

**ANALISIS KEMAMPUAN PRODUKSI FITOHORMON DARI BAKTERI
PLANT GROWTH PROMOTING RHIZOBACTERIA (PGPR) DAN
ENDOFIT AKAR CABAI MERAH KERITING (*Capsicum Annum L.*)
DENGAN MENGGUNAKAN HPLC**

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ABSTRAK

Analisis fitohormon dari isolat bakteri endofit dan *plant growth promoting rhizobacteria* (PGPR) dilakukan menggunakan metode HPLC. Bakteri endofit dan PGPR berperan dalam memproduksi hormon pertumbuhan, seperti auksin, giberelin, dan sitokinin. Penelitian ini bertujuan untuk mengetahui isolat yang mampu memproduksi hormon auksin, giberelin, dan sitokinin, selain itu untuk mengetahui konsentrasi yang dihasilkan masing-masing isolat dalam memproduksi hormon. Tahapan penelitian ini yaitu peremajaan isolat bakteri, karakteristik makroskopik dan mikroskopik, uji kompatibilitas, mengukur kadar auksin menggunakan HPLC. Berdasarkan hasil Penelitian diketahui isolat bakteri endofit A, B, C, konsorsium 3 bakteri endofit (A, B, C), konsorsium 3 bakteri endofit dan 3 bakteri PGPR (A, B, C, CB1, CB2, CMBC) mampu memproduksi hormon auksin (IAA), sedangkan pada hormon giberelin dan sitokinin tidak semua isolat bakteri mampu memproduksi hormon tersebut. Konsentrasi hormon auksin yang dihasilkan pada masing-masing isolat adalah single bakteri endofit A menghasilkan 158.913 ppm, B menghasilkan 64.882 ppm, C menghasilkan 93.923 ppm. konsorsium 3 bakteri endofit 24.201 ppm, konsorsium bakteri PGPR 162,723 ppm, konsorsium 6 bakteri (3 endofit dan PGPR) menghasilkan 46.122 ppm. Selanjutnya, pada hormon giberelin konsentrasi dari masing-masing isolat adalah single bakteri endofit A menghasilkan 80,982, B menghasilkan 181,972, C menghasilkan 100,442, konsorsium 3 bakteri endofit menghasilkan 257,662, konsorsium 6 bakteri (3 endofit dan PGPR) menghasilkan 7,491. Kemudian, pada konsentrasi sitokinin dihasilkan dari konsorsium 3 bakteri endofit sebesar 0,877 ppm.

Kata kunci: Bakteri, fitohormon, konsentrasi

**ANALYSIS OF THE PRODUCTION CAPABILITY OF
PHYTOHORMONES FROM PLANT GROWTH PROMOTING
RHIZOBACTERIA (PGPR) AND CURLY RED CHILLI (*Capsicum Annum*
L.) ROOT ENDOPHYTES USING HPLC**

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ABSTRACT

Phytohormone analysis from isolates of endophytic bacteria and plant growth promoting rhizobacteria (PGPR) was carried out using the HPLC method. Endophytic bacteria and PGPR play a role in producing growth hormones, such as auxin, gibberellins and cytokinins. This research aims to determine isolates that are capable of producing the hormones auxin, gibberellins and cytokinins, in addition to knowing the concentration produced by each isolate in producing hormones. The stages of this research are rejuvenation of bacterial isolates, macroscopic and microscopic characteristics, compatibility testing, measuring auxin levels using HPLC. Based on research results, it is known that isolates of endophytic bacteria A, B, C, a consortium of 3 endophytic bacteria (A, B, C), a consortium of 3 endophytic bacteria and 3 PGPR bacteria (A, B, C, CB1, CB2, CMBC) are capable of producing the hormone auxin (IAA), while for gibberellin and cytokinin hormones, not all bacterial isolates are able to produce these hormones. The concentration of the auxin hormone produced in each isolate was single endophytic bacteria A producing 158,913 ppm, B producing 64,882 ppm, C producing 93,923 ppm. consortium of 3 endophytic bacteria 24,201 ppm, consortium of PGPR bacteria 162,723 ppm, consortium of 6 bacteria (3 endophytes and PGPR) produced 46,122 ppm. Furthermore, for the gibberellin hormone, the concentration of each isolate was single endophytic bacteria A produced 80,982, B produced 181,972, C produced 100,442, a consortium of 3 endophytic bacteria produced 257,662, a consortium of 6 bacteria (3 endophytes and PGPR) produced 7,491. Then, the concentration of cytokinin produced from a consortium of 3 endophytic bacteria was 0.877 ppm.

Key words: Bacteria, concentration, phytohormones