RESULTS OF PRODUCT CICLUS NK, SLOW RELEASE NITROGEN, APLIED AD PRODUCTIVE COFFEE AREA

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INTRODUCTION

The application of fertilizers is one of the various factors that influence the crops productivity and, between the nutrients applied, the nitrogen is one of the most complex, due to its high exigency and its losses by lixiviation and volatilization too. There are several recommendations to nitrogen application, that if they are bad managed, can bring many problems to the crop and environment (Madeira et al., 2007). The technical options recommended to minimize nitrogen loss involves the parceling of nitrogen application, incorporation of the fertilizer applied into the soil and management of the application period (Raij et al., 1996) and, more recently, the choice of special nitrogen fonts. This special fonts, generally called slow release nitrogen fertilizers are a group of products that have different ways of action, between them, as an example, the range Ciclus, a slow release nitrogen polymer, little water soluble, gradually hydrolyzed by soil microorganisms, that may present different percentage of N, P, K and S on its composition (Mendonça et al., 2007).

OBJECTIVES

This work aimed to evaluate the effect of commercial fertilizer, Ciclus NK, in single application, compared with conventional split application from the farmers, on vegetative growth, mineral nutrition and production from coffee plants and studied the possibility of doses reduction of N with the use of "Ciclus" technology, slow release nitrogen.

MATERIAL AND METHODS

Assay CNK 06
- ✓ City: Carmo do Rio Claro/MG
- ✓ Farm: Fazenda Terra Nova;
- ✓ Fieldwork: Block 05 – Catucaí Amarelo 2 SL, planted at 2004;
- ✓ Space between plants: 3,40 x 0,70 m (4202 plants/ha);
- ✓ Block type randomized delineation, 3 repetitions with 20 plants each;
- ✓ Treatments: Conventional split application from the farmer, 100, 75 e 50% of farmer nitrogen dose applied as Ciclus NK and Testimony (without mineral fertilization);
- ✓ Application dates (CNK): 17/11/2009, 10/11/2010 e 16/11/2011;
- ✓ Ciclus NK formula: 24-00-12
- ✓ Evaluated characteristics: foliar content (N e K), vegetative growth (length of plagiotropic branches and number of vegetative nodes) and coffee production;
- ✓ Statistical analyze: SISVAR (Ferreira, 2000).

RESULTS

TABLE 1. Average length of plagiotropic branches (LPB - cm), number of vegetative nodes (NVN - unities), productivity and foliar content, from assay "CNK 06" during the period 2009/2012.

Treatments	Evaluated characteristics			Foliar content	
	LPB	NVN	Productivity (bags/ha)	N (%)	K (%)
100% CNK	12,54	6,29	32,4	3,2	1,90
75% CNK	12,69	6,41	31,4	3,2	1,86
50% CNK	13,82	6,67	39,4	3,1	1,80
Farmer	12,83	6,52	29,7	3,0	1,68
Testimony	11,40	5,80	16,6	3,0	1,89

TABLE 2. Averages, of the harvests 2009/2010, 2010/2011 e 2011/2012, for foliar content of Nitrogen (N) and Potash (K), length of plagiotropic branches (LPB), number of vegetative nodes (NVN) and productivity for all the 35 assays realized.

Treatments	Harvest 2009/2010				
	N (%)	K (%)	LPB (cm)	NVN (unities)	Productiviy (bags/ha)
Ciclus NK (50% N)	3,10	1,77	18,24	6,77	49,50
Farmer	3,08	1,71	16,54	6,33	47,20
Treatments	Harvest 2010/2011				
	N (%)	K (%)	LPB (cm)	NVN (unities)	Productiviy (bags/ha)
Ciclus NK (50% N)	3,00	1,85	14,24	6,09	43,06
Farmer	3,00	1,91	13,24	5,71	39,10
Testimony	2,60	1,68	11,81	5,14	27,52
Treatments	Harvest 2011/2012				
	N (%)	K (%)	LPB (cm)	NVN (unities)	Productiviy (bags/ha)
Ciclus NK (50% N)	3,20	1,68	13,71	5,85	52,97
Farmer	3,20	1,66	12,78	5,37	46,68
Testimony	2,50	1,40	10,11	4,30	23,49

CONCLUSIONS

The treatments with Ciclus NK, with 50% of N dose, supplied the nutrients on adequate way to coffee plants when compared to the conventional treatment used by the farmers, so the proposed program by Ciclus NK product showed to be efficient on nutritional balance between nitrogen and potash. It must be emphasized the convenience and economic viability of the product, because, with only one application, was possible to achieve the adequate level of nutrients during all the agricultural year. With regard to vegetative development, was observed that the length of plagiotropic branches and number of vegetative nodes were slightly bigger at Ciclus NK 50% N treatments when compared to farmers conventional treatments, what may reflect positively at the productions on the next harvests. With regard to coffee production, there was an increase in most of the evaluated areas, however the productivity evaluation will be the parameter to the continuity of the assays during next years.