



Seedball Technology Also Enhances the Panicle Yield of Sorghum in the Sahelian Farmland

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Introduction

In low nutrient soil and under drought conditions of the African Sahel, enhanced pearl millet seedlings establishment is a prerequisite for high panicle yield. Seedball technology is an effective solution. Seedballs are a cheap and simple “seed-pelleting-technique” that combines local materials, seeds and optionally nutrient additives to enhance seedlings growth under poor soil conditions. Following the favourable experience in pearl millet production (about 30 % yield increase), transferring the seedball technology to sorghum was requested by local farmers. We report here on-farm field trials with optimised sorghum seedballs in Maradi, Niger.



Figure 1: Seedball production by local farmers during a traing session in Maradi, Niger

Objectives

- 1: to transfer the pearl millet seedball technology to subsistence sorghum production in the Sahel
- 2: to increase sorghum panicle yield on-farm using local resources

Methodology

- training of local farmers on sorghum (see Fig. 1)
- about 3.0 cm diameter-sized seedballs were manually formed from 80 g sand + 50 g loam + 25 ml water and 0.9 g seeds
- uncoated seeds (**Control**), seedballs with 4.5 g wood ash (**Wood-ash seedball**) or 1.0 g NPK (**NPK seedball**) were the treatments in simple split plot designs in 2020 season
- emergence and panicle yield per treatment were measured in 57 on-farm trials

Results

- > 90 % emergence was observed in all treatments; seedballs do not reduce germination in sorghum (data not shown)
- wood-ash and NPK seedballs increased sorghum panicle yield by 15 % and 40 %, respectively (Fig. 2)
- sorghum panicle yield enhancement was relatively higher in NPK-seedball due to more nutrient release as well as better response of sorghum to NPK fertilisers

Conclusions and outlook

- seedball technology is transferable to subsistence sorghum production in the Sahel region (Obj. 1)
- seedballs increase sorghum panicle yield on low-fertile soils (Obj. 2)
- more extensive field trials are recommended

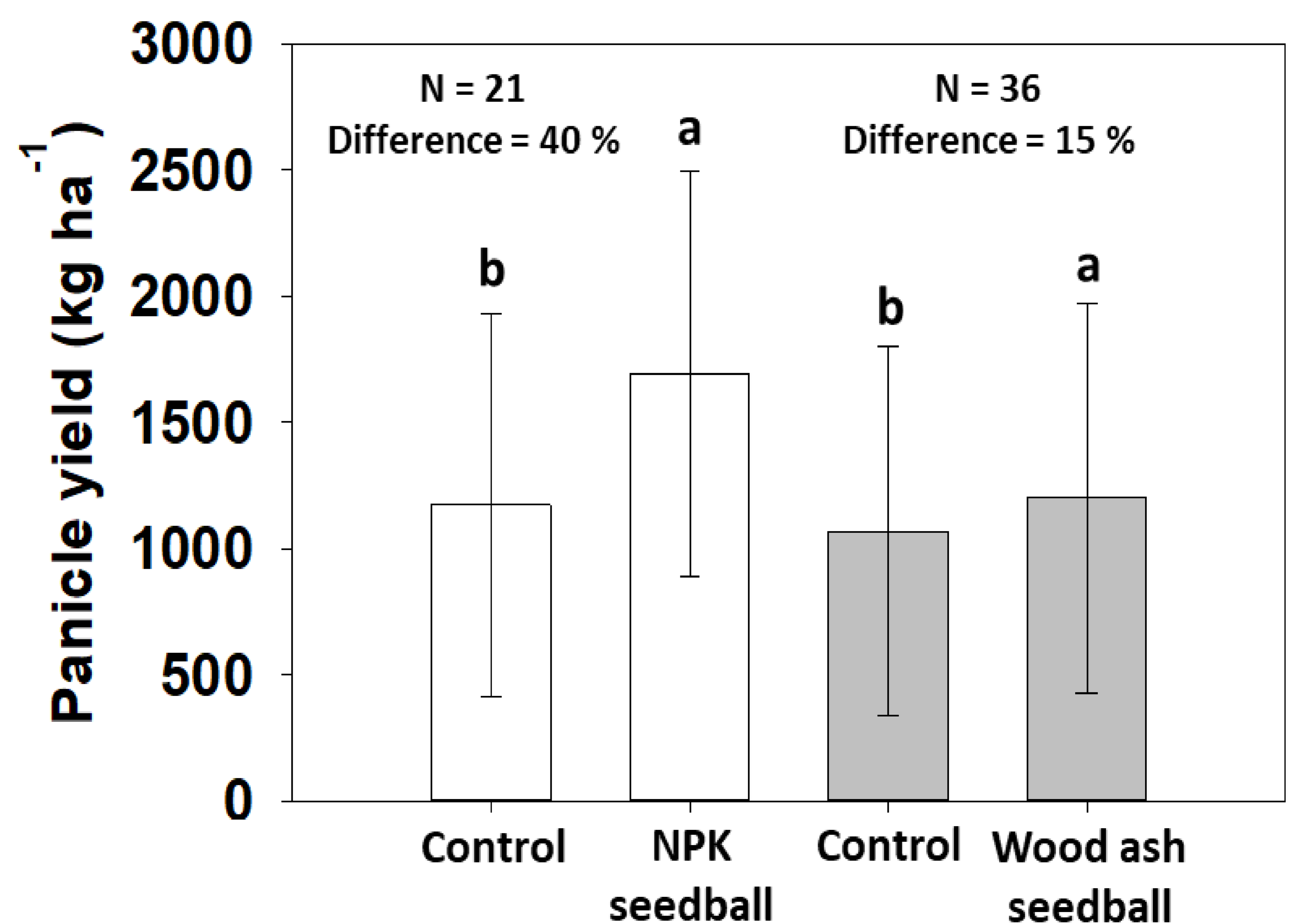


Figure 2: Sorghum panicle yield of seedball treatments compared to control (conventional sowing) at Maradi, Niger in 2020 season