Pengaruh penggunaan fungisida terhadap perkecambahan benih dan spora CMA serta keberadaan mikoriza arbuskula pada tanaman jagung (Zea mays L.)

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Abstrak

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Penggunaan fungisida bertujuan untuk melindungi benih dari serangan cendawan patogen penyebab penyakit sehingga benih dapat disimpan lama serta memberantas cendawan penyebab penyakit pada tanaman.

Dua macam penelitian dilakukan di Laboratorium dan rumah kaca PAU IPB di Dermaga Bogor untuk mengetahui pengaruh fungisida folirfos pada beberapa konsentrasi (0,04%, 0.12% dan 0,20%) serta fungisida ridomil pada konsentrasi 1,16%, 1,54% dan 2,31%.

Penelitian pertama dilakukan untuk mengetahui pengaruh fungisida terhadap perkecambahan benih jagung SD II dan perkecambahan spora cendawan mikoriza arbuskula. Metode yang digunakan adalah rancangan acak lengkap (RAL) dengan 3 ulangan.

Hasil penelitian menunjukkan bahwa penggunaan fungisida folirfos pada konsentrasi rendah, sedang dan tinggi tidak menghambat perkecambahan benih jagung dan perkecambahan spora Gigaspora rosea serta perkecambahan Glomus manihotis. Penggunaan ridomil menghambat perkecambahan benih jagung, tetapi tidak menghambat perkecambahan spora Gigaspora rosea dan Glomus manihotis.

Penelitian kedua untuk mengetahui pengaruh fungisida terhadap infeksi spora CMA pada akar tanaman jagung dan jumlah spora CMA pada tanah basah dan kering bekas pertanaman jagung dengan metode rancangan acak lengkap (RAL) dengan 3 ulangan. Pengaruh fungisida dan mikoriza terhadap jumlah daun dan tinggi tanaman jagung menggunakan rancangan acak lengkap (faktorial) dengan 3 ulangan.

Hasil penelitian menunjukkan bahwa penggunaan fungisida tidak berpengaruh terhadap infeksi CMA pada akar tanaman jagung dan jumlah spora CMA pada tanah basah dan tanah kering. Kombinasi perlakuan fungisida dan spora CMA juga tidak berpengaruh terhadap jumlah daun dan tinggi tanaman jagung.

Dari hasil penelitian ini dapat disimpulkan bahwa penggunaan fungisida folirfos dapat diberikan pada benih jagung dan pada spora Gigaspora rosea dan Glomus manihotis, sedangkan fungisida ridomil tidak dapat diberikan pada benih jagung, namun dapat diberikan pada spora Gigaspora rosea dan Glomus manihotis.

Untuk keberadaan CMA pada tanaman jagung penggunaan fungisida tidak mempengaruhinya. Sedarigkan jumlah dan tinggi tanaman jagung tidak dipengaruhi oleh penggunaan fungisida dan mikoriza.
<hr><i>ABSTRACT

One of the purposes of using fungicides is to protect seeds against the attack of pathogenic fungi that cause diseases, so that seeds can be stored longer and fungi that cause disease can be eliminated.

Two experiments were performed in a green house of PAU IPB Bogor, Dermaga, to find out the influences of folirfos fungicide with low concentration (0.04%), medium concentration (0,12%) and high concentration (0,20%), and ridomil fungicide with low concentration (1,16%), medium concentration (1,54%) and high concentration (2,31%) to SD II variety of sweet corn seed germination, to the spore germination of vecsicular - arbuscular (VA) mycorrhizal fungi, Gigaspora rosea and Glomus manihofis, VA mycorrhizai fungi infection on roots, the number of VA mycorrhizal fungi spores on wet soil and dry soil, the number of leaves and the height of corn trees.

The first experiment was performed to find out the influences of folirfos fungicide and ridomil to corn seeds germination and germination of VA mycorrhizal fungi spores.

The results showed that the use of folirfos fungicide with low, medium and high concentrations did not inhibit the the germination of corn seeds, whereas ridomil fungicide with low, medium and high concentrations inhibited the germination of corn seeds. For the germination of Gigaspora rosea, folirfos fungicide with low, medium and high concentrastiens did not inhibit the germination of Gigaspora rosea, whereas ridomil fungicide with medium and high concentrations did not inhibit the germination of Gigaspora rosea either. Ridomil fungicide with low concentration (F4) was still able to increase the germination of Gigaspora rosea amounting to 64,16%, whereas for the germination of Glomus manihofis, the use folirfos and ridomil fungicide could increase the germination of Glomus manihofis spores. Ridomil fungicide with medium concentration (F5) was still able to increase the germination of Glomus manihotis spores amounting to 22,5%.

The second experiment was performed to find out the influences of folirfos fungicide to the VA mycorrhizal fungi on roots of corn trees, and the amount of VA spores on wet soil and dry soil which were previously planted with corn trees, as well as the influences of both fungicides and a mycorrhizal inoculum to the number of leaves and the height of corn trees.

The results showed that folirfos fungicide and ridomil did not influence the infection of VA mycorrhizal fungi on the roots of corn trees and the amount of VA spores on wet soil and dry soil. The combination of treatment of fungicide and VA spores did not significantly influence ($p>0,05$) the number of leaves and the height of corn trees, 1 can be concluded, from the fisrt experiment, that the use of folirfos fungicide with any level of concentration can be given to the seeds of corn because it did not inhibit germination, whereas ridomil fungicide with low, medium and high concentrations can not be given to the seeds of corn because it inhibit germination. As for the germination of VA mycorrhizal fungi, ridomil fungicide with low concentration (F4) can be given to Gigaspora rosea, because the spores were still able to germinate up to 64,14%.

From the second experiment I can conclude that folirfos fungicide as well as ridomil fungicide with any level of concentration can be used for corn trees containing mycorrhizal fungi, because both fungicide did

not influence the existence of VA mycorrhizal fungi on the trees, the number of leaves as well the height of the corn trees.</i>