

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.
- Spacing: maize is planted with 75x 25 cm spacing, faba bean 40x10cm and bean 40x15 cm spacing.
- Grain prices per kg (Birr): 4for maize; 12for bean; 12for Faba bean; 12for teff and 13 for rice.
- 50 kg of fertilizer use costs (Birr): 700for urea; 750for TSP; 850for DAP.
- **Fertilizer rates** >20 kg/ha. **Broadcast width** is 2 m. **WAP** = weeks after planting.

Level 1 financial ability

- For teff, 39 kg/ha DAP at planting (1 2-cm bottle for 6.6 m); broadcast topdress 52 kg/ha urea 4 WAP (2-cm bottle for 3 m)
- For wheat HP>3t: 25 kg/ha DAP at planting (1 2-cm bottle for 10.1 m); broadcast 72 kg/ha Urea 4 WAP (1 2-cm bottle for 2.1 m)
- For wheat LP<3t, broadcast 54 kg/ha urea 4 WAP (1 2-cm bottle for 2.8 m)
- For maize, point apply 47 kg/ha DAP at planting (1 CAP for 8 plants); and 29 kg/ha urea 4 WAP (1 CAP for 8 plants)

Level 2 financial ability

- For faba bean, band apply 55 kg/ha DAP at planting (1 CAP for 2.6 m).
- For teff, broadcast 56 kg/ha DAP at planting (1 2-cm bottle for 4.6 m) and 84 kg/ha urea at planting (1 2-cm bottle 11.8 m length) and 85 kg/ha urea 4 WAP (1 2-cm bottle 1.8 m).
- For wheat HP>3t, 32 kg/ha DAP at planting(1 2-cm bottle 8 m); broadcast 77 kg/ha Urea 4 WAP (1 2-cm bottle for 2 m)
- For wheat LP<3t, broadcast 50 kg/ha DAP at planting (1 2-cm bottle 5.6 m) and 64 kg/ha urea 4 WAP (1 2-cm bottle for 2.0 m)
- For maize, 80 kg/ha DAP at planting (1 CAP for 4.8 plants); point apply 53 kg/ha urea 4 WAP (1 CAP for 4.5 plants)

Level 3 financial ability (maximize profit per acre)

- For faba bean, band apply 79 kg/ha DAP at planting (1 CAP for 1.8 m).
- For teff, broadcast 74 kg/ha DAP (1 2-cm bottle 2 m wide by 3.4 m length) and 82 kg/ha urea at planting (1 2-cm bottle for 1.9 m) and 82 kg/ha urea 4 WAP (1 2-cm bottle for 1.9 m).
- For wheat HP>3t, broadcast 93 kg/ha DAP at planting(1 2-cm bottle 2 m wide by 2.8 m length) and 67 kg/ha urea at planting (1 2-cm bottle 2.3 m); and 68 kg/ha urea 4 WAP (1 2-cm bottle for 2.3 m).
- For wheat LP<3t, broadcast 92 kg/ha DAP at planting (1 2-cm bottle 2 m wide by 2.8 m length) and 50 kg/ha urea at planting (1 2-cm bottle 3.1 m); and 53 kg/ha urea 4 WAP (1 2-cm bottle for 3 m)
- For maize, 114 kg/ha DAP at planting (1 CAP for 34 plants); point apply 92 kg/ha urea 4 WAP (1 CAP for 2.5 plants).