

## ABSTRACT

### THE STRESS LEVEL OF CATTLE DURING SLAUGHTER IN ABATTOIR TOWARDS THE QUALITY OF MEAT

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Beef as one of human main source of protein must be worth for consumption, in good quality and produced by an abattoir (Peraturan Pemerintah Republik Indonesia nomor 95 tahun 2012, pasal 8 ayat 1). The quality level of beef is influenced by cattle's stress level before and during slaughter. Even though SNI 01-6159-1999 has stipulated the procedures to reduce cattle's stress, however it has not yet implement by all national abattoirs.

The research was aiming to evaluate cattle's stress level towards beef quality in 78 cows slaughtered in Yogyakarta, Purbalingga, and Makassar abattoirs. Cattle's background was collected thru questioners to the officials. Pre-slaughter behaviour and beef quality i.e. color and appearance were collected by observation. Beef pH was measured by pH indicator-stick. Cattle's serum was collected during slaughtered and cortisol level was then measured by Cortisol ELISA. Stress level and beef quality data were analysed descriptively using bivariate Fisher's Exact Test method.

The cortisol level analysis showed 89,7% (70 of 78) cattle were stressed but not significantly ( $P > 0,05$ ) influenced the beef quality. Despite of that 82,1% (55 of 67) of stressed cattle produced poor quality of beef (41,80% Yogyakarta; 13,43% Purbalingga; 26,87% Makassar). Thus, stressed cattle were 1,6 times as likely to produced poor quality of beef.

**Keywords:** beef quality, abattoir, stress, cortisol



## ABSTRAK

### TINGKAT STRES SAPI SAAT PEMOTONGAN DI RUMAH PEMOTONGAN HEWAN (RPH) TERHADAP KUALITAS DAGING

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Daging sebagai sumber utama protein bagi manusia harus layak konsumsi, berkualitas baik serta berasal dari RPH (Peraturan Pemerintah Republik Indonesia nomor 95 tahun 2012, pasal 8 ayat 1). Tingkat kualitas daging salah satunya dipengaruhi oleh tingkat stres hewan sebelum dan saat pemotongan. Walaupun SNI 01-6159-1999 sudah menetapkan prosedur dalam menangani stres hewan potong, namun belum semua RPH melaksanakan prosedur tersebut.

Evaluasi tingkat stres hewan terhadap kualitas daging yang dihasilkan dalam penelitian ini dilakukan terhadap 78 ekor sapi yang dipotong di RPH Yogyakarta, Purbalingga dan Makassar. Data sapi diambil melalui kuesioner terhadap petugas berwenang. Data tingkah laku sebelum pemotongan dan kualitas daging hasil pemotongan berupa warna dan penampakan diambil secara observasional. pH daging diukur menggunakan pH *indicator-stick*. Serum hewan dikoleksi saat hewan dipotong kemudian kadar kortisol ditentukan menggunakan *Cortisol ELISA*. Analisis tingkat stres hewan terhadap kualitas daging yang dihasilkan dianalisa secara deskriptif dengan metode bivariat *Fisher's Exact Test*.

Hasil pengukuran konsentrasi kortisol menunjukkan 89,7% (70 dari 78) sapi mengalami stres, (41,01% Yogyakarta; 23,07% Purbalingga; 25,63% Makassar) tetapi tidak memiliki hubungan signifikan ( $P > 0,05$ ) terhadap kualitas daging yang dihasilkan. Walaupun demikian, 82,1% (55 dari 67) daging asal hewan stres memiliki kualitas buruk (41,80% Yogyakarta; 13,43% Purbalingga; 26,87% Makassar). Oleh sebab itu, sapi stres memiliki tingkat resiko menghasilkan daging kualitas buruk 1,6 kali lebih besar dibandingkan sapi yang tidak stres.

**Kata kunci:** kualitas daging, Rumah Pemotongan Hewan (RPH), stres, kortisol