

**PERAN EKSTRAK DAUN FLAMBOYAN (*DELONIX REGIA*)
DALAM MEMPERTAHANKAN KUALITAS SEMEN BEKU
POST-THAWING PADA SAPI PERANAKAN ONGOLE**

INTISARI

Christin Yoanti Parera
23/526957/PPT/01301

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi daun flamboyan pada bahan pengencer terhadap kualitas spermatozoa dan menentukan konsentrasi optimal ekstrak daun flamboyan untuk meningkatkan kualitas semen beku *post-thawing* pada Sapi Peranakan Ongole (PO). Penelitian ini dilakukan di Laboratorium Penelitian Ternak Tropik Fakultas Peternakan Universitas Gadjah Mada dan Laboratorium Semen Beku BPPTDK DIY. Penelitian ini menggunakan 30 *straw* semen beku sapi PO yang diproduksi Laboratorium Semen Beku BPPTDK DIY. Daun flamboyan diekstraksi menggunakan metode maserasi, selanjutnya diuji dengan metode diphenyl picrylhydrazil (DPPH) untuk mengetahui aktivitas antioksidan. Ekstrak daun flamboyan ditambahkan pada larutan pengencer semen dengan pada lima level konsentrasi (0%, 0,10%, 0,15%, 0,20% dan 0,25%, masing-masing enam ulangan). Setelah proses pembekuan, *straw* di *thawing* pada suhu 37°C selama 30 detik, kemudian dievaluasi motilitas, viabilitas, abnormalitas, integritas membran plasma (IMP) dan keutuhan tudung akrosom (KTA). Data dianalisis menggunakan analisis variansi (ANOVA) satu arah, dilanjutkan dengan uji Duncan's Multiple Range Test (DMRT) jika terdapat perbedaan yang signifikan. Hasil penelitian menunjukkan bahwa motilitas tidak berbeda nyata ($P > 0,05$) dengan rerata $40,16 \pm 1,32\%$ (P0), $41,00 \pm 4,73\%$ (P1), $39,50 \pm 2,66\%$ (P2), $42,83 \pm 2,48\%$ (P3) dan $39,51 \pm 2,34\%$ (P4). Namun, viabilitas, abnormalitas, IMP serta KTA berbeda signifikan ($P < 0,05$). Rerata viabilitas adalah $62,25 \pm 1,89\%$ (P0), $68,58 \pm 1,90\%$ (P1), $72,58 \pm 0,86\%$ (P2), $74,91 \pm 0,97\%$ (P3) dan $67,00 \pm 1,87\%$ (P4), sedangkan abnormalitas berturut turut $12,50 \pm 1,30\%$ (P0), $12,58 \pm 0,37\%$ (P1), $11,16 \pm 1,32\%$ (P2), $10,66 \pm 0,98\%$ (P3), $11,75 \pm 2,58\%$ (P4). Untuk IMP, nilainya adalah $61,58 \pm 1,46\%$ (P0), $71,91 \pm 2,24\%$ (P1), $71,67 \pm 2,75\%$ (P2), $76,17 \pm 1,80\%$ (P3), $71,91 \pm 1,71\%$ (P4), sedangkan KTA yaitu $61,58 \pm 1,46\%$ (P0), $65,58 \pm 1,49\%$ (P1), $67,58 \pm 1,06\%$ (P2), $70,67 \pm 1,08\%$ (P3), $68,58 \pm 0,97\%$ (P4). Dapat disimpulkan bahwa penambahan ekstrak daun flamboyan berpengaruh terhadap kualitas semen beku sapi PO *post-thawing*, khususnya pada konsentrasi 0,20% yang memberikan hasil terbaik

Kata kunci: Antioksidan, Daun flamboyan, Semen beku, Kualitas spermatozoa

**THE ROLE OF FLAMBOYANT LEAF EXTRACT (*DELONIX REGIA*)
IN MAINTAINING THE QUALITY OF POST-THAW SEMEN IN
ONGOLE CROSSBRED CATTLE**

ABSTRACT

Christin Yoanti Parera
23/526957/PPT/01301

This study aimed to determine the potential of flamboyant leaf extract as a natural antioxidant source and evaluate its effect on the quality of frozen-thawed semen from Ongole Crossbred (OC) cattle. The research was conducted at the Tropical Livestock Research Laboratory, the Faculty of Animal Science at Universitas Gadjah Mada, and the Frozen Semen Laboratory of BPPTDK DIY. A total of 30 straws of frozen PO cattle semen, produced by the BPPTDK DIY were used in this study. Flamboyant leaves were extracted using the maceration method, followed by antioxidant activity testing using the diphenyl picrylhydrazyl (DPPH) assay. The extract was added to semen extenders in five treatments: no addition of flamboyant leaf extract (P0), 0.10% extract addition (P1), 0.15% extract addition (P2), 0.20% extract addition (P3), and 0.25% extract addition (P4), each treatment with six replication. Semen was processed into straws, frozen, and stored in liquid nitrogen until use. The straws were thawed at 37°C for 30 seconds evaluated for motility (%), viability (%), abnormality (%), plasma membrane integrity (%), and acrosome cap integrity (%). The data were analyzed using one-way analysis of variance (ANOVA), followed by Duncan's multiple range test (DMRT) if significant differences were found. The results indicated that the IC50 value of flamboyant leaf extract was 13.96 ± 0.14 ppm. The addition of flamboyant leaf extract did not significantly affect motility ($P \geq 0.05$). However, viability, abnormality, plasma membrane integrity, and acrosome cap integrity of frozen-thawed semen showed significant differences ($P \leq 0.05$). The mean motility for P0, P1, P2, P3, and P4 was $40.16 \pm 1.32\%$, $41.00 \pm 4.73\%$, $39.50 \pm 2.66\%$, $42.83 \pm 2.48\%$, and $39.51 \pm 2.34\%$, respectively. The mean viability was $62.25 \pm 1.89\%$, $68.58 \pm 1.90\%$, $72.58 \pm 0.86\%$, $74.91 \pm 0.97\%$, and $67.00 \pm 1.87\%$, respectively. The mean abnormality was $12.50 \pm 1.30\%$, $12.58 \pm 0.37\%$, $11.16 \pm 1.32\%$, $10.66 \pm 0.98\%$, and $11.75 \pm 2.58\%$, respectively. The mean plasma membrane integrity and acrosome cap integrity for P0, P1, P2, P3, and P4 were $61.58 \pm 1.46\%$, $71.91 \pm 2.24\%$, $71.67 \pm 2.75\%$, $76.17 \pm 1.80\%$, $71.91 \pm 1.71\%$, and $61.58 \pm 1.46\%$, $65.58 \pm 1.49\%$, $67.58 \pm 1.06\%$, $70.67 \pm 1.08\%$, $68.58 \pm 0.97\%$, respectively. In conclusion, flamboyant leaf extract exhibits potential antioxidant activity, and the addition of 0.20% flamboyant leaf extract is considered most effective in maintaining the quality of *post-thaw* frozen semen in PO cattle.

Keyword : Antioksidan, Flamboyant leaf, Frozen semen, Sperm quality