

研究报告

异丙甲草胺及其高效体对潮土微生物的影响 II. 土壤呼吸

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收稿日期 2005-3-22 修回日期 2006-4-28 网络版发布日期 接受日期

摘要 研究了0、5、20和100 mg·kg⁻¹浓度的异丙甲草胺及其高效体金都尔对土壤微生物呼吸的影响. 结果表明, 5 mg·kg⁻¹异丙甲草胺对土壤呼吸的激活程度大于同浓度的金都尔, 后期异丙甲草胺起抑制作用, 而金都尔则一直处于激发和恢复状态; 20 mg·kg⁻¹金都尔对土壤呼吸的影响不大, 而异丙甲草胺具有激发作用; 100 mg·kg⁻¹异丙甲草胺对土壤呼吸的激活程度大于同浓度的金都尔, 后期二者的抑制程度大致相同; 异丙甲草胺或金都尔的浓度越大, 对土壤呼吸强度的激活越显著. DMRT法检验表明, 在初期各处理与对照间的呼吸强度都存在显著差异, 后期则差异不显著. 20和100 mg·kg⁻¹异丙甲草胺对土壤微生物的危害大于同浓度的金都尔. 异丙甲草胺和金都尔为低毒或无实际危害的农药, 对土壤微生物的危害较小.

关键词 [异丙甲草胺](#) [金都尔](#) [手性农药](#) [土壤呼吸作用](#) [土壤微生物](#)

分类号

Effects of pesticides metolachlor and S-metolachlor on soil microorganisms in aqisols II. Soil respiration

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Abstract

An incubation test on the soil microbial respiration as affected by 0, 5, 20, and 100 mg·kg⁻¹ of metolachlor and S-metolachlor (Dual Gold) showed that at the early period of incubation, 5 mg·kg⁻¹ of metolachlor had a stronger stimulation effect on the respiration than 5 mg·kg⁻¹ of Dual Gold, but after then, metolachlor presented an inhibition effect while Dual Gold had the effects of stimulation or recovery. 20 mg·kg⁻¹ of Dual Gold had little effect on the respiration, while metolachlor with the same concentration stimulated it. 100 mg·kg⁻¹ of metolachlor had a stronger stimulation effect on the respiration than 100 mg·kg⁻¹ of Dual Gold, but both of them had the same inhibition effect during the later period. The higher the concentration of metolachlor or Dual Gold, the greater the stimulation effect was. There was a significant difference in soil microbial respiration between treated and blank soil at the beginning of incubation, while no significant difference was observed during the later period. With the same concentration of 20 or 100 mg·kg⁻¹, metolachlor had more harm than Dual Gold. It was suggested that metolachlor and Dual Gold belonged to lower poisonous pesticides, and had less harm on soil microbes.

Key words [Metolachlor](#) [S-Metolachlor \(Dual Gold\)](#) [Chiral pesticide](#) [Soil respiration](#)
[Soil](#)
[microorganism](#)

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扩展功能

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