

**PENGARUH RADIASI SINAR ULTRAVIOLET DAN PEMBERIAN  
EKSTRAK BUAH JERUK (*Citrus sinensis* L. Osbeck) TERHADAP  
SINTASAN DAN RASIO SEKS KOLONI LALAT BUAH (*Drosophila  
melanogaster* Meigen, 1830)**

Oleh  
Yulia Maulita Jannah  
15/377274/BI/09441

**INTISARI**

Sinar *ultraviolet* menjadi *physical stressor* yang mengharuskan makhluk hidup menanggapi tantangan genetik untuk memodifikasi DNANYa. Radiasi sinar *ultraviolet* akan menginduksi terbentuknya *reactive oxygen species* (ROS), sehingga menimbulkan stres oksidatif. Antioksidan merupakan salah satu senyawa yang mampu menetralkan peningkatan ROS, salah satu jenis antioksidan adalah vitamin C yang terkandung pada buah jeruk dan buah pisang. Lalat buah (*Drosophila melanogaster*) sebagai salah satu serangga yang memiliki peranan yang sangat penting dalam perkembangan ilmu genetika serta dijadikan model organisme diploid di laboratorium karena ukuran kecil, mempunyai siklus hidup pendek, jumlah keturunan yang dihasilkan sangat banyak, murah biaya serta perawatannya. Penelitian ini bertujuan untuk mengetahui pengaruh medium pakan buah pisang dan buah jeruk terhadap sintasan, pengaruh rasio seks lalat buah pada radiasi dan tanpa radiasi sinar UV, dan kemampuan reaktivasi medium pakan buah jeruk dan pisang. Lalat buah diisolasi untuk mendapatkan individu *virgin*. Hasilnya dibagi dalam dua kelompok, perlakuan UV dan non-UV. Setiap perlakuan dibagi dua kelompok, pakan buah pisang dan pakan buah jeruk. Radiasi sinar UV dilakukan selama 2 jam dalam waktu 3 hari. Pengamatan dilakukan terhadap sintasan hidup dan rasio sex koloninya, pada generasi F1. Analisis data dengan *One way ANOVA* dilanjutkan uji *Tukey* dengan signifikansi 0.05 dan uji *T-test* independen. Hasil menunjukkan bahwa sinar UV dapat mempengaruhi sintasan tetapi pada rasio seks tidak terdapat beda nyata pada jantan dan betina. Sintasan lalat buah pada kontrol sebesar 66.20%, PPJ sebesar 70.13%, PIUV sebesar 50.43% dan PJUV sebesar 62.88%.

Kata Kunci: *Drosophila melanogaster*, sinar UV, sintasan, rasio sex

**EFFECT OF ULTRAVIOLET RADIATION AND TREATMENT TO ORANGE  
FRUIT EXTRACT (*Citrus sinensis* L. Osbeck) TO THE SURVIVAL RATE  
AND COLONY SEX RATIO OF FRUIT FLY (*Drosophila melanogaster*  
Meigen, 1830)**

By

Yulia Maulita Jannah

15/377274/BI/09441

**ABSTRACT**

*Ultraviolet* be *physical stressor* which requires living things respond to the challenge of genetically to modify The DNA. Ultraviolet light radiation will induce the formation of reactive oxygen species (ROS), causing oxidative stress. Antioxidants are compounds that are able to neutralize the increase in ROS. One type of antioxidant is vitamin C which is found in oranges and bananas. Fruit fly (*Drosophila melanogaster*) as one of the insects that has a very important role in the development of genetic science and is used as a model for diploid organisms in the laboratory because of its small size, short life cycle, the number of offspring produced is very large, inexpensive and maintenance. The research aims were to determine the effect of banana and citrus fruit feed medium on survival, the effect of fruit fly sex ratio on radiation and without UV radiation, and the reactivation ability of citrus and banana fruit feed medium. Fruit flies were isolated to obtain individual virgins. The experiment was divided into two groups, UV and non-UV treatment. Each treatment was divided into two groups, banana fruit feed and citrus fruit feed. UV radiation is carried out for 2 hours within 3 days. Observations were made on survival rate and sex ratio of the F1 generation colony. Data were statistical analyzed using One way ANOVA followed by Tukey test with a significance of 0.05 and T-test independent. The results showed that UV rays could affect survival but there was no significant difference in the sex ratio between males and females. The survival rate of fruit flies in the control was 66.20%, PPJ was 70.13%, PIUV was 50.43% and PJUV was 62.88%.

**Keywords:** *Drosophila melanogaster*, ultraviolet radiation, vitamin C, survival rate, sex ratios