

PENGARUH PEMBERIAN ROYAL JELLY TERHADAP GAMBARAN
HISTOLOGIS OVARIUM TIKUS PUTIH (*Rattus norvegicus*)
PENELITIAN EKSPERIMENTAL LABORATORIK

RAHAYU , SRI

Pembimbing : Dr Paulus Liben, dr, MS

ROYAL JELLY : OVARY; RATTUS NORVEGICUS

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RINGKASAN

Royal jelly merupakan cairan putih seperti susu yang dihasilkan oleh kelenjar hipofaringeal yang berada dalam kepala lebah madu pekerja. Royal jelly diproduksi sebagai produk suplemen, salah satunya penunjang vitalitas reproduksi. Diduga melalui aktivitas gonadotropin yaitu meningkatkan FSH dan LH maka dapat membantu meningkatkan fertilitas. Tujuan penelitian ini untuk mempelajari pengaruh Royal jelly yang diberikan per oral dalam beberapa dosis terhadap gambaran histologi ovarium tikus putih (*Rattus norvegicus*), yang meliputi jumlah folikel primer, folikel sekunder, folikel tersier, dan folikel de Graaf. Penelitian ini tergolong penelitian eksperimen laboratoris, jenis rancangan acak lengkap dengan kelompok eksperimen dan kelompok kontrol sebanyak 28 tikus putih (*Rattus norvegicus*) dibagi secara acak menjadi 4 kelompok masing-masing terdiri dari 7 ekor. Kelompok kontrol diberikan CMC 0.5 %, 2 ml per 200 g berat badan tikus putih per oral melalui sonde. Kelompok perlakuan Royal jelly dosis 12.5 mg / 200 g BB tikus putih/ hari, kelompok perlakuan Royal jelly dosis 25 mg / 200 g BB tikus putih/ hari, kelompok perlakuan Royal jelly dosis 37.5 mg / 200 g BB tikus putih/ hari. Pemberian perlakuan diberikan satu kali sehari, dilaksanakan selama 4 siklus birahi tikus putih atau 16 hari.

Hasil penelitian menunjukkan bahwa rerata yang terbesar dengan nilai 4,383 adalah folikel de Graaf pada kelompok perlakuan dengan Royal jelly dosis 25 mg/200 g berat badan (BB) tikus putih/hari. Hasil uji normalitas dengan one sample Kolmogorov Smirnov test bahwa variabel folikel primer, folikel sekunder, folikel tersier dan folikel de Graaf mempunyai nilai $p > 0,05$ disimpulkan data berdistribusi normal. Hasil uji homogenitas menggunakan Levene test di dapatkan nilai $p > 0,05$ disimpulkan memiliki ragam yang sama. Hasil uji beda dengan analisis ragam satu arah diperoleh hasil folikel primer, folikel tersier, dan folikel de Graaf mempunyai nilai $p > 0,05$ dan folikel sekunder mempunyai nilai $p < 0,05$ yaitu sebesar 0.049. Hasil uji BNT terdapat perbedaan yang bermakna antara kontrol dengan kelompok perlakuan Royal jelly dosis 37,5 mg / 200 g BB tikus putih/ hari dengan nilai p sebesar 0.041, kelompok perlakuan dosis 12,5 mg / 200 g BB tikus putih/ hari dengan dosis 37,5 mg / 200 g BB tikus putih/ hari dengan nilai p sebesar 0.046 dan kelompok perlakuan dosis 25 mg / 200 g BB tikus putih/ hari dengan 37,5 mg / 200 g BB tikus putih/ hari dengan nilai p sebesar 0,007. Hasil uji korelasi menggunakan uji korelasi Pearson dengan $\alpha 0,05$ didapat nilai p 0,146 untuk dosis 12,5 mg, 0.832 untuk 25 mg, dan 0.667 untuk dosis 37,5 mg maka dengan ini disimpulkan tidak terdapat hubungan yang bermakna antar dosis Royal jelly. Dengan demikian pemberian Royal jelly dengan berbagai dosis dapat meningkatkan jumlah folikel sekunder tetapi tidak memperlihatkan peningkatan pada folikel primer, tersier dan de Graaf terhadap ovarium tikus putih (*Rattus norvegicus*). Dan pada uji korelasi tidak terdapat korelasi pemberian Royal jelly dengan berbagai dosis terhadap peningkatan perkembangan folikel ovarium tikus putih (*Rattus norvegicus*) Saran yang dapat disampaikan dari penelitian ini adalah perlu dipertimbangkan penggunaan Royal jelly sebagai produk suplemen untuk merangsang kesuburan.

SUMMARY

Effect of Royal jelly Diet against to Histological Ovarium Description of White Mouse (*Rattus norvegicus*)
Sri Rahayu

Royal jelly is milky white dilution which yielded by gland of hypopharyngeal that staying in worker honeybee head. Royal jelly produced as supplement product, one of them supported of reproduction vitality. With activity of gonadotropin that is improving FSH and LH, may also cause fertility improvement. The aim of this research was to study the influence of Royal jelly that given per oral in a few dose to estimate histology of white mouse (*Rattus norvegicus*) ovary, covering the amount of primary follicle, secondary follicle, tertiary follicle and de Graaf follicle. This research pertained in research of laboratory's experiment, used randomized complete design with experiment group and control group of 28 white mouse (*Rattus norvegicus*) divided at random become 4 group, each group consist of 7 white mouse. Control group given by CMC 0.5 %, 2 ml/200g Body Weigh (BW) per oral by sonde. Royal jelly Treatment group of dose 12.5 mg/200g BW/day, Royal jelly Treatment group of dose 25 mg/200g BW/day, Royal jelly Treatment group of dose 37.5 mg/200g BW/day. The treatment was given once of a day, executed during 4 white mouse lechery cycle or 16 day. Result of research indicate that biggest average with value 4,383 was de Graaf follicle at Royal jelly Treatment group of dose 25 mg/200g BW/day. Result of normality test one sample Kolmogorov Smirnov test that the variable of primary follicle, secondary follicle, tertiary follicle and de Graaf follicle have value of $p > 0,05$, concluded that data have normal distribution. Result of homogeneity test using Levene test, get value of $p > 0,05$, concluded to have the same manner. Result of different test with one way manner analysis obtained by result of primary follicle, tertiary follicle, and follicle of de Graaf have value of $p > 0,05$ and secondary follicle have value of $p < 0,05$ that was equal to 0,049. The least significant difference test showed difference between control group and Royal jelly treatment group of dose 37,5 mg/200g BW/day with value of p equal to 0.041, treatment group of dose 12,5 mg/200g BW/day and treatment group of dose 37,5 mg/200g BW/day with value of p equal to 0.046, treatment group of dose 25 mg / 200g BW/day and treatment group of dose 37,5 mg / 200g BW/day with value of p equal to 0,007. Correlation test using Pearson correlation test with a 0,05 got value of p equal to 0,146 for dose 12,5 mg, 0.832 for dose 25 mg and 0.667 for dose 37,5 mg, according to this result concluded that there were no significant relation between the dose of Royal jelly. Thereby, the Royal jelly's giving with various dose can improve amount of secondary follicle but do not show the improvement amount of primary follicle, tertiary follicle and de Graaf follicle to white mouse (*Rattus norvegicus*) ovary. At correlation test there were no correlation of Royal jelly's giving with various dose to growth improvement of white mouse (*Rattus norvegicus*) ovary follicle. The recommendation of this research is require to be considered of Royal jelly's usage as supplement product to fertility stimulate.

ABSTRACT

Effect of Royal jelly Diet against to Histological Ovarium Description of White Mouse (*Rattus norvegicus*)

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The aim of this research was to study the Influence of Royal jelly that given per oral in a few dose to estimate histology of white mouse (*Rattus norvegicus*) ovary, covering the amount of primary follicle, secondary follicle, tertiary follicle and de Graaf follicle.

This research pertained in research of laboratory's experiment, used randomized Complete design with experiment group and control group of 28 white mice (*Rattus norvegicus*) divided at random become 4 groups, each group consist of 7 white mice. Control group given by 0.5 % CMC, 2 ml/200g Body Weigh (BW) per oral by sonde. Royal jelly Treatment group of dose 12.5 mg/200g BW/day, given by 0,625% solution, 2 ml/200g BW/day. Royal jelly Treatment group of dose 25 mg/200g BW/day, given by 0,125% solution, 2 ml/200g BW/day. Royal jelly Treatment group of dose 37.5 mg/200g BW/day, given by 1,875 solution, 2 ml/200g BW/day. The treatment was given once of a day, executed during 4 white mouse lechery cycle or 16 day. Result of different test with one way manner analysis obtained by result of primary follicle, tertiary follicle and follicle of de Graaf have value of $p > 0,05$ and secondary follicle have value of $p < 0,05$ that was equal to 0,049. The least significant difference test showed difference between control group and Royal jelly treatment group of dose 37,5 mg/200g BW/day with value of p equal to 0.041, treatment group of dose 12,5 mg/200g BW/day and treatment group of dose 37,5 mg/200g BW/day with value of p equal to 0.046, treatment group of dose 25 mg / 200g BW/day and treatment group of dose 37,5 mg / 200g BW/day with value of p equal to 0,007. Correlation test using Pearson correlation test with a 0,05 got value of p equal to 0,146 for dose 12,5 mg, 0.832 for dose 25 mg and 0.667 for dose 37,5 mg, according to this result concluded that there are no significant relation between the dose of Royal jelly. Thereby, the Royal jelly's giving with various dose can improve amount of secondary follicle but do not show amount improvement of primary follicle, tertiary follicle and de Graaf follicle to white mouse (*Rattus norvegicus*) ovary. At correlation test there were no correlation of Royal jelly's giving with various dose to growth improvement of white mouse (*Rattus norvegicus*) ovary follicle.

Key word : Royal jelly, ovary, primary follicle, secondary follicle, tertiary follicle, de Graaf follicle.