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KARAKTERISASI RESISTENSI GULMA *Synedrella nodiflora* TERHADAP HERBISIDA REFLEX MENGGUNAKAN GEN *PPX2L* SEBAGAI PENANDA MOLEKULER

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ABSTRACT

Fomesafen as an active substance of Reflex herbicide can inhibit PPOase, an enzyme playing important role in chlorophyl biosynthesis. Deletion of three bases at gene encoding PPOase, i.e. PPX2L, was reported as one of resistance mechanisms against PPOase inhibiting herbicides. Nevertheless, only a few studies on molecular characterization of Synedrella nodiflora resistance against Reflex were reported. Therefore, this study was aimed to (1) know the sequence of PPX2L gene isolated from resistant S. nodiflora against Reflex, (2) perform homology study of PPX2L gene from resistant S. nodiflora and various plant species in data base, and (3) know the sequence of PPX2L gene responsible to S. nodiflora resistance against Reflex. The PCR products of susceptible S. nodiflora showed three bands, in that of 500 bp is strongly assumed as PPX2L gene. Susceptible S. nodiflora is genetically different from susceptible A. tuberculatus, indicated by the absence of three base pairs at position 834, 835 and 836 in susceptible S. nodiflora, where in susceptible A. tuberculatus this position is occupied by CAG. Then, in both susceptible S. nodiflora and A. tuberculatus there is C at position 919 but T in resistant A. tuberculatus. At amino acid level this position is CCC (proline) in susceptible S. nodiflora, CTA (leucine) in susceptible A. tuberculatus and TTA (leucine) in resistant A. tuberculatus. Therefore, inspite of base alteration from C in susceptible A. tuberculatus to T in resistant A. tuberculatus, the amino acid formed remains constant, i.e. leucine. Significant difference is, however, observed in susceptible S. nodiflora because there is proline at the same posistion.

Keyword: