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**NIGERIA MID-ALTITUDE AEZ**

**Fertilizer Use Optimizer**

**The below assumes:**

**Calibration measurement** is with: a FARO water bottle lid (FARO) that holds about 6.3 g urea, 10 g SSP and KCl, 9g NPK 15:15:15, 11g NPK 20:10:10, and 14g ZnSO4; and with a GINO tomato can (GINO) of 70 ml to hold 49 urea, 77 g SSP and KCl; 165g ZnSO4, 70 g NPK 15:15:15, and 84 g NPK 20:10:10.

**Planting:** Maize, sorghum and pulses are planted at 75 cm x 25 cm; pearl millet 1 x 1 m; cassava 1 x 1 m.

**Crop values:** Naira/kg 50 maize; 60 Sorghum; 67 **Rice; 56 pearl millet; 120 unshelled groundnut; 165 cowpea, 120 soybean, and 20 cassava.**

**Fertilizer use costs for Naira for 50 kg:** 5500 Urea; 4500 SSP; 7000 MOP, 6000 for NPK 15-15-15 and 20-10-10; and 2000/kg for ZnSO4.

**Broadcast width: 2.5 m; WAP = weeks after planting, WAT = weeks after transplanting. Application rate is kg/ha.**

**Level 1 financial ability.**

**Cassava:** Point apply 100 kg of NPK 15-15-15 (1 FARO for 1 plant) at 4 WAP also point apply100 kg of Urea (1 FARO for 0.5 plant) at 8 WAP planting

**Maize:** Point apply 48 kg urea (1 FARO for 6.5 plants) at 3 WAP.

**Groundnut:** Mix 50kg of NPK 15:15:15 and 25 kg of SSP and point apply (1 FARO for 7 plants) at 2 WAP.

**Lowland rice:** Broadcast 53 kg urea at 1 WAT (1 GINO for 1 m)

**Upland rice:** Mix 87 kg of SSP with 6kg urea and broadcast at 3 WAP (1 GINO for 3 m)

**Sorghum:** Point apply 37 kg urea (1 FARO for 8.5 plants) at 3 WAP

**Soybean:** Point apply 23 kg SSP (1 FARO for 23 plants) at 2 WAP.

**Level2 financial ability.**

**Cassava:** Mix 150kg of NPK 15-15-15 and 100 kg of Urea and point apply at 8 WAP planting (1 Gino for 2.5 plants)

**Maize:** Point apply 50kg urea (1 FARO for 6.5 point) at 2 WAP. Apply 50 kg Urea at 6 WAP (1 FARO for 6.5 plants).

**Cowpea:** Point apply 125 kg SSP at 3 WAP (1 FARO for 4 plants).

**Groundnut:** Mix 50 kg of NPK 15:15:15, 100 kg of SSP and point apply (1 FARO for 3.5 plants) at 2 WAP.

**Lowland rice:** Broadcast 54 kg Urea at 1 WAT (1 GINO for 3.5 m) and broadcast 54 kg Urea at 5 WAT (1 Gino for 3.5 m).

**Upland rice:** Mix 1006kg of NPK 15:15:15 with 50kg SSP and broadcast (1 GINO for 2m) at 2 WAP and broadcast 28kg urea at 6WAP (1 GINO for 6.5m)

**Sorghum:** Point apply 48 kg of Urea (1 FARO for 6.5 plants) at 3WAP.

**Soybean:** Point apply 112 kg SSP (1 FARO for 4.5 plants) at 2 WAP.

**Level 3financial ability (maximizes profit per hectare).**

**Cassava:** Mix 100kg of NPK 15-15-15 and 87 kg of Urea and point apply at 8WAP (1 Gino for 3 plants)

**Maize:** Point apply 233 kg NPK 15:15:15 mixed with 7.5 kg ZnSO4 (1 FARO for 2 plants) at 3WAP. Points apply 75 kg Urea at 6WAP (1 FARO for 4 plants).

**Cowpea:** Point apply 125 kg SSP at 3 WAP planting (1 FARO for 4 plants).

**Groundnut:** Mix 100kg NPK with 155kg SSP and point apply (1 FARO for 2 plants) at 2 WAP.

**Lowland rice:** Broadcast 90 kg Urea at 1 WAT (1 Gino for 2 m) and broadcast 90 kg Urea at 5 WAT (1 Gino for 2 m).

**Upland rice:** Broadcast 228 kg of SSP at land preparation (1 Gino for 1.5 m) and broadcast 50 kg Urea at 3 WAP (1 Gino for 3.5 m) and 100 kg Urea (1 Gino per 2 m) at 6WAP.

**Sorghum:** Point apply 62 kg of Urea (1 FARO for 5 plants) at 3 WAP.

**Soybean:** Point apply 231 kg SSP (1 FARO for 2.5 plants) at 2 WAP.