

INTISARI

Buah salak (*Salaccazallacca* (Gaerter) Voss) merupakan komoditas hortikultura penting di Indonesia yang berpotensi dapat meningkatkan devisa negara. Tingginya produksi salak dihadapkan pada kendala ekspor akibat adanya serangan lalat buah, sehingga diperlukan teknik eradikasi yang efektif dan tidak merusak kualitas buah salak. Penelitian ini bertujuan untuk efektivitas dari radiasi gamma dalam membunuh telur dan larva lalat buah serta dampaknya pada kualitas buah salak. Metode pengujian dilakukan secara *in-vivo* alami terhadap telur dan larva instar 3 *Bactrocera carambolae*. Perlakuan iradiasi telur menggunakan dosis 0 (kontrol), 100, 150, dan 200 Gy, sedangkan larva instar 3 diuji dengan dosis 0 (kontrol), 600, 700, 800, 900, 1.000, 1.100, dan 1.200 Gy. Untuk pengujian kualitas buah, digunakan dosis 0 (kontrol), 100, 150, 200, 600, 700, 800, 900, 1.000, 1.100, 1.200 Gy. Hasil penelitian menunjukkan bahwa perlakuan iradiasi memberikan efektivitas 94.74% dalam mematikan telur pada dosis 200 Gy dan 100% membunuh larva instar 3 pada 600 Gy. Pengujian kualitas buah menunjukkan bahwa dosis iradiasi yang lebih tinggi cenderung mempertahankan atau meningkatkan kadar vitamin C, namun menurunkan tekstur/kekerasan buah salak. Iradiasi tidak mempengaruhi warna kecerahan (L) dan nilai a, tetapi mempengaruhi nilai b yang mengindikasikan buah salak menjadi lebih matang atau warna kekuningan.

Kata kunci: *Bactrocera carambolae*, Iradiasi, Salak.

ABSTRACT

Snake fruit (*Salaccazalatacca* (Gaertner) Voss) is an important horticultural commodity in Indonesia that has the potential to increase foreign exchange. The high production of salak is faced with export constraints due to fruit fly attack, so that an effective eradication technique is needed and does not damage the quality of salak fruit. This study aims to determine the effectiveness of gamma radiation in killing fruit fly eggs and larvae and its impact on salak fruit quality. The test method was conducted naturally in-vivo against eggs and 3rd instar larvae of *Bactrocera carambolae*. Egg irradiation treatment used doses of 0 (control), 100, 150, and 200 Gy, while 3rd instar larvae were tested with doses of 0 (control), 600, 700, 800, 900, 1.000, 1.100, and 1.200 Gy. For fruit quality testing, doses of 0 (control), 100, 150, 200, 600, 700, 800, 900, 1.000, 1.100, 1.200 Gy were used. The results showed that irradiation treatment provided 94.74% effectiveness in killing eggs at a dose of 200 Gy and 100% killing 3rd instar larvae at 600 Gy. Fruit quality testing showed that higher doses of irradiation tended to maintain or increase vitamin C levels, but decreased the texture/hardness of salak fruit. Irradiation did not affect the color brightness (L) and a-value, but affected the b-value which indicates salak fruit becomes more ripe or yellowish color.

Key words: *Bactrocera carambolae*, Irradiation, Snake fruit.