



Duripan effect on soil water availability: study case in North-Central Namibia

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Soils with duripan and other hardpans are frequently disregarded for agriculture. However, in North-Central Namibia, farmers cultivate a type of sandy soil with a developing duripan at few decimetres of depth. This soil is particularly valuable for Pearl Millet cultivation during years with limited rainfall. Understanding the water dynamic and the role of the duripan in the soil moisture dynamic will improve livelihood and secure food production in North-Central Namibia, in Southern Angola and other areas in the world where similar soils appear. We recorded soil water content during five months at different depth in one of these sandy soil. The comparison of the recorded data with values calculated with models based on e.g. texture indicate that the duripan plays a very important role as water reservoir.

Our results demonstrate that soils with duripans should not be disregarded for agricultural development, especially in context with irregular rainfall patterns. Understanding the role of duripans based on this study will thus help to anticipate and alleviate the effect of climate change in northern Namibia and other semi-arid regions, where similar soils occur.