

عنوان مقاله:

Interactions among leguminous trees, crops and weeds in a no-till alley cropping system

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خلاصه مقاله:

Trees improve the soil quality and their rapid growth in the tropics make agroforestry systems potentially effective for establishing low-input agricultural systems in this region. This study assessed the effects of the biophysical interactions among leguminous trees, weeds, cotton and maize in an alley cropping system. The experiment comprised six treatments: Clitoria + Gliricidia; Acacia + Gliricidia; Leucaena + Clitoria; Leucaena + Acacia; Leucaena + Gliricidia and Control and four replicates in randomised blocks. Cotton and maize were sown among the legumes. We analysed Ca, Mg, K, P and potential acidity and we measured the pH using CaCl₂ in the soil. Weeds were collected from within a square 0.5 m on a side in the cotton area. The application of the residues affected only the levels of Ca and Mg of the soil. The residues did not produce any differences in the density and richness of the weed species. The sensitivity of some crops to the allelopathic effects induced by the tree residues is evident mainly in root growth, in nutrient uptake and in the growth of the shoot. The results presented here support the view that the criteria for the choice of tree species for agroforestry systems must go well beyond the potential to enhance soil fertility to obtain the best results from agroforestry systems. Keywords: Allelopathy; Cotton; Leguminous residue; Maize; Weed

کلمات کلیدی:

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