Four seasons maize field experiment on tillage and fertiliser options in Tanzania

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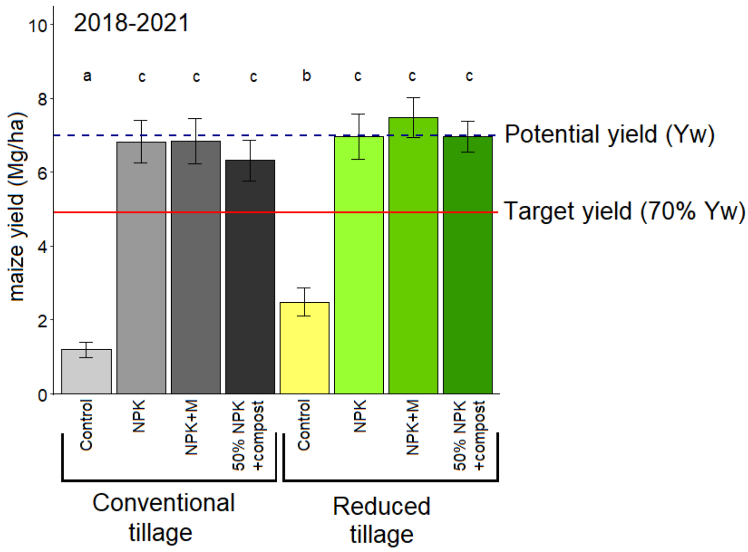
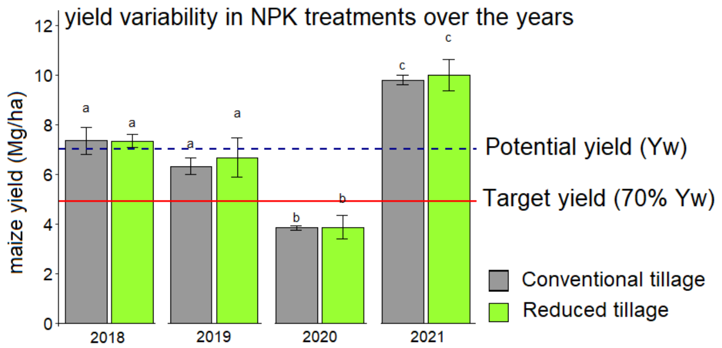
To assess nutrient-efficient options to narrow maize yield gaps, five fertiliser treatments were combined with two tillage options (conventional or reduced tillage) at the Farm for the Future Tanzania at Ilula, Iringa Region, in Tanzania. Each fertiliser treatment had four in-field replicates

Fertiliser treatment	Mineral fertiliser N, P, K (kg per ha)	Years included in trial
Control	(0N, 0P, 0K)	2018-2021
NPK mineral fertiliser only	(98N, 42P, 42K)	2018-2021
NPK mineral fertiliser + Mg, S and Zn	(98N, 42P, 42K)	2018-2021
50% NPK mineral fertiliser + 13 Mg DM /ha compost	(49N, 21P, 21K)	2018-2021
PK mineral fertiliser	(0N, 42P, 42K)	2019 & 2020

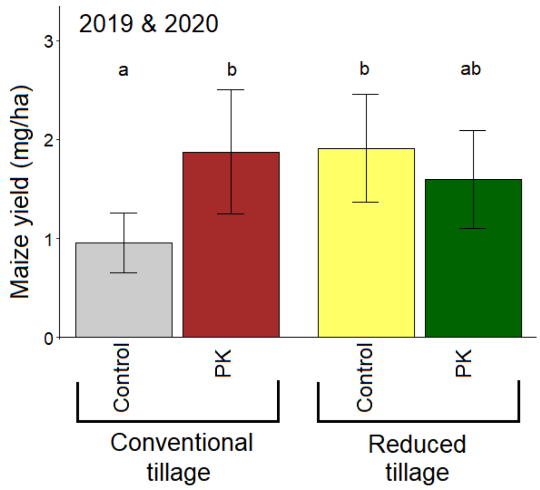




Reduced tillage outperformed conventional tillage at zero NPK inputs

Using optimal agronomic management, the mean yield over 4 years was similar to estimated potential yield (based on Global Yield Gap Atlas)

Maize yield varied significantly over the years, mostly due to weather and time of sowing



For the control plots, benefits of reduced tillage may be due to better root access to soil P&K and increased water volume due to in-situ rainwater harvesting and storage into the stripped furrow

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