

Kenaf and Cowpea as Sugarcane Cover Crops

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A Louisiana sugarcane field is typically replanted every four years due to declining yields, and, although, it is a costly process, it is both necessary and an opportunity to maximize the financial return during the next four year cropping cycle. Fallow planting systems (FPS) during the fallow period prior to planting sugarcane has the potential to influence not only the following sugarcane crop, but the economics of the production system as a whole. Research was conducted at the USDA, ARS, Sugarcane Research Unit at Houma, LA to determine the impact of unique FPS on sugarcane production. The experiment included seven treatments; two FPS crops, kenaf (*Hibiscus cannabinus* L.) and cowpeas (*Vigna unguiculata* L. Walp.), three FPS harvest treatments for each FPS crop, and a control. The experiment had four replications. The kenaf and cowpeas were planted on 8 May 2013. The three FPS harvest treatments included the removal of the FPS crop at 50 days after planting (DAP), the removal of the harvested FPS crop at 100 DAP, and lastly, cutting the FPS crop at 100 DAP and incorporating the plant material into the soil prior to sugarcane planting. The control treatment did not have a FPS crop. Sugarcane variety HoCP 96-540 was planted on 26 August 2013, 110 days after planting the FPS crops. The plant cane was harvested on 17 November 2015. Although the sugarcane total recoverable sugar (TRS) (kg/mt) was greater with the kenaf cover-crop treatment 50 DAP (120 kg/mt) compared to the cowpea treatment 50 DAP (111 kg/mt) and the cowpea 100 DAP with the residue incorporated (112 kg/ha), none of the FPS crop treatments were significantly better or worse than the control (no FPS crop). The average values for the sugarcane production factors across all treatments were 95,700 plants/ha (plant population), 112 mt/ha (sugarcane yield), 114 kg/mt (sugar yield per metric ton of sugarcane), and 12,841 kg/ha (sugar yield per hectare). The results demonstrate the potential use of these alternative FPS crops during the fallow period prior to planting sugarcane without adversely affecting the plant cane yields.