

## **EVALUASI CEKAMAN KEKERINGAN METEOROLOGIS DAN AGRONOMIS DI BAWAH INVASI AGEN HAYATI PADA PRAKTIK PENGOLAHAN TANAH UNTUK BUDIDAYA TANAMAN JAGUNG**

### **INTISARI**

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Musim kemarau di Indonesia menyebabkan berbagai permasalahan, diantaranya kekeringan. Kekeringan sebagai bencana hidrometeorologis memiliki dampak terhadap sektor pertanian. Kekeringan pada sektor pertanian dapat menyebabkan terjadinya gagal panen. Bencana kekeringan dapat dikategorikan menjadi kekeringan meteorologis, agronomis, dan hidrologis. Upaya mengatasi dampak kekeringan di dalam sektor pertanian dapat digunakan agen hayati serta bahan pembenah tanah. Penelitian ini dilakukan untuk mengkaji pengurangan pencegahan bencana pertanian melalui pemberian agen hayati serta mengkaji hubungan pemberian agen hayati dan bahan pembenah tanah terhadap ketersediaan lengas tanah pada praktik pengolahan tanah.

Dalam penelitian ini, pemberian agen hayati serta bahan pembenah tanah dilakukan pada awal pengolahan tanah. Agen hayati sebanyak 0,5 gram dan bahan pembenah tanah sebanyak 173,7 gram dicampurkan dengan media tanam sebanyak 20 kg. Bencana kekeringan dianalisis dengan menggunakan indeks kekeringan SPI yang telah digunakan oleh *World Meteorological Organization*. Hasil penelitian menunjukkan kekeringan meteorologis yang terjadi di Kapanewon Godean terparah dengan status agak kering berindeks -1,06. Bencana kekeringan pertanian terparah di Kapanewon Godean dengan status agak kering berindeks -1,47. Sedangkan invasi agen hayati berdampak terhadap ketersediaan lengas tanah yang mampu menjaga kondisi lengas tanah. Pemberian bahan pembenah berupa pupuk kompos sebagai bahan pembenah mampu menjaga ketersediaan air pada tanaman jagung yang terbukti dengan biomassa tanaman jagung pada pemberian pupuk kompos 191,5 gram, biomassa perlakuan agen hayati mikoriza 236 gram, serta perlakuan kombinasi pupuk kompos dan cendawan mikoriza sebesar 225,5 gram.

Kata kunci: kekeringan, indeks SPI, bahan pembenah tanah, agen hayati, jagung, lengas tanah

***AN EVALUATION OF DROUGHT STRESS UNDER BIOLOGICAL AGENT  
INVASION ON SOIL TILLAGE PRACTICES FOR MAIZE CULTIVATION***

**ABSTRACT**

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The dry season in Indonesia causes various problems, including drought. Drought as a hydrometeorological disaster has an impact on the agricultural sector. Drought in the agricultural sector can cause crop failure. Drought disasters can be categorized into meteorological, agronomic and hydrological droughts. Efforts to overcome the impact of drought in the agricultural sector can use biological agents and soil amendments. This research was conducted to examine the reduction of agricultural disaster prevention through the provision of biological agents and to examine the relationship between the provision of biological agents and soil amendments to the availability of soil moisture in land cultivation practices.

In this research, the application of biological agents and soil amendments was carried out at the beginning of soil processing 0,5 grams of biological agent and 173,7 grams of soil amendment are mixed with 20 kg of planting medium. Drought disasters are analyzed using the SPI drought index which has been used by the World Meteorological Organization. The research results show that the meteorological drought that occurred in Kapanewon Godean was the worst with a slightly dry status with an index of -1,06. The worst agricultural drought disaster was in Kapanewon Godean with a slightly dry status with an index of -1,47. Meanwhile, the invasion of biological agents has an impact on the availability of soil moisture which is able to maintain soil moisture conditions. Providing amendments in the form of compost fertilizer as an amendment is able to maintain the availability of water in corn plants as proven by the biomass of corn plants when applying compost fertilizer was 191,5 grams, the biomass treated with mycorrhizal biological agents was 236 grams, and the combined treatment of compost fertilizer and mycorrhizal fungi was 225,5 grams.

**Key words:** drought, SPI index, soil amendments, biological agents, maize, soil moisture