# PENGARUH SUPLEMENTASI EKSTRAK MENGKUDU PADA BAHAN PENGENCER TERHADAP KUALITAS SEMEN DOMBA PADA SUHU PENYIMPANAN 5°C

## INTISARI

Norhidaya
21/486560/PPT/01178

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi ekstrak mengkudu pada bahan pengencer terhadap kualitas semen domba yang disimpan pada suhu 5°C. Semen domba peranakan Dorper ditampung dengan menggunakan vagina buatan satu kali seminggu selama dua bulan. Ekstrak mengkudu ditambahkan dalam pengencer Tris Aminomethan dengan konsentrasi: P0 = Tris Aminomethan tanpa ekstrak mengkudu; P1 = Tris Aminomethan + 2% ekstrak mengkudu; P2 = Tris Aminomethan + 4% ekstrak mengkudu; dan P3 = Tris Aminomethan + 6% ekstrak mengkudu. Variabel yang diamati adalah motalitas, viabilitas, dan fragmentasi DNA spermatozoa. Evaluasi kualitas semen domba dilakukan dengan mengamati sampel di bawah mikroskop yang dilengkapi optilab. Analisis tingkat kerusakan DNA spermatozoa menggunakan pewarnaan *methylene blue* (MB). Data persentase yang diperoleh dianalisa dengan analisis variansi (ANOVA) pola searah dengan 4 perlakuan dan 7 ulangan. Hasil penelitian menunjukkan bahwa suplementasi ekstrak mengkudu pada pengencer tris aminomethan kuning telur tidak menunjukkaan perbedaan nyata pada viabilitas spermatozoa ($P>0.05$), namun berpengaruh nyata pada motilitas dan tingkat kerusakan DNA ($P<0.05$). Rerata motilitas pada P0, P1, P2, dan P3 berturut-turut adalah: 75,71±3,45, 77,86±4,88, 82,14±3,93, dan 77,86±3,93 %, sedangkan rerata viabilitas pada P0, P1, P2, dan P3 berturut-turut adalah: 78,67±5,99, 79,78±6,35, 82,39±7,28, dan 77,53±5,08 %. Rerata kerusakan DNA pada P0, P1, P2, dan P3 berturut-turut adalah: 12,71±3,94, 9,45±1,92, 6,85±2,66, dan 10,96±2,63. Dapat disimpulkan bahwa penambahan ekstrak mengkudu 4% memberikan efek terbaik pada motilitas dan kerusakan DNA spermatozoa domba.

Kata kunci : Ekstrak mengkudu, Motilitas sperma, Kerusakan DNA spermatozoa, Semen domba, Viabilitas.

# THE EFFECT OF NONI EXTRACT SUPPLEMENTATION INTO DILUENT ON QUALITY OF STORED SHEEP SEMEN AT 5°C

## *ABSTRACT*

Norhidaya
21/486560/PPT/01178

This research aimed to investigate the effect of noni extract supplementation into a diluent on the quality of stored sheep semen at 5°C. Over a two-month period, semen from Dorper sheep was collected weekly using an artificial vagina. Noni extract was added into Tris Aminomethane diluent at three different concentrations: P0 (Tris Aminomethane without noni extract), P1 (Tris Aminomethane + 2% noni extract), P2 (Tris Aminomethane + 4% noni extract), and P3 (Tris Aminomethane + 6% noni extract). The assessed variables included spermatozoa motility, viability, and DNA fragmentation. Sheep semen quality was evaluated by microscopic observation using an optilab-equipped microscope, and spermatozoa DNA damage was analyzed through methylene blue (MB) staining. The percentage data obtained were analyzed using analysis of variance (ANOVA) Unidirectional Pattern test with 4 treatments and 7 replications. The findings revealed that noni extract supplementation into egg yolk tris aminomethane diluent did not result in a significant difference in spermatozoa viability ($P>0.05$). However, the noni extract supplementation into egg yolk tris aminomethane diluent had significant different on motility and DNA damage levels ($P<0.05$). The average motility percentages of P0, P1, P2, and P3 were 75.71±3.45, 77.86±4.88, 82.14±3.93, and 77.86±3.93%, respectively. Similarly, the average viability percentages were 78.67±5.99, 79.78±6.35, 82.39±7.28, and 77.53±5.08%, respectively. The average DNA damage values were 12.71±3.94, 9.45±1.92, 6.85±2.66, and 10.96±2.63%, respectively. In conclusion, the addition of noni extract supplementation into Tris Aminomethane diluent had an effect on the viability and DNA damage of Dorper sheep spermatozoa, with the most favorable results observed at a 4% concentration of noni fruit extract.

Keywords: Noni extract, Semen motility, Semen Viability, Spermatozoa DNA damage