

SUPLEMENTASI *PREMIX* MINERAL BERKADAR *ZINC* (Zn)
DAN SELENIUM (Se) TINGGI DALAM RANSUM SAPI
REPEAT BREEDER TERHADAP STATUS MINERAL DARAH,
HORMON REPRODUKSI, DAN KEBUNTINGAN

INTISARI

Adriawan Zainuddin
20/466760/PPT/01102

Kasus *repeat breeder* banyak dilaporkan oleh peternak sapi potong khususnya di Kabupaten Sleman, Daerah Istimewa Yogyakarta, Indonesia. Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi *premix* mineral (PM) berkadar tinggi *zinc* dan selenium terhadap status mineral darah, hormon reproduksi, *services per conception* (S/C), dan angka kebuntingan pada sapi betina *repeat breeder*. Enam-belas ekor sapi persilangan Simmental dibagi secara acak menjadi dua kelompok *treatment* ($n=8$ /kelompok). Masing-masing kelompok diberi pakan dasar yang sama: hijauan dan konsentrat, tetapi kadar suplementasi mineralnya berbeda, dimana PM ditambahkan 0,5 kg/100 kg konsentrat untuk kelompok suplementasi 0,5%, sedangkan kelompok suplementasi 1,0% diberi PM 1 kg/100 kg konsentrat. Pemberian pakan hijauan maksimal 25 kg/hari dan konsentrat 9 kg/hari (*as-fed basis*) selama tiga bulan. Pengambilan sampel darah dilakukan pada awal dan akhir *treatment*. Sinkronisasi estrus dilakukan setelah tiga minggu *treatment* pakan, melalui injeksi 5 ml prostaglandin F2 α (LutalyseTM) via intramuscular. Gejala estrus diamati dua hari kemudian. Sapi estrus diinseminasi buatan (IB) dengan sperma beku Limousin yang telah dicairkan. *Recording* IB selama masa *treatment* digunakan untuk menghitung S/C. Diagnosis kebuntingan dilakukan pada hari ke-90 pasca-IB dengan palpasi transrektal. Sampel serum dianalisis untuk status mineral (Zn, Se) dan hormon. Hasil penelitian menunjukkan tidak ada perbedaan signifikan pada Zn dan hormon serum, adapun Se serum hasilnya tidak terdeteksi ($<0,05$ g/dL). Nilai S/C kedua perlakuan menurun secara signifikan ($P<0,05$) dan angka kebuntingan pada kelompok suplementasi 0,5 dan 1,0% adalah 50% dan 62,5%. Disimpulkan bahwa suplementasi PM dengan kedua level dapat meningkatkan kinerja reproduksi sapi *repeat breeder* persilangan Simmental.

Kata kunci: *Premix Mineral, Status Zn, Service per Conception, Kebuntingan, Repeat breeder, Sapi Simental Crossbreed*

**SUPPLEMENTATION OF HIGH ZINC (Zn) AND SELENIUM (Se)
PREMIX MINERALS IN REPEAT BREEDER COW RATION
ON BLOOD MINERAL STATUS, REPRODUCTIVE HORMONES,
AND PREGNANCY RATE**

ABSTRACT

Adriawan Zainuddin
20/466760/PPT/01102

Repeat breeder was mostly cases reported by cattle farmers, especially in Sleman Regency, Special Region of Yogyakarta, Indonesia. This study aimed to determine the supplementation effect of high zinc and selenium premix mineral (MP) in serum minerals status, reproductive hormones, services per conception (S/C), and pregnancy rate of repeat breeder cows. Sixteen Simmental Crossbreed cows were randomly divided into two treatment groups (n=8/group). Each group was treated with the same basic diet: forage and concentrate, but different in minerals supplementation levels, where the MP was added to 0.5 kg/100 kg of concentrate for the 0.5% supplementation group, while the 1.0% supplementation group was added 1 kg/100 kg of concentrate diet. The forage and concentrate were maxima given 25 kg and 9 kg/day (as-fed basis) for three months. Blood sampling was done at the beginning and the end of treatments. Estrus synchronization was conducted after three weeks of dietary treatment by injected 5 ml of prostaglandin F2 α (LutalyseTM) via intramuscular, and two days later estrus signs were observed. Eestrus cows were artificially inseminated (AI) with post-thawed frozen Limousin sperm. AI recording during the treatment period was used to enumerate S/C. Pregnancy diagnosis was carried out at 90th-day post-AI by transrectal palpation. The serum samples were analysed for minerals (Zn, Se) and reproductive hormones status. The results showed no significant difference in serum Zn and hormones, whilst serum Se was not detected (<0.05 g/dL). The S/C values of both treatments decrease significantly (P<0.05) and the pregnancy rate in 0.5 and 1,0% supplementation were 50% and 62.5%. It was concluded that MP supplementation with both levels could improve the reproductive performance of Simmental Crossbreed repeat breeder cows.

Keywords: Mineral Premix, Serum Zn, Service per Conception, Pregnancy Rate, Repeat breeder, Simental Crossbreed Cows