

非豆科作物套种时间对减少烤烟后期氮素吸收量的研究

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Effects of intercropping time of non leguminous plants on tobacco nitrogen absorption at late growth stages

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摘要

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摘要 采取田间原位培养和室内好气培养相结合的方法,对籽粒苋、黑麦草两种非豆科作物不同套种时间降低烤烟生长后期土壤氮素矿化进行了研究。结果表明,籽粒苋、黑麦草两种非豆科作物与烤烟进行合理套种时,能参与竞争吸收土壤中的养分。田间试验条件下,烤烟移栽后35、49 d套种籽粒苋,49 d套种黑麦草,移栽后105 d氮素矿化分别减少了65.81%、54.57%和65.90%,与对照形成显著差异;室内培养条件下,烤烟移栽后49 d套种籽粒苋,移栽后49~77 d时显著降低了培养矿化量,有助于减少烤烟后期的氮素吸收。表明套种籽粒苋和黑麦草均对吸收植烟土壤过剩养分有一定的作用,以烤烟移栽后49 d套种黑麦草或籽粒苋效果最佳。

关键词: 套种 烤烟 籽粒苋 黑麦草 氮素 矿化

Abstract: In this paper, in order to partially resolve the problem of over-nutrition of tobacco at the late growth stages, the field plot experiment in situ incubation and the indoor experiment in the aerobic incubation were carried out to study the effects of different intercropping times of Amaranth and rye grass on decreasing nitrogen mineralization at the late growth stages. The results show that the two non leguminous plants, Amaranth and rye grass, could absorb soil nutrients and compete with flue-cured tobacco when they are intercropped. In the field plot experiment, the mineralization amounts of intercropping Amaranth from the 35th days, Amaranth from the 49th days and rye grass from the 49th days are decreased by 65.81%, 54.57% and 65.90%, and the effects are significant different from those of the control. In the indoor experiment, the mineralization amount of intercropping Amaranth from the 49th days is decreased significantly during 49-77 d, and this could cause less nitrogen absorption. The intercropping rye grass and Amaranth could both absorb over-nutrition of soil with tobacco planted, and the effects of intercropping rye grass and Amaranth from the 49th days are the best.

Keywords: intercropping tobacco Amaranth rye grass nitrogen mineralization

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