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## 大豆品种根系伤流液中总氮含量与叶片光合速率的关系

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摘要: 以吉林省1923~2008年育成的20个大豆品种为材料,分别于2011和2012年在盛花期(R2期)、盛荚期(R4期)和满粒期(R6期),测定根系伤流液中的总氮含量和功能叶片的净光合速率(Pn),并分析了不同年代育成大豆品种伤流液中总氮含量的变化规律及其与Pn的相互关系。结果表明:遗传改良增加了大豆根系伤流液中的总氮含量;同一大豆品种伤流液中的总氮含量随着生育进程的推进不断降低;不同生育时期伤流液中总氮含量与Pn呈正相关,并在R2期达显著水平(r=0.429 8\*)。由此推测大豆植株的根与叶之间存在明显的互作,R2期伤流液中的总氮含量可以作为评价植株光合能力的间接指标。

Abstract: Twenty soybean varieties bred in Jilin Province during 1923-2008 were used to measure the total nitrogen content in root bleeding sap and the net photosynthetic rate(Pn) of function leaf at R2, R4 and R6 stage. The changes of total nitrogen content in bleeding sap and its correlation with Pn of soybean cultivars released in different years were determined. Total nitrogen content in root bleeding sap increased with genetic improvement of soybean cultivars. Total nitrogen content in root bleeding sap of the same soybean variety decreased with the proceeding of growth stage. Total nitrogen content in root bleeding sap positively correlated with Pn at different growth stages, and the correlation was significant (r=0.429 8\*) at R2 stage. Results suggest that there is an obvious interaction between roots and leaves of soybean plants, and total nitrogen content in root bleeding sap at R2 stage can be used as an indirect index of plant photosynthetic capacity.

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