Potensi helianthus annus dan ipomea batatas dalam menghambat pertumbuhan pennisethum polystyachon

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Abstrak

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Pengaruh eksudat akar dan ekstrak daun Helianlhus mmuus serta Ipomoea batala' terhadap pertumbuhan rumput gajah Petmiselum po/ystacltyon telah dilakulrnn; diamati pula pertumbuhannya bila ditanam di dalam 1 pot bersama H. annuus atau l batatas.

Pada penelitian ini. eksudat akar H. mvruus mampu menurunkan persentase perkecambahan biji dan panjang kecambah rumput gajah sampai 23,87 dan 47 % terhadap kontrol dalam 90 jam; sementara eksudat akar I. halalas menunjukkan penurunan 22,37% dan 23,83 %.

Eksudat akar dari tanaman bunga matahari yang disiramkan selama 5 minggu pada rumput gajah umur 10 hari menekan tinggi gulma itu 13,62%; berat segar dan berat kerlng 39,56 dan 51,24 %. Eksudat akar tanarnan ubi jalar hanya berpengaruh menekan berat segardan berat kerlng gulma itu sampai 18,58 dan 18,40%.

Ekstrak daun H. anmms sertal. hatatas 4 % b.k. mampu mengbambat persentase perl:ecambahan dan tinggi kecambah rumput gajah dalam 90 jam berturut-turut sebesar 38,45 dan 15,28% serta 30,79 dan 19,45%.

Ekstrak daun H. annuus sertal. halalas 2% b.k.yang disiramkan sekali seminggu Rumput gajah yang ditanam dalam 1 pot bersama H. annuus atau l halatas tidak menunjukkan perbedaan nyata dalam tinggi dan berat segar rumput gajah; namun berat kering menunjukkan penurunan 33,44 dan 39,63% terhadap kontrol.
<hr><i>ABSTRACT
Pennisetum polystachyon is native of Tropical Africa. It has a high reproductive capacity and rapid seed germinationit becomes a troublesome weed when it takes over waste- and cultivated lands. It is now also found along the road sides and highways in Indonesia. The seeds are wind dispersed and have a resilient ability to survive drought and certain cultural and chemical control methods.

The concept that some crop plants may be allelopathic to certain weeds is receiving increased attention in the search for alternative weed control strategies. Helianthus ammus and Ipomoea aquatica are amongst the crop plants that may have the allelopathic effect to some weeds.

This research aims to study the inhibiting potential of H. mmuus and I. batatas on the growth of P. polystachyon. This study observed the effects of root exudates and leaf extrects of H. annuus and /. batatas on the germination and growth of P. polystachyon; and also on the growth of this weed grown together with H. a1muus or I. batatas.

Root exudates taken from the sand planted with H. mmuus or I. halalaS for 4 Root exudates liquid comes out from watering H. ammus or/. batatas (01, 2, 3 and 4 plants/pot), poured over a 10-days seedling of P. polyslachyon twice a day during 5 weeks (5 replications each) reduced the height, fresh and dry weight of the weed. The height reduced up to 13.62 %; fresh and dry weight up to 39.56% and 51.24% by the root exudate of H. annuus; while those of L batatas had no effect to the height of P. polystachyon hut did reduce the fresh and dry weight up to18.58 and 18.40%.

Leaf extracts of H. anmms or I. halalas (0--4 % dry weight), with 5 replications each, reduced also the percentage of germination and length of the germination of seed ofP. polystachyon. During 90 hours, leaf extracts of H. ammus reduced the percentage of gennination of the weed species up to 38.45 % and length of the germination of seeds up to 15.28 %; while those of L halalas up to 30.79% and 19.45% respectively.

The I0 days-old seedling of P. polystachyon with SO mlleaf extracts of H. anmtus or L halalas (0; 0.5; J.O; 1.5; and 2% dry weight) once a week, showed a little difference effect on those weed growth a week after the third treatment. Leaf extract of H. anmms almost had no effect on the weed growth both in height, fresh and dry H. annuus- P. polystachyon and /. batatas- P.polystachyon grown together in a pot (0-5; 1-4; 2-3; 3-2; 4-1; and 5-0) for 5 weeks; 4 replications each, gave another result; both had no effect on height and fresh weight of P. polystachyon. H. annuus- P. po/ystachyon and I. halalas- P. polystachyon 4-1 reduced the dry weight significantly up to 33.44 and 39.63 %.</i>