



Malawi Fertilizer Use Optimizer: >1300 m asl
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The below assumes:

- **Calibration measurement unit:** a water bottle cap (CAP, 8 mL) for 6.1 g urea, 8 g for NPKSZn, 8.8 g for DAP and TSP.
- **Row spacing:** maize, pigeon pea, sweet potato 75 cm; bean, soybean, cowpea all 50 cm;; cassava, 1m.
- **Apply point spacing:** maize 25 cm; sweet potato 50 cm; pigeonpea 75 cm; cassava 1 m.
- **Grain prices MK/kg:** 625 maize; 500 sorghum; rice, unhulled, 600; 875 bean; 700 pigeonpea; 800 cowpea; 300 cassava; sweet potato 400.
- **Fertilizer use costs MK/50kg:** 82500 urea; 90000 NPKSZn & DAP; 93000 TSP.
- **Weeks after planting (WAP)**

Level 1 financial ability (<40,000 MK/ha available)

- Maize: at 8 WAP, point apply 22 kg DAP (CAP for 21 plants or 10 points) and 28 AmS (CAP for 17 plants and 9 points); point apply 57 kg urea 8 WAP (CAP for 12 plants and 6 points)
- Cowpea: band apply 16 kg DAP at planting (CAP for 11 m).
- Soybean: band apply 19 kg NPKSZn at planting (CAP for 9 m).
- Pigeon pea: point apply 13 kg NPKSZn at planting (CAP for 12 plants).
- Cassava: 40 kg NPKSZn at 2 WAP (CAP for 2.2 plants); point apply 40 kg urea at 8 WAP (CAP for 1.6 plants).
- Maize-bean intercrop: band apply 15 kg NPKSZn at 2 WAP (CAP for 8.5 m); point apply 70 kg urea at 8 WAP (CAP for 4.4 plants or 2.2 points).
- Maize-pigeonpea intercrop: 32 kg NPKSZn at 2 WAP (CAP for 13 points); point apply 42 kg urea at 8 WAP (CAP for 15 plants or 7.5 points).
- Sweet potato: point apply 69 kg DAP at 2 WAP (CAP 3.4 plants); 37 kg urea at 8 WAP (CAP 4 plants)
- Lowland rice: broadcast 64 kg urea at 6 WAT (CAP per 0.4 m with 2 m wide band)

Level 2 financial ability (40,000 to 75,000 MK/ha available; some may be applied at level 1)

- Maize: At 2 WAP, apply 40 kg NPKSZn (CAP for 12 plants or 6 points); point apply 75 kg urea 8 WAP (CAP for 4.6 plants or 2.3 point).
- Cowpea: band apply 16 kg DAP at planting (CAP 11 m).
- Bean: band apply 15 kg DAP at planting (CAP 11 m).
- Soybean: band apply 19 kg DAP at planting (CAP 9 m).
- Pigeon pea: point apply 13 kg DAP at planting (CAP for 12 plants or 6 points).
- Cassava: 40 kg NPKSZn at 3 WAP (CAP for 2 plants); point apply 30 kg urea at 8 WAP (CAP for 2 plants).
- Maize-bean intercrop: band apply 25 kg NPKSZn at 2 WAP (CAP for 4.7 m); point apply 50 kg urea at 8 WAP (CAP for 7 plants or 3.5 points).
- Maize-pigeonpea intercrop: 30 kg NPKSZn at 2 WAP (CAP for 16 plants or 8 points); point apply 45 kg urea at 8 WAP (CAP for 7 plants or 3.5 points).

- Sweet potato: point apply 81 kg DAP at 2 WAP (CAP 2.9 plants); 60 kg urea at 8 WAP (CAP 2.5 plants)
- Lowland rice: broadcast 100 kg urea at 6 WAT (CAP per 0.3 m with 2 m wide band)

Level 3 financial ability (>75,000 MK/ha available; some may applied at level 2)

- Maize: 130 kg NPKSZn at 2 WAP (CAP for 9 plants and 4.5 points); point apply 200 kg urea at 8 WAP (CAP for 1.7 plants or 0.9 points).
- Sorghum: at 8 WAP, point apply 53 kg DAP (CAP for 9 plants or 4.5 points); point apply 54 kg urea at 8 WAP (CAP for 5.8 plants and 2 points)
- Cowpea: band apply 43 kg DAP at planting (CAP for 4 m)
- Bean: band apply 50 kg DAP at planting (CAP for 3.5 m)
- Soybean: band apply 79 kg DAP at planting (CAP for 2.4 m).
- Pigeon pea: point apply 50 kg DAP at planting (CAP for 3 plants).
- Cassava: 125 kg NPKSZn at 2 WAP (CAP for 0.7 plants); point apply 80 kg urea at 8 WAP (CAP for 1 plants).
- Maize-bean intercrop: band apply 100 kg NPKSZn at 2 WAP (CAP 1.2 m); point apply 120 kg urea at 8 WAP (CAP for 2.8 plants or 1.4 points).
- Maize-pigeonpea intercrop: 120 kg NPKSZn at 3 WAP (CAP for 4 plants and 2 points); point apply 185 kg urea at 8 WAP (CAP for 1.8 plants).
- Sweet potato: point apply 96 kg DAP at 2 WAP (CAP 2.4 plants); 71 kg urea at 8 WAP (CAP 1.9 plants)
- Lowland rice: broadcast 27 kg DAP at 0 WAT (CAP per 1.6 m with 2 m wide band), and 100 kg urea at 6 WAT (CAP per 0.3 m with 2 m wide band)