ABSTRAK

PENGARUH PENAMBAHAN SARI BUAH TOMAT (*Solanum lycopersicum*) DALAM PENGENCER SITRAT KUNING TELUR TERHADAP KUALITAS SPERMATOZOA SAPI BALI SELAMA PENYIMPANAN

Oleh

Bilham Maulana Asshidiqqi

Penelitian ini bertujuan mengetahui pengaruh penambahan sari buah tomat (*Solanum lycopersicum*) dalam pengencer sitrat kuning telur terhadap kualitas spermatozoa sapi Bali selama penyimpanan, serta menentukan dosis perlakuan yang terbaik. Penelitian ini dilaksanakan pada November--Desember 2025 di UPTD BIB Provinsi Lampung menggunakan semen pejantan sapi Bali berumur 5 tahun, dengan Rancangan Acak Lengkap (RAL) 4 perlakuan dan 4 ulangan. Perlakuan terdiri atas P0 (100 ml sitrat kuning telur/SKT), P1 (100 ml SKT + 10 ml sari buah tomat/SBT), P2 (100 ml SKT + 20 ml SBT), dan P3 (100 ml SKT + 30 ml SBT). Parameter yang diamati meliputi motilitas, viabilitas, dan abnormalitas spermatozoa pascapengenceran setiap 2 jam hingga motilitas mencapai ≤ 40%. Data dianalisis menggunakan Anova taraf 5% atau 1% dan uji lanjut Beda Nyata Terkecil untuk peubah yang berbeda nyata. Hasil penelitian menunjukkan bahwa penambahan sari buah tomat dalam pengencer sitrat kuning telur berpengaruh sangat nyata ($P>0,01$) terhadap motilitas spermatozoa sapi Bali pada jam ke-4, dan ke-6; viabilitas pada jam ke-2, ke-4, ke-6, dan ke-8; serta abnormalitas spermatozoa pada jam ke-2, dan ke-8. Perlakuan berpengaruh nyata ($P<0,05$) terhadap motilitas spermatozoa sapi Bali pada jam ke-8; viabilitas pada jam ke-0; dan abnormalitas pada jam ke-4. Perlakuan berpengaruh sangat nyata ($P>0,01$) terhadap motilitas spermatozoa sapi Bali pada jam ke-4, dan ke-6; viabilitas pada jam ke-2, ke-4, ke-6, dan ke-8; serta abnormalitas spermatozoa pada jam ke-2, dan ke-8. Perlakuan tidak berpengaruh nyata ($P>0,05$) terhadap motilitas sapi Bali pada jam ke-0, dan 2, serta abnormalitas pada jam ke-0, dan ke-6. Penambahan sari buah tomat sebanyak 20 ml per 100 ml pengencer terbukti memberikan hasil terbaik dalam mempertahankan motilitas (47,50 ± 2,89%), viabilitas (48,76 ± 0,76%), dan abnormalitas spermatozoa (16,05 ± 0,11%) setelah disimpan selama 8 jam pada suhu 3—5 °C.

Kata Kunci: sapi Bali, sari buah tomat, sitrat kuning telur, spermatozoa.

ABSTRACT

EFFECT OF ADDING TOMATO JUICE (*Solanum lycopersicum*) IN EGG YOLK CITRATE DILUTION ON THE QUALITY OF SPERMATOZOA OF BALINESE CATTLE DURING STORAGE

By

Bilham Maulana Asshidiqqi

This study aims to determine the effect of the addition of tomato juice (*Solanum lycopersicum*) in egg yolk citrate diluent on the spermatozoa quality of Balinese cattle during storage, as well as determine the best treatment dose. This research was carried out in November-December 2025 at UPTD BIB Lampung Province using semen from 5-year-old Balinese cows, with a Complete Random Design (RAL) of 4 treatments and 4 replications. The treatment consisted of P0 (100 ml egg yolk citrate/SKT), P1 (100 ml SKT + 10 ml tomato juice/SBT), P2 (100 ml SKT + 20 ml SBT), and P3 (100 ml SKT + 30 ml SBT). The parameters observed included motility, viability, and abnormality of spermatozoa after dilution every 2 hours until motility reached ≤ 40%. The data was analyzed using Anova level of 5% or 1% and the Smallest Real Difference follow-up test for real differences. The results showed that the addition of tomato juice in egg yolk citrate dilution had a very pronounced effect ($P>0.01$) on spermatozoa motility of Balinese cattle at the 4th and 6th hour; viability in the 2nd, 4th, 6th, and 8th hours; as well as spermatozoa abnormalities in the 2nd and 8th hours. Treatment had a significant effect ($P<0.05$) on spermatozoa motility of Balinese cattle at the 8th hour; viability at 0 o'clock; and abnormalities at the 4th hour. The treatment had a very significant effect ($P>0.01$) on spermatozoa motility of Balinese cattle at the 4th and 6th hours; viability in the 2nd, 4th, 6th, and 8th hours; as well as spermatozoa abnormalities in the 2nd and 8th hours. Treatment had no significant effect ($P>0.05$) on the motility of Balinese cattle at 0 and 2 hours, as well as abnormalities at 0 and 6 hours. The addition of tomato juice as much as 20 ml per 100 ml of dilution was proven to give the best results in maintaining motility (47.50 ± 2.89%), viability (48.76 ± 0.76%), and spermatozoa abnormalities (16.05 ± 0.11%) after being stored for 8 hours at a temperature of 3-5 °C.

Keywords: Balinese cow, egg yolk citrate, spermatozoa, tomato juice.