

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



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Methodology

> training of local farmers on sorghum

(see Fig. 1)

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

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

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

here on-farm field trials with optimised

sorghum seedballs in Maradi, Niger.

on-farm using local resources

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

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