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Assumptions:

Measurement is with a: 500ml Highland water bottle CAP that holds 6.7 ml, 4.7 g urea, and 7.4 g DAP, TSP, and KCl; 500ml Highland water (2-cm bottle) to hold 47 ml, 33 g urea and 52 g DAP, TSP, or KCl.

Planting is with row spacing of: 75 cm for maize, sorghum, Irish potato; 20 cm for rice, wheat, barley, finger millet; 50 cm for bean, faba bean, soybean; and teff is broadcast.

Grain prices per kg (in Birr): maize 5.5; sorghum 6; rice 12; tef 18; faba bean 12; barley 8; wheat 9; irish potato 6; finger millet 9; soybean 11; haricot bean 12; soybean 12.

Cost of using 50 kg of fertilizer (Birr): 750 urea; 900 TSP; 850 DAP; 750 KCl.

Fertilizer rates >20 kg/ha. **Broadcast width** is 2 m. **WAP** = weeks after planting.

Level 1 financial ability

Rice, lowland: broadcast 69 kg/ha urea at panicle initiation 2-cm bottle for 2.2 m.

Teff: 58 kg/ha urea at second weeding 2-cm bottle for 2.6 m.

Soybeans: band application 42 kg/ha TSP (CAP for 4.8 m)

Level 2 financial ability

Maize: point application 34 kg/ha DAP at planting (CAP for 12 plants)

Sorghum: point application 37 kg/ha DAP at planting (CAP for 10 plants)

Rice, lowland: 102 kg/ha urea at panicle initiation (2-cm bottle for 1.5 m).

Teff: band application 29 kg/ha DAP at planting (2-cm bottle for 8.4 m); broadcast 54 kg/ha urea at second weeding (2-cm bottle for 2.9 m).

Beans: band application 53 kg/ha TSP at planting (CAP for 2.6 m)

Soybeans: band application 67 kg/ha TSP at planting (CAP for 2.2 m)

Level 3 financial ability (maximizes profit per acre).

Maize: point application 64 kg/ha DAP at planting (CAP for 6 plants) and broadcast 23 kg/ha KCl at panicle initiation bottle CAP for 6.6 plants.

Sorghum: point application 78 kg/ha DAP at planting (CAP for 5 plants)

Rice, lowland: 132 kg/ha urea at panicle initiation (2-cm bottle for 1.2 m).

Beans: band application 101 kg/ha TSP (CAP for 2 m)

Teff: band application 39 kg/ha DAP at planting (2-cm bottle for 6.6 m); broadcast 50 kg/ha urea at second weeding (2-cm bottle for 3.1 m)

Soybeans: band application 91 kg/ha TSP at planting (CAP for 6 m)