

酚酸化合物对土壤酶活性和土壤养分的影响

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The effect of added phenolic acids on soil enzyme activities and nutrients

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摘要 研究了酚酸化合物对连作西瓜土壤酶活性和土壤养分的影响。结果表明,添加外源酚酸入土刺激了土壤酶活性,土壤过氧化氢酶活性、脲酶活性均比对照提高,土壤呼吸强度增加,施入酚酸化合物2周时,500.mg/kg浓度的苯丙烯酸和对羟基苯甲酸土壤呼吸强度分别比同期对照增加了22.5%和20.0%;处理4周时,750.mg/kg浓度的苯丙烯酸和对羟基苯甲酸脲酶活性分别比对照提高了34.4%和29.0%。苯丙烯酸和对羟基苯甲酸类酚酸化合物降低了土壤碱解氮、速效磷、速效钾含量,有机质含量也降低,250.mg/kg苯丙烯酸处理2周时,碱解氮、速效钾、速效磷和有机质含量分别比对照降低了9.6%,18.4%,20.7%和11.0%。

关键词: 酚酸 连作 西瓜 土壤酶 土壤养分 酚酸 连作 西瓜 土壤酶 土壤养分

Abstract: Pot experiments were carried out to study the effects of added phenolic acids on soil enzyme activities and nutrients in watermelon continuous cropping soil. The results obtained are listed as follows. Hydrogen peroxidase, urease activities and respiration of the soil added with phenolic acids were higher than those of control. Soil respiration, for example, was increased by 22.5% and 20.0% two weeks after the addition of cinnamic acid and P-hydroxybenzoic acid (500 mg/kg) and urease activities were increased by 34.4% and 29.0% four weeks after the addition of the two phenolic acids (750 mg/kg). Soil available N, P, K and organic matter were decreased by the addition of the two phenolic acids. Thus, they were decreased by 9.60%, 18.4%, 20.7% and 11.0% with the addition of cinnamic acid (250(mg/kg)), respectively.

Keywords:

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