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**NITROGEN FERTILIZER SOURCES AND MANAGEMENT IN THE SUCCESSION
BRACHIARIA/COTTON UNDER NO-TILLAGE SYSTEM AND CROP-LIVESTOCK
INTEGRATION IN THE BRAZILIAN CERRADO**

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Abstract

The Cerrado region is responsible for more than 90% of the total area of about 1.1 million hectares of cotton cultivated in Brazil. Farmers have been searching for options regarding sources, timing, and method of fertilizer application, aiming mainly at higher operational yields, higher efficiency of fertilizer use, and cost reduction. The objective of this study was to evaluate the efficiency of applying all or part of the cotton nitrogen (N) fertilizer to the preceding grass species (*Brachiaria brizantha*), using different nitrogen fertilizer sources. A field study was carried out in the state of Goiás, in 2006/2007 and 2007/2008 growing seasons. The experiment consisted of 13 treatments in a randomized complete block design with four replications, in a 3x4+1 factorial arrangement: three N fertilizer sources (urea, urea+Agrotain, and urea+polymer kimberlit), four methods of fertilizer application (100% pre-planting; 50% pre-planting + 50% topdressing; 100% one topdressing application; 100% two topdressing applications), and one control. A dose of 100 kg/ha N was applied. It was concluded that 50% preplant and 100% one topdress application both resulted in the same yields as with conventional fertilization using two topdress applications. The fertilizers urea+Agrotain and urea+polymer Kimberlit showed higher N-use efficiency compared to urea.