

INTISARI

Bawang merah (*Allium cepa* L. kelompok *Aggregatum*) merupakan komoditas hortikultura penting di Indonesia dengan nilai ekonomi tinggi. Salah satu upaya peningkatan kualitas produktivitas bawang merah dilakukan melalui teknologi mutasi menggunakan radiasi gamma. Penelitian ini bertujuan mengetahui pengaruh radiasi gamma pada dosis 5 Gy dan 10 Gy terhadap pertumbuhan dan hasil dua kultivar bawang merah *True Shallot Seed* (TSS), yaitu ‘Lokananta’ dan galur harapan UGM III, serta mengidentifikasi individu hasil mutasi yang menunjukkan perbaikan karakteristik. Penelitian dilaksanakan tanpa ulangan, dengan individu tanaman sebagai satuan analisis terkecil. Parameter yang diamati meliputi tinggi tanaman, jumlah daun, bobot segar tanaman, jumlah umbi, diameter umbi, panjang akar, dan bobot kering tanaman. Analisis data dilakukan secara deskriptif menggunakan visualisasi boxplot dan histogram, serta seleksi 5% individu terbaik berdasarkan hasil. Hasil penelitian menunjukkan tidak terdapat perbedaan signifikan antara dosis 5 Gy dan 10 Gy terhadap pertumbuhan dan hasil kedua kultivar, bahkan secara umum terjadi penurunan seiring meningkatnya dosis. Namun, pada beberapa parameter seperti diameter umbi dan bobot kering, perlakuan 5 Gy pada individu L5_27 dan L5_48 (‘Lokananta’), serta diameter umbi pada individu U5_10 dan U5_55 (galur harapan UGM III) menunjukkan hasil seleksi 5% individu yang melebihi nilai kontrol. Individu-individu tersebut berpotensi untuk dijadikan bahan seleksi lanjutan dalam pengembangan kultivar bawang merah unggul dari biji.

Kata kunci : Bawang merah, TSS, radiasi gamma, pertumbuhan, hasil umbi

ABSTRACT

Shallot (*Allium cepa* L. *Aggregatum* group) is an important horticultural commodity in Indonesia with high economic value. One of the efforts to improve the quality and productivity of shallots is through mutation technology using gamma radiation. This study aimed to determine the effect of gamma irradiation at doses of 5 Gy and 10 Gy on the growth and yield of two shallot cultivars derived from True Shallot Seed (TSS), namely 'Lokananta' and the UGM III breeding line, as well as to identify mutant individuals showing improved characteristics. The experiment was conducted without replication, using individual plants as the smallest unit of analysis. The observed parameters included plant height, number of leaves, fresh plant weight, number of bulbs, bulb diameter, root length, and dry plant weight. Data analysis was carried out descriptively using boxplot and histogram visualizations, as well as selection of the top 5% of individuals based on yield parameters. The results showed no significant difference between the 5 Gy and 10 Gy doses on the growth and yield of both cultivars, and generally a decrease was observed with increasing dose. However, for certain parameters such as bulb diameter and dry weight, the 5 Gy treatment on individuals L5_27 and L5_48 ('Lokananta'), as well as bulb diameter on individuals U5_10 and U5_55 (UGM III), showed top 5% selection results exceeding the control values. These individuals have the potential to be used as candidates for further selection in the development of superior shallot cultivars from seed.

Keywords : Shallot, TSS, gamma radiation, growth, bulb yield.