

Article title	Managing <i>Parkia biglobosa</i> and <i>Vitellaria paradoxa</i> Prunings for Crop Production and Improved Soil Properties in the Sub-Saharan Zone of Burkina Faso
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Abstract	<p>Tree pruning generates organic resources whose nitrogen content is not always recycled appropriately. A field experiment was conducted in the central plateau of Burkina Faso to test the possibilities of improving soil properties and crop production through the application of <i>Parkia biglobosa</i> (nééré) and <i>Vitellaria paradoxa</i> (karité) prunings as mulch. Two rates of leaf material of each species were applied and compared with a control (without mulch). Each treatment was repeated four times. Positions from the trees (around the trunk, eastern side, western side and outside the crown) were considered as blocks in a randomized blocks design. The physical and chemical properties of soil were measured during the second year whereas millet production was assessed over two cropping seasons. Two laboratory experiments were conducted with leachates of the leaves of each species to test the possible inhibition of crop germination or growth. The results of the field experiment showed a depressing effect of the mulch of <i>Parkia biglobosa</i> by 33% for millet grain yield and by 21% for total dry matter. However, <i>Vitellaria paradoxa</i> mulch increased grain yield by 120% and total dry matter by 43%. Pondering time and total C content were higher on plots that received the highest amount of leaves of both species. In the laboratory experiments, germination of sorghum seeds treated with leachate of 50 g of the leaves of <i>Vitellaria paradoxa</i> in 250 mL distilled water was reduced by 37% whereas the reduction was only 19% for the leachate of the leaves of <i>Parkia biglobosa</i>. It was concluded that, at least in the short term, millet production could be improved through the application of <i>Vitellaria paradoxa</i> mulch.</p>
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