatan angin, dan intensitas cahaya. Data produksi dan kualitas susu yang diambil yaitu kandungan lemak, protein, dan *total solid*. Data kinerja reproduksi yang diambil yaitu *postpartum mating* (PPM) dan *conception rate* (CR). Data kondisi fisiologis yang diambil yaitu *lay down percentage* (LDP) dan frekuensi respirasi (FR). Data di analisis menggunakan analisis regresi linear berganda dan *independent sample t test*. Penelitian ini menunjukkan kondisi lingkungan yang berbeda pada musim kemarau dan penghujan dari kondisi lingkungan luar dan dalam kandang. Hasil penelitian menunjukkan bahwa tidak terdapat perbedaan pada produksi dan kualitas susu sapi perah antar kandang dan musim. Hasil penelitian menunjukkan bahwa lingkungan mikroklimat berpengaruh tidak nyata terhadap FR dan PPM baik pada musim kemarau maupun penghujan, tetapi berpengaruh nyata terhadap LDP sapi perah di musim penghujan ($P < 0,05$). Penelitian ini memerlukan observasi lebih lanjut mengenai pengaruh kandang *tunnel ventilation* terhadap kinerja reproduksi seperti CR karena kekurangan data yang tersedia.

Kata kunci: *Tunnel ventilation*, Produksi susu, Kinerja reproduksi, Kondisi fisiologis, Sapi perah

ENVIRONMENTAL PROFILE OF TUNNEL VENTILATION BARN ON
PRODUCTION, PERFORMANCE OF REPRODUCTION, AND
PHYSIOLOGICAL CONDITIONS OF DAIRY COWS
IN PT. GREENFIELDS INDONESIA

ABSTRACT

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The objective of this study was to determine the profile of tunnel ventilation barn at PT. Greenfields Indonesia including temperature, humidity, light intensity, and wind speed on production, reproductive performance, and physiological conditions of dairy cows in the dry and wet seasons. The study was conducted during August and December 20, 2017 to January 5, 2018 at PT. Greenfields Indonesia Malang and laboratory of Dairy Science and Milk Industry for proximate analysis of cow feed. The barns used were barn A and B with different number of exhaust fans. A total of 54 and 62 Friesian Holstein (FH) lactating cows were employed for this exploratory research. Environmental data included temperature, relative humidity, wind speed, and light intensity. Data of production and quality of milk were fat, protein, and total solid content. Reproduction performance were postpartum mating (PPM) and conception rate (CR). Data of physiological conditions were lay down percentage (LDP) and respiration rate (RR). Analysis of linear multiple regression and independent sample t test were employed. This study showed the different environmental conditions in the dry and wet seasons both the outside and the inside the barn. The results showed that there was no difference in the production and quality of milk of cows between barns and seasons. The microclimate environment had no significant effect on RR and PPM both in dry and wet season, but it had significant effect on dairy cow LDP in wet season ($P < 0.05$). This study requires further observation of the effects of tunnel ventilation barns on reproductive performance such CR because of the lack of data.

Keywords: *Tunnel ventilation*, Physiological condition, Milk production, Reproduction performance, Dairy cow