

Intisari

PENGARUH PENYAKIT BULAI (*Peronosclerospora maydis*) TERHADAP PERTUMBUHAN DAN HASIL TIGA GALUR JAGUNG

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Penelitian ini bertujuan untuk mengetahui pengaruh penyakit bulai (*Peronosclerospora maydis*) terhadap pertumbuhan dan hasil tiga galur tanaman jagung. Galur uji PN 9201, PN 9101, dan PM 8224; varietas diduga tahan PAC 105, DK 979, dan BISI 2; serta varietas diduga rentan P 23 dan P 21 ditanam sebanyak 5 blok dengan tiap varietas terdiri atas 4 baris berisi 25 tanaman digunakan dalam penelitian ini untuk penghitungan insidensi penyakit bulai. Insidensi penyakit diamati sejak minggu ke-2 – minggu ke-6 setelah tanam. Insidensi penyakit bulai 3 galur uji <7%, insidensi varietas pembanding tahan <25% sejak minggu ke-2 hingga minggu ke-6, serta varietas pembanding rentan >21% - 81 % pada minggu ke-6. Dari tingkat insidensi penyakit bulai dapat dikategorikan galur PN 9201 merupakan galur sangat tahan, galur PN 9101 dan PM 8224 merupakan galur tahan, varietas pembanding tahan BISI 2 merupakan varietas tahan, varietas pembanding tahan DK 979 & PAC 105 termasuk kategori moderat, dan varietas pembanding rentan P 23 & P 21 termasuk kategori sangat rentan. Berdasarkan pengukuran persentase kerusakan daun ketiga galur uji tidak berbeda nyata dengan varietas pembanding tahan namun berbeda nyata dengan varietas pembanding rentan. Berdasarkan penghitungan penurunan tinggi tanaman ketiga galur uji tidak mengalami penurunan tinggi tanaman dan hal tersebut berbeda nyata dengan varietas PAC 105, dan DK 979 serta varietas rentan P 23 dan P 21. Hasil panen yang diperoleh tiga galur uji tidak berbeda nyata terhadap varietas pembanding tahan, sehingga dapat diketahui bahwa penyakit bulai tidak mempengaruhi pertumbuhan dan hasil ketiga galur uji dan varietas pembanding tahan sementara terhadap varietas pembanding rentan terdapat beda nyata. Pada penelitian ini ditunjukkan penurunan tinggi tanaman pada varietas sangat rentan P 21 sebesar 43,97% dibandingkan dengan galur sangat tahan PN 9201 dan penurunan hasil sebesar 71,46%. Koefisien korelasi antara tingkat kerusakan daun dan penurunan hasil mencapai $r = 0,98$ yang berarti semakin tinggi kerusakan daun maka semakin tinggi penurunan hasil.

Kata kunci: Jagung, ketahanan tanaman, penurunan hasil, *Peronosclerospora maydis*.

Abstract

**INFLUENCE OF DOWNY MILDEW (*Peronosclerospora maydis*) ON GROWTH
AND YIELD OF THREE LINES OF MAIZE**

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This research aimed to determine the influence of downy mildew (*Peronosclerospora maydis*) on growth and yield of three lines of maize. Tested lines PN 9201, PN 9101, PM 8224; allegedly resistant varieties PAC 105, DK 979, and BISI 2; as well as allegedly susceptible varieties P 23 and P 21 as many as five blocks which each varieties consist of 4 rows and 25 plants/row were used in this research to measure disease incidence. Disease incidence was observed from week 2 – 6 weeks after planting. While three tested lines got disease incidence <7%, allegedly resistant varieties got disease incidence <25% from week 2 to week 6, at the contrary susceptible varieties got disease incidence >21 – 81% at week 6. Based on disease incidence data, line PN 9201 was highly resistant, line PN 9101 & PM 8224 were resistant, BISI 2 was resistant, PAC 105 & DK 979 were moderate, and P 23 & P 21 were highly susceptible. Due to measurement of leaf damage there was no significant difference among three tested lines and allegedly resistant varieties however they were significantly difference toward susceptible varieties. Due to data of growth reduction, the tested lines did not show height reduction and they were significantly difference toward resistant varieties (DK 979 & PAC 105) and susceptible varieties (P 23 & P 21). Yields gained by three tested lines showed that there was no significant difference with resistant varieties, it explained that downy mildew did not influence plant growth and yield on resistant varieties, but it reduced growth and yield on susceptible varieties. This research demonstrated that decreasing plant height on very susceptible varieties P 21 amounted to 43,97% compared to a highly resistant strain PN 9201, and decreasing yield was 71,46%. The correlation coefficient between the level of leaf damage and yield loss reached $r = 0,98$ which means the higher the leaf damages, the higher the yield loss.

Keywords : Corn, *Peronosclerospora maydis*, resistance, yield reduction.