ABSTRAK

PENGARUH PENAMBAHAN L-CARNITINE DENGAN DOSIS YANG BERBEDA DALAM BAHAN PENGENCER TRIS KUNING TELUR TERHADAP KUALITAS SEMEN CAIR DOMBA EKOR TIPIS

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Penelitian ini bertujuan untuk mengetahui pengaruh penambahan L-Carnitine terhadap motilitas, viabilitas, dan abnormalitas semen cair Domba Ekor Tipis dalam pengencer tris kuning telur. Penelitian ini dilaksanakan pada tanggal 7-8 Desember 2023 di Jurusan Peternakan, Universitas Lampung. Penelitian ini dilakukan menggunakan Rancangan Acak Lengkap dengan 4 perlakuan dan 4 ulangan. Perlakuannya adalah P0: kontrol, P1: penambahan L-Carnitine sebanyak 0,6 mg/100 ml pengencer, P2: penambahan L-Carnitine sebanyak 1,2 mg/100 ml pengencer dan P3: penambahan L-Carnitine sebanyak 2,4 mg/100 ml pengencer. Data motilitas, viabilitas, dan abnormalitas dianalisis ragam dengan taraf 5% kemudian motilitas dan viabilitas diuji lanjut polinomial ortogonal. Hasil penelitian ini menunjukkan bahwa penambahan L-Carnitine pada pengencer tris kuning telur tidak berpengaruh nyata terhadap motilitas, viabilitas, dan abnormalitas spermatozoa. Hasil polinomial ortogonal motilitas pascapengenceran menunjukkan persamaan $Y = 64{,}752 – 2{,}2519\ X – 0{,}8996\ X^2$, X (dosis optimal) sebesar 1,25 mg dan Y (persentase tertinggi) sebesar 62,35%. Viabilitas pascapengenceran menunjukkan persamaan $Y = 63{,}056 + 0{,}0818\ X - 0{,}6752\ X^2$, X (dosis optimal) sebesar 0,6mg dan Y (persentase tertinggi) sebesar 63,3%. Motilitas penyimpanan 3 jam menunjukkan persamaan $Y = 15{,}623 + 4{,}4394\ X – 2{,}399\ X^2$, X (dosis optimal) sebesar 0,92mg dan Y (persentase tertinggi) sebesar 17,68%. Viabilitas 3 jam penyimpanan menunjukkan persamaan $Y = 59{,}479 – 4{,}8043\ X + 1{,}6989\ X^2$, X (dosis optimal) sebesar 1,41mg dan Y (persentase tertinggi) sebesar 56,1%. Hasil penelitian ini dapat disimpulkan bahwa penambahan L-Carnitine yang optimal untuk motilitas pascapengenceran: 1,25mg/100ml, viabilitas pascapengenceran: 0,6mg/100ml, motilitas setelah 3 jam penyimpanan: 0,92mg/100ml, dan viabilitas setelah 3 jam penyimpanan: 1,41mg/100ml.

Kata kunci : Domba Ekor Tipis, L-Carnitine, Semen Cair, Spermatozoa, Tris kuning telur

ABSTRACT

THE EFFECT OF L-CARNITINE WITH DIFFERENT DOSES IN TRIS EGG YOLK DILUENT ON THE QUALITY OF THIN-TAILED SHEEP LIQUID SEMEN

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This study aims to determine the effect of the addition of L-Carnitine on the motility, viability, and abnormality of liquid semen of Thin-tailed Sheep in tris-egg yolk diluent. This research was carried out on December 7-8, 2023 at the Department of Animal Husbandry, University of Lampung. This study was conducted using a Complete Random Design with 4 treatments and 4 replicates. The treatment is P0: control, P1: 0.6 mg L-Carnitine /100 ml Tris-egg yolk diluent, P2: 1.2 mg L-Carnitine /100 ml Tris-egg yolk diluent and P3: 2.4 mg L-Carnitine /100 ml Tris-egg yolk diluent. Motility, viability, and abnormality data were analyzed at a level of 5%, then motility and viability further tested for orthogonal polynomials. The results of this study showed that the addition of L-Carnitine to the tris-egg yolk had no significant effect on the motility, viability, and abnormality of spermatozoa. The results of orthogonal polynomial motility post-dilution showed the equation $Y = 64.752 – 2.2519\ X – 0.8996\ X^2$, where X (optimal dose) was 1.25 mg and Y (highest percentage) was 62,35%. The viability post-dilution showed the equation $Y = 63.056 + 0.0818\ X - 0.6752\ X^2$, where X (optimal dose) was 0.6mg and Y (highest percentage) was 63,3%. The 3-hour storage motility shows the equation $Y = 15.623 + 4.4394\ X – 2.399\ X^2$, where X (optimal dose) is 0.92mg and Y (highest percentage) is 17,68%. The viability of 3 hours of storage showed the equation $Y = 59.479 – 4.8043\ X + 1.6989\ X^2$, where X (optimal dose) was 1.41mg and Y (highest percentage) was 56,1%. The results of this study can be concluded that the optimal addition of L-Carnitine for post-dilution motility: 1.25mg/100ml, post-dilution viability: 0.6mg/100ml, motility after 3 hours of storage: 0.92mg/100ml, and viability after 3 hours of storage: 1.41mg/100ml.

Keywords: Tris-egg yolk, L-Carnitine, Liquid Semen, Spermatozoa, Thin-Tailed sheep