Pengaruh Metil Jasmonat Terhadap Pertumbuhan dan Kandungan Zat Warna Indigo Tanaman Tarum (*Indigofera tinctoria* L.*)*

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INTISARI

Pelarangan penggunaan pewarna sintetis yang mengandung gugus azo dan peraturan mengenai standar lingkungan yang baru, menyebabkan penggunaan pewarna alami semakin meningkat. Salah satu pewarna alami yang telah dikenal yaitu berasal dari daun tanaman Indigo (*Indigofera tinctoria* L.). Peningkatan permintaan dan jumlah kebutuhan daun indigo yang besar dalam pembuatan pewarna belum diiringi, dengan peningkatan jumlah daun yang dapat dipanen setiap masa panen. Beberapa hormon tumbuhan diketahui mengontrol perkembangan daun pada tanaman serta dapat mempengaruhi biosintesis pigmen, salah satunya adalah metil jasmonat. Penelitian ini dilakukan dengan tujuan untuk mengkaji pengaruh metil jasmonat dalam peningkatan pertumbuhan dan perkembangan tanaman indigo (*Indigofera tinctoria* L.) dan kandungan zat indigo yang dihasilkan. Metode yang digunakan yaitu : benih tanaman indigo ditanam didalam rumah kaca Fakultas Biologi, UGM selama 5 bulan dan diamati pertumbuhannya, setelah tanaman berumur 1 bulan metil jasmonat diaplikasikan dengan konsentrasi (0 ppm (kontrol), 25 ppm, 50 ppm, 75 ppm, dan 100 ppm) sebanyak 2 kali dengan selisih 2 minggu. Aplikasi metil jasmonat dilakukan dengan cara menuangkan 100 ml senyawa tersebut pada tanah sekeliling tanaman. Setelah 5 bulan, tanaman dipanen kemudian bagian batang dan daun tanaman diamati anatominya. Selanjutnya daun tanaman diukur kadar klorofil dan kadar indigo didalamnya. Hasil penelitian menunjukkan metil jasmonat belum dapat meningkatkan pertumbuhan hingga konsentrasi 100 ppm. Metil jasmonat meningkatkan kadar klorofil total dan b. Kadar indigo belum dapat ditingkatkan melalui aplikasi metil jasmonat hingga konsentrasi 100 ppm. Sehingga dapat disimpulkan, bahwa perlakuan metil jasmonat belum dapat meningkatkan pertumbuhan dan perkembangan tanaman indigo (*I. tinctoria* L.*)* serta kandungan zat warna indigo.

Kata Kunci : *Indigofera tinctoria* L., metil jasmonat, pertumbuhan, pewarna indigo

Effects of Methyl Jasmonate on Growth and Indigo Content of Tarum (*Indigofera tinctoria* L.)

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ABSTRACT

The prohibition of the use of synthetic dyes containing azo groups and regulations on new environmental standards, led to increased use of natural dyes. One of the known natural dyes is derived from the leaves of the Indigo plant (*I. tinctoria* L.). Increased demand and quantity of indigo leaf requirement very much in the manufacture of dyes not accompanied by increasing the number of leaves that can be harvested every harvest period. Some plant hormones are known to control the development of leaves in plants and the biosynthesis of pigmen, one of which is methyl jasmonat. This study was conducted with the aim to study the influence of methyl jasmonate in improving the growth and development of indigo plants (*I. tinctoria* L.) and the content of indigo substances generated. The method used was, indigo plant seedlings were planted in green house Faculty of Biology, UGM for 5 months and observed its growth, when the plant was 1 month methyl jasmonate was applied with concentration of (0 ppm, 25 ppm, 50 ppm, 75 ppm, 100 ppm) twice with 2 weeks interval. Methyl jasmonate applied by pouring 100 ml of the compound on the soil around the plant. After 5 months, the plants were harvested then the stems and leaves of the plant were observed anatomically. Furthermore, the leaves of the plants was analyzed it chlorophyll and indigo contain. The results showed that methyl jasmonat can not increase yet the growth of indigo plants until concentration 100 ppm. But, methyl jasmonate can increased contain of chlorophyll b and total chlorophyll. Indigo content cannot be increased yet by application of methyl jasmonate until concentration 100 ppm . It can be concluded that methyl jasmonate treatment still can not increase yet the growth and development of indigo plants (*Indigofera tinctoria* L.) as well as indigo content that can be produced.

Keywords: *Indigofera tinctoria* L., methyl jasmonate, growth, indigo dye.