

**PENGARUH KONSENTRASI MEDIUM GRADIEN PERCOLL DAN WAKTU
INKUBASI TERHADAP KUALITAS SEMEN CAIR DAN BEKU
HASIL SEPARASI SEKS PADA DOMBA DORPER**

ABSTRAK

**Dinda Amallia Kurniati Nurjannah
D2A023018**

Penelitian bertujuan untuk mengkaji pengaruh konsentrasi medium percoll dan lama waktu inkubasi pada kualitas semen cair dan beku Domba Dorper jantan hasil separasi seks. Materi penelitian menggunakan seekor Domba Dorper jantan usia 24 bulan dengan bobot tubuh ± 50 kg. Penelitian dilakukan secara eksperimental menggunakan rancangan acak kelompok (RAK) pola faktorial 2×3 dengan 4 ulangan. Faktor pertama berupa konsentrasi gradien medium percoll (g) yang terdiri dari g_1 (45:90%) dan g_2 (30:70%). Faktor kedua berupa lama waktu inkubasi (t) yang terdiri dari t_1 (30 menit), t_2 (45 menit), dan t_3 (60 menit). Variabel yang diukur meliputi motilitas, viabilitas, abnormalitas, dan konsentrasi spermatozoa pada semen cair hasil separasi seks serta pada semen beku *post thawing*. Spermatozoa hasil separasi seks yang diuji yaitu spermatozoa pembawa kromosom Y untuk menghasilkan peluang anakan berjenis kelamin jantan sebagai kebutuhan ternak pedaging, yang dibuktikan melalui pengukuran morfometrik. Hasil penelitian menunjukkan adanya interaksi antara konsentrasi medium gradien percoll dengan lama waktu inkubasi terhadap motilitas *post thawing*, serta viabilitas semen cair pasca separasi seks dan semen beku *post thawing*. Waktu inkubasi berpengaruh nyata ($P < 0,05$) terhadap motilitas spermatozoa semen cair pasca separasi seks, namun tidak berpengaruh nyata ($P > 0,05$) terhadap abnormalitas dan konsentrasi spermatozoa. Ulangan perlakuan (blok) berpengaruh nyata ($P < 0,05$) terhadap abnormalitas spermatozoa pasca separasi seks. Berdasarkan uji Duncan diperoleh kualitas spermatozoa Y terbaik yaitu dengan rata-rata motilitas dan viabilitas tertinggi secara berurutan sebesar 63,75% (g_1t_1) dan 71,37% (g_2t_1) (pasca separasi seks), serta 13,75% (g_1t_1, g_2t_1) dan 20,37% (g_1t_1) (*post thawing*). Abnormalitas tertinggi yaitu pada blok (ulangan) 4 dengan rata-rata 10,33%. Penelitian disimpulkan bahwa untuk memperoleh kualitas spermatozoa Y terbaik dengan nilai yang konsisten yaitu menggunakan konsentrasi medium 45:90% dengan lama waktu inkubasi 30 menit dalam suhu 37°C.

Kata Kunci: Separasi seks spermatozoa; medium percoll; waktu inkubasi; semen cair; semen beku.

**THE EFFECT OF PERCOLL GRADIENT MEDIUM CONCENTRATION AND INCUBATION TIME
ON THE QUALITY OF LIQUID AND FROZEN SEMEN RESULTS OF
SEX SEPARATION IN DORPER SHEEP**

ABSTRACT

**Dinda Amallia Kurniati Nurjannah
D2A023018**

This study aims to examine the effect of percoll medium concentration and incubation time on the quality of liquid and frozen semen of male Dorper Sheep from sex separation. The materials used a 24-month old male Dorper Sheep with a body weight of ± 50 kg. The study was conducted experimentally with a randomized block design (RBD) factorial pattern 2×3 with 4 replications. The first factor was the concentration gradient of percoll medium (g) consisting of g_1 (45:90%) and g_2 (30:70%). The second factor was the incubation time (t) consisting of t_1 (30 minutes), t_2 (45 minutes), and t_3 (60 minutes). The variables measured included motility, viability, abnormality, and spermatozoa concentration in liquid semen from sex separation and frozen semen post thawing. The spermatozoa from sex separation tested were spermatozoa carrying Y-chromosome to produce the opportunity for male offspring as needed by meat livestock, as evidenced by morphometric measurements. The results showed an interaction between the concentration of percoll gradient medium and incubation time on post-thawing motility, viability of liquid semen after sex separation and frozen semen post-thawing. Incubation time had a significant effect ($P < 0.05$) on the motility of liquid semen after sex separation, but had no significant effect ($P > 0.05$) on spermatozoa abnormalities and concentrations. Repeated treatments (blocks) had a significant effect ($P < 0.05$) on spermatozoa abnormalities after sex separation. Based on Duncan's test, the best Y-sperm quality was obtained with the highest average motility and viability respectively of 63.75% (g_1t_1) and 71.37% (g_2t_1) (post-sex separation), and 13.75% (g_1t_1 , g_2t_1), 20.37% (g_1t_1) (post-thawing). The highest abnormality was in block (replication) 4 with average of 10.33%. The study concluded that to obtain the best Y-sperm quality with consistent values, a medium concentration of 45:90% was used with an incubation time of 30 minutes at 37°C.

Keywords: Sperm sex separation; percoll medium; incubation time; liquid semen; frozen semen.