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Ngemplak dan Tempel, Sleman**
Zhilla Nur Annisa, Prof. Ir. Y. Andi Trisyono, M.Sc., Ph.D.
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INTISARI

PENGARUH JAGUNG TRANSGENIK CRY1AB TERHADAP HAMA NON-TARGET *Helicoverpa armigera* DI KAPANEWON NGEMPLAK DAN TEMPEL, SLEMAN

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Penelitian ini bertujuan untuk mengetahui pengaruh jagung transgenik Bt yang mengekspresikan Cry1Ab terhadap populasi dan tingkat serangan hama non-target *Helicoverpa armigera* di lapangan. Penelitian dilakukan di Kapanewon Ngemplak dan Tempel, Kabupaten Sleman, Daerah Istimewa Yogyakarta. Pada setiap Kapanewon disediakan tiga petak berukuran 500 m² yang dibagi menjadi jagung transgenik NK6172-Bt11GA21 dan jagung non-transgenik NK6172 sebagai kontrol. Pengamatan dilakukan dua kali seminggu mulai fase *silking* menggunakan metode pengambilan sampel berbentuk huruf W. Variabel yang diamati meliputi populasi larva, rambut tongkol termakan, intensitas kerusakan, dan insidensi serangan. Data dianalisis menggunakan uji-t independen dan uji *Mann-Whitne*y pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa populasi larva dan tingkat serangan *H. armigera* cenderung lebih rendah pada jagung Bt dibandingkan jagung non-Bt. Rerata intensitas kerusakan pada jagung Bt dan non-Bt berturut-turut sebesar 0,01% dan 0,94% di Kapanewon Ngemplak, serta 0,01% dan 0,68% di Kapanewon Tempel. Nilai median seluruh parameter pengamatan juga lebih rendah pada jagung Bt. Berdasarkan analisis per waktu pengamatan, perbedaan nyata terutama terjadi ketika populasi hama relatif tinggi. Analisis rerata gabungan selama seluruh periode pengamatan menunjukkan perbedaan nyata di Kapanewon Ngemplak, namun tidak nyata di Kapanewon Tempel. Perbedaan tersebut diduga dipengaruhi oleh populasi yang rendah, pola sebaran sporadis, dan tingginya variasi lapangan. Disimpulkan bahwa jagung Bt Cry1Ab mampu menekan populasi dan tingkat serangan *H. armigera*, dan pengaruhnya lebih jelas terlihat ketika tingkat serangan hama tersebut sedang tinggi.

Kata kunci: Cry1Ab, *Helicoverpa armigera*, jagung transgenik, populasi hama, serangan

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ABSTRACT

EFFECT OF CRY1AB TRANSGENIC MAIZE ON THE NON-TARGET PEST *Helicoverpa armigera* IN NGEMPLAK AND TEMPEL, SLEMAN

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This study aimed to determine the effect of transgenic Bt maize expressing Cry1Ab on the population and infestation level of the non-target pest *Helicoverpa armigera* in the fields. The research was conducted in Ngemplak and Tempel Subdistricts, Sleman Regency, Special Region of Yogyakarta. In each subdistrict, three plots of 500 m² were established and divided into the transgenic maize NK6172-Bt11GA21 and the non-transgenic maize NK6172 as the control. Observations were conducted twice per week starting the *silking* stage using a W-shaped sampling method. Variables observed included larval population, number of infested ears, damaged silks, and ear damage level. Data were analyzed using independent t-test and Mann-Whitney test at a 5% significance level. The results showed that larval population and infestation level of *H. armigera* tended to be lower in Bt maize than in non-Bt maize. The mean ear damage intensity in Bt and non-Bt maize was 0.01% and 0.94%, respectively, in Ngemplak, and 0.01% and 0.68%, respectively, in Tempel. The median values of all observed parameters were also lower in Bt maize. Based on time-specific analysis, significant differences mainly occurred when pest populations were relatively high. Combined mean analysis across the whole observation period showed significant differences in Ngemplak but non-significant differences in Tempel. These differences were likely influenced by low pest abundance, sporadic distribution patterns, and high field variability. These findings show that Cry1Ab Bt maize suppressed the population and infestation of *H. armigera*, and its effect was more prominent when the level of infestation by this pest was high.

Keywords: Cry1Ab, infestation, *Helicoverpa armigera*, pest population, transgenic maize