

**The below assumes:**

**Calibration measurement** using a water bottle lid (CAP); contains 8 mL, 5.6 g urea, 9 g NPK, AmS and TSP

**Plant spacing:** maize, 75 x 30 cm; sorghum, 0.75 rows; cowpea, bean and soybean, 60 cm row spacing; pigeon pea, 75 x 75 cm; cassava 1 x 1 m.

**Grain values (MZN/kg):** maize, 16; sorghum, 20; cowpea, 34; soybean, 20; bean, 59; pigeon pea, 29; cassava, 8.

**Fertilizer use costs (MZN/50 kg):** urea, 3800; TSP, 4200; NPK 12-24-12, 3600; AmSO4, 2650.

Application rates are in kg/ha. Rates of <10 kg/ha are excluded. WAP= weeks after planting

**Level 1 financial ability;** <MZN 2200/ha available for fertilizer use.

**Maize:** point apply 60 kg urea (CAP, 5.5 plants or 2.7 points) 6 WAP

**Bean:** band apply 27 kg urea at planting (CAP, 3.5 m) and 17 kg TSP (CAP, 10.4 m) at planting.

**Soybean:** band apply 28 kg TSP (CAP, 6.3 m) at planting)

**Pigeonpea:** point apply 23 kg NPK applied at planting (CAP, 7 plants).

**Cassava:** point apply 40 kg NPK (CAP, 2 plants) at planting; 20 kg urea (CAP, 3 plants) at 8 WAP.

**Maize-bean Intercropping:** band apply 13 kg NPK (CAP, 8 m) at planting; 32 kg urea (CAP, 2.5 plants or 1.2 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 27 kg NPK (CAP, 16 plants or 8 points) at planting; 40 kg urea (CAP, 7.5 plants or 3.7 points) at 6 WAP.

**Level 2 financial ability;** MZN2200-4300/ha available for fertilizer use; some may be applied at Level 1 rates.

**Maize:** point apply 50 kg urea (CAP, 5 plants or 2.5 points) at planting; 50 kg urea (CAP, 6.4 plants or 3.2 points) at 6 WAP.

**Sorghum:** band apply 25 kg of urea (CAP, 3 m) and 25 kg TSP at planting (CAP, 4.7 m)

**Bean:** band apply 30 kg urea (CAP, 3.7 m) and 26 kg TSP at planting (CAP, 6.8 m).

**Soybean:** band apply 52 kg TSP (CAP, 3.4 m) at planting.

**Pigeonpea:** point apply 40 kg NPK applied at planting (CAP, 4 plants).

**Cassava:** point apply 80 kg NPK (Cap, 1 plants) at planting; ; 36 kg urea (CAP, 1.8 plants) at 8 WAP.

**Maize-bean Intercropping:** band apply 26 kg NPK (CAP, 4 m) at planting; 64 kg urea (CAP, 5 plants or 2.5 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 55 kg NPK (CAP, 8 plants or 4 points) at planting; 80 kg urea (CAP, 4 plants or 2 points) at 6 WAP.

**Level 3 financial ability;** MZN4300->6400/ha available for fertilizer use; some may be applied at Level 2 rates.

**Maize:** point apply 50 kg urea (CAP, 6.2 plants or 3.1 points) and 25 kg NPK (CAP, 16 plants or 8 points) at planting; 75 kg urea (CAP, 3.3 plants or 1.6 points) at 6 WAP.

**Sorghum:** band apply 25 kg NPK (CAP, 4.3 m) and 36 kg urea (CAP, 2 m); at planting

**Bean:** band apply 40 kg urea (CAP, 2.8 m) and 50 kg TSP (CAP, 3.5 m) at planting

**Cowpea:** band apply 43 kg TSP applied at planting (CAP, 4.1 m).

**Soybean:** band apply 68 kg NPK (CAP, 1.3 m) at planting.

**Pigeonpea:** band apply 50 kg NPK applied at planting (CAP, 3.5 plants).

**Cassava:** point apply 120 kg NPK (CAP, 0.7 plants) at planting; 50 kg urea (CAP, 1.2 plants) at 8 WAP.

**Maize-bean Intercropping:** band apply 40 kg NPK (CAP, 2.7 m) at planting; 95 kg urea (CAP, 2.7 plants or 1.3 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 80 kg NPK (CAP, 5.3 plants or 2.6 points) at planting; 120 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**The below assumes:** calibration measurement is with a water bottle lid (CAP); contains 8 mL, 5.6 g urea, 8 g NPK, TSP and AmS

**Plant spacing:** maize, 75 x 30 cm; sorghum, 0.75 rows; cowpea, bean and soybean, 60 cm row spacing; pigeon pea, 75 x 75 cm; cassava 1 x 1 m.

**Grain values (MZN/kg):** maize, 16; sorghum, 20; cowpea, 34; soybean, 20; bean, 59; pigeon pea, 29; cassava, 8.

**Fertilizer use costs (MZN/50 kg):** urea, 3800; TSP, 4200; NPK 12-24-12, 3600; AmSO4, 2650.

Application rates are in kg/ha. Rates of < 10 kg/ha are excluded.

**Level 1 financial ability; <MZN 2900 / ha available for fertilizer use.**

**Maize:** point apply 21 kg NPK (CAP, 5.7 plants) and 21 kg AmSO4 (CAP, 19 plants or 9 points) at planting; 60 kg urea (CAP, 5 plants or 2.5 points) at 6 WAP.

**Sorghum:** band apply 30 kg NPK (CAP, 3.3 m) at planting

**Cowpea:** band apply 20 kg TSP (CAP, 2.1 m) at planting

**Pigeon pea:** point apply 25 kg NPK (CAP, 8 plants) at planting

**Cassava:** point apply 37 kg NPK (CAP, 2.2 plants) at planting

**Maize-bean Intercropping:** band apply 100 kg NPK (CAP, 1.1 m) at planting; 75 kg urea (CAP, 4.2 plants or 2.1 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 100 NPK DAP (CAP, 4.3 plants) at planting; 100 kg urea (CAP, 3.2 plants or 1.6 points) at 6 WAP.

**Level 2 financial ability; MZN 2900-5800/ha available for fertilizer; some may be applied at Level 1**

**Maize:** point apply 108 kg NPK (CAP for 3.6 plants or 1.8 points) and 37 kg AmSO4 (CAP, 10 plants or 5 points) at planting; 84 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Sorghum:** band apply 58 kg NPK (CAP, 1.5 m) at planting

**Bean:** band apply 15 kg urea (CAP, 7.5 m) and 14 kg TSP at planting (CAP, 13 m).

**Cowpea:** band apply 54 kg NPK applied at planting (CAP, 3.6 m).

**Soybean:** band apply 31 kg TSP applied at planting (CAP, 5.7 m).

**Pigeon pea:** point apply 40 kg NPK at planting (CAP, 5 plants).

Cassava: point apply 54 kg NPK (CAP, 1.5 plants) at planting; point apply 32 kg urea at 8 WAP (CAP, 1.5 plants)

**Maize-bean Intercropping:** band apply 200 kg NPK (CAP, 0.5 m) at planting; 150 kg urea (CAP, 2.2 plants or 1.1 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 200 kg NPK (CAP, 2.1 plants) at planting; 200 kg urea (CAP, 1.7 plants) at 6 WAP.

**Level 3 financial ability; MZN 5800->8700/ha available for fertilizer; some may be applied at Level 2**

**Maize:** point apply 200 kg NPK (CAP, 2 plants or 1 point), 50 kg AmS (CAP for 8 plants or 4 points); 100 kg urea (CAP for 2.5 plants or 1.2 points) at 6 WAP.

**Sorghum:** band apply 106 kg of NPK at planting (CAP, 1 m)

**Bean:** band apply 20 kg urea (CAP, 5.6 m) and 29 kg TSP at planting (CAP, 9 m).

**Cowpea:** band apply 70 kg NPK applied at planting (CAP for 2.7 m).

**Soybean:** band apply 51 kg TSP applied at planting (CAP for 3.5 m).

**Pigeon pea:** point apply 60 kg NPK at planting (CAP, 4 plants).

**Cassava:** point apply 80 kg NPK (CAP, 1 plants) at planting; point apply 50 kg urea at 8 WAP (CAP, Plants)

**Maize-bean Intercropping:** band apply 250 kg NPK (CAP, 0.4 m) at planting; 220 kg urea (CAP, 1.6 plants) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 250 kg NPK (CAP, 1.7 plants) at planting; 250 kg urea (CAP, 1.6 plants) at 6 WAP.

**Aug 2023**
**This below assumes:**
**Calibration measurement** is with a water bottle lid (CAP): contains 8 mL, 6 g urea, 8g NPK, AmS and TSP

**Plant spacing:** maize, 75 x 30 cm; sorghum, 0.75 rows; cowpea, bean and soybean, 60 cm row spacing; pigeon pea, 75 x 75 cm; cassava 1 x 1 m.

**Grain values (MZN/kg):** maize, 16; sorghum, 20; cowpea, 34; soybean, 20; bean, 59; pigeon pea, 29; cassava, 8.

**Fertilizer use costs (MZN/50 kg):** urea, 3800; TSP, 4200; NPK 12-24-12, 3600; AmSO4, 2650.

Application rates are in kg/ha. Rates of &lt; 10 kg/ha are excluded.

**Level 1 financial ability; <MZN 2200 / ha available for fertilizer use.**
**Maize:** point apply 35 kg urea (CAP, 7 plants or 3.5 points) at 6 WAP.

**Sorghum:** band apply 33 kg NPK (CAP, 3 m) at planting

**Cowpea:** band apply 18 kg TSP at planting (CAP for 7 m)

**Bean:** band apply 22 kg urea at planting (CAP for 5.1 m)

**Soybean:** band apply 17 kg TSP (CAP, 10 m) at planting

**Pigeon pea:** point apply 25 kg TSP at planting (CAP, 6.5 plants).

**Cassava:** point apply 75 kg NPK (CAP, 1.1 plants) at planting; 35 kg urea (CAP, plants) at 8 WAP.

**Maize-bean Intercropping:** band apply 25 kg NPK (CAP, 4.3 m) at planting; 37 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 50 kg NPK (CAP, 8.5 plants) at planting; 50 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Level 2 financial ability; MZN2200-4400/ha available for fertilizer; some may be applied at Level 1**
**Maize:** point apply 27 kg AmS at planting (CAP for 15 plants or 7 points); 85 kg urea (CAP, 2.9 plants or 1.5 points) at 6 WAP

**Sorghum:** band apply 65 kg NPK (CAP, 1.6 m) at planting

**Cowpea:** band apply 27 kg TSP at planting (CAP for 4 m)

**Bean:** band apply 33 kg urea at planting (CAP for 3.4 m)

**Soybean:** band apply 47 kg TSP (CAP, 0.5 m)

**Pigeon pea:** point apply 30 kg TSP at planting (CAP, 5 plants).

**Cassava:** point apply 100 kg NPK (CAP, 0.8 plants) at planting; point apply 30 kg urea at 8 WAP (CAP, Plants)

**Maize-bean Intercropping:** band apply 37 kg NPK (CAP, 2.9 m) at planting; 62 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 70 kg NPK (CAP, 6.1 plants) at planting; 70 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Level 3 financial ability; MZN4400->6600/ha available for fertilizer; some may be applied at Level 1**
**Maize:** point apply 43 kg NPK (CAP, 9 plants or 4.5 points) and 42 kg AmS (CAP for 9.3 plants or 5 points) at planting; 111 kg urea (CAP for 2.2 plants or one point) 6 WAP.

**Sorghum:** band apply 110 kg NPK (CAP, 0.9 m) at planting

**Cowpea:** band apply 36 kg TSP at planting (CAP, 5 m)

**Bean:** band apply 20 kg urea (CAP for m)

**Soybean:** band apply 68 kg TSP (CAP, 2.6 m) at planting

**Pigeon pea:** point apply 40 kg TSP at planting (CAP, 4 plants).

**Cassava:** point apply 125 kg NPK (CAP, 0.6 plants) at planting; point apply 70 kg urea at 8 WAP (CAP, Plants)

**Maize-bean Intercropping:** band apply 50 kg NPK (CAP, 2.1 m) at planting; 90 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.

**Maize-pigeonpea Intercropping:** point apply 100 kg NPK (CAP, 4.3 plants) at planting; 100 kg urea (CAP, 3 plants or 1.5 points) at 6 WAP.