



TANZANIA
WESTERN ZONE

(AEZ: W2, P3, P4, P5, P6, P7, P8)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby Care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 75 x 60 cm spacing, rice with 20 x 20 cm spacing Sweet potato: 1 x 0.3 m, soybean 50 cm x 10 cm; Sorghum: 75 x 60 cm and groundnut 90 x 15 cm
- Crop prices per kg (TSh): 650 maize; 1000 rice; 500 sweet potato; 725 sorghum; 1200 soybean; 780 groundnut
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCl.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 32000/acre available for fertilizer use

- Sorghum: point apply 15 kg urea (1 lid per 2.4 plant hills) at 6 WAP
- Sweet potato: point apply 36 kg urea (1 lid per 1.5 plant hills) at 6 WAP
- Soybean: broadcast 22 kg TSP (apply one BCB for 7.6 m length and 2 m width **OR** 1 lid for 0.6 m length and 2 m width) at planting
- Rice: broadcast 43 kg urea (apply one BCB for 2.5 m length x 2m width) at panicle initiation.
- Maize: point apply 16 kg urea (1 lid per 2.2 plant hills) at 6 WAP

Level 2 financial ability: TSh 32000 to 64000/acre available for fertilizer use

- Sorghum: point apply 20 kg urea (1 lid per 1.8 planting holes), 16 kg KCl (1 lid per 3.5 planting holes) at planting and 19 kg urea (1 lid per 1.9 planting hills) at 6 WAP
- Sweet potato: point apply 27 kg DAP (1 lid per 3.1 plant holes) at planting and 44 kg urea (1 lid per 1.2 plant hills) at 6 WAP
- Soybean: broadcast 33 kg TSP (apply one BCB for 5.1m length and 2m width) at planting
- Rice: broadcast 36 kg urea (apply one BCB for 3.0 m length and 2m width) at 2 WAP and 36 kg urea (apply one BCB for 3.0 m length x 2m width) at panicle initiation.
- Maize: point apply 24 kg urea (1 lid per 1.5 planting holes), 18 kg DAP (1 lid per 3.1 planting holes) at planting and 23 kg urea (1 lid per 1.6 plant hills) at 6 WAP.

Level 3 financial ability (maximize profit per acre): TSh 64000 to 96000/acre available for fertilizer use

- Sorghum: point apply 30 kg urea (1 lid per 1.2 planting holes), 18 kg DAP (1 lid per 3.1 planting holes), 20 kg KCl (1 lid per 2.8 planting holes) at planting and 31 kg urea (1 lid per 1.2 plant hills) at 6 WAP
- Sweet potato: point apply 44 kg DAP (1 lid per 1.9 planting holes) at planting and 53 kg urea (1 lid per 1 plant hill) at 6 WAP
- Soybean: broadcast 32 kg TSP (apply one BCB for 5.2m length and 2m width) at planting
- Groundnut: broadcast 22 kg TSP (apply one BCB for 7.6m length and 2m width) at planting
- Rice: broadcast 50 kg urea (apply one BCB for 2.1 m length and 2m width) at 2 WAP and 50 kg urea (apply one BCB for 2.1 m length x 2m width) at panicle initiation.
- Maize: point apply 38 kg urea (1 lid per 0.9 planting holes), 27 kg DAP (1 lid per 2.1 planting holes), 18 kg KCl (1 lid per 3.1 planting holes) at planting and 37 kg urea (1 lid per 1 plant hills) at 6 WAP.



TANZANIA
CENTRAL ZONE
(AEZ: P1, P2, P9, P10)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby Care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 75 x 60 cm spacing, rice with 20 x20 cm spacing, sweet potato: 1 x 0.3m; sorghum: 0.75 x 0.6m; cowpea 50 cm x20 cm
- Grain prices per kg (TSh): 660 maize; 1000 rice; 650 sorghum; 500 sweet potato; 1000 cowpea
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCl.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 33000/acre available for fertilizer use

- Rice: broadcast 17 kg DAP (apply one BCB for 9.8 m length x 2m width) at planting; broadcast 43 kg urea (apply one BCB for 2.5 m length x 2m width) at panicle initiation)
- Sweet potato: point apply 17 kg DAP (1 lid per 5.0 planting holes) at planting; point apply 40 kg urea (1 lid per 1.3 plant hills) at 4 WAP.
- Cowpea: point apply 17 kg DAP (1 lid per 14.9 planting holes) at planting

Level 2 financial ability: TSh 33000 to 66000/acre available for fertilizer use

- Rice: broadcast 32 kg DAP (apply one BCB for 5.2 m length x 2m width) at planting; 35 kg urea (apply one BCB for length 3 m x 2m width) at 2 WAP, 34 kg urea (apply one BCB for 3 m length and 2 m width) at panicle initiation
- Maize: point apply 18 kg urea (1 lid per 2 plant hills) 4 WAP.
- Sweet potato: point apply 36 kg DAP (1 lid per 2.3 planting holes) at planting and 47 kg urea (1 lid per 1.1 plant hills) at 4 WAP.
- Sorghum: point apply 28kg TSP (1 lid per 2 planting holes) at planting.

Level 3 financial ability (maximize profit per acre): TSh 66000 to 99000/acre available for fertilizer use

- Rice: broadcast 49 kg DAP (apply one BCB for 3.4 m length x 2m width) at planting; 49 kg urea (apply one BCB for 2.2 m length x 2m width) at 2 WAP and 48 kg urea (apply one BCB for 2.2 m length x 2m width) at panicle initiation.
- Maize: point apply 23 kg urea (1 lid per 1.6 plant hills) at 4 WAP
- Sorghum: point apply 51 kg DAP (1 lid per 1.1 planting holes) at planting
- Sweet potato: point apply 57 kg DAP (1 lid per 1.5 planting holes) at planting; 56 kg urea (1 lid per 1 plant hill) at 4 WAP.
- Cowpea: point apply 26kg DAP (1 lid per 9.8 planting holes) at planting; and 19 kg urea (1 lid per 8.5 plant hills) 4 WAP



TANZANIA

SOUTHERN HIGHLANDS ZONE

(AEZ: H except for H4, U, E7, E14)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, 6.27 g of DAP, TSP, KCl, or S/A
 - *55 Baby Care* bottle (BCB; approximate 75 ml) to hold 52.5g urea, 82.5 g DAP, TSP, KCl, or S/A
- Maize is planted with 75 x 30 cm spacing, rice with 20 x 20 cm spacing; wheat drilled 30 cm between row, bean 50 x 20 cm; Irish Potato 30 x 50 cm.
- For Maize-bean intercrop, bean is planted in between rows of maize
- Prices per kg (TSh): 250 maize; 1000 rice; 700 wheat; 1000; beans 500 Irish Potato.
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 60,000 TSP; 80,000 DAP; 60,000 KCl and 60,000 S/A.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 35000/acre available for fertilizer use

- Rice: 47 kg urea (apply one BCB for 2.3 m length and 2 m width) at panicle initiation.
- Maize bean intercrop: point apply on maize only 32 kg urea (1 lid per 2.2 plant hills) 4WAP
- Wheat: broadcast 22 kg urea (apply one BCB for 4.8 m length x 2 m width) at 6 WAP.
- Irish Potato: point apply 23 kg DAP (1 lid per 7.4 planting holes) at planting; 101 kg urea (1 lid per 1.1 plant hills) at 4 WAP or when a plant has 6 to 8 leaves

Level 2 financial ability: TSh 35000 to 70000/acre available for fertilizer use

- Rice: broadcast 35 kg urea (apply one BCB for 3 m length x 2m width) at 2WAP and 35 kg urea (apply one BCB for 3 m length x 2m width) at panicle initiation
- Maize bean intercrop: point apply 44 kg urea on maize (1 lid per 1.6 plant hills) 4 WAP.
- Wheat broadcast 61 kg urea (apply one BCB for 1.7 m length x 2m width) at 6 WAP.
- Irish Potato: point apply 32 kg DAP (1 lid per 5.3 planting holes) at planting; 119 kg urea (1 lid per 0.9 plant hills) at 4 WAP or when a plant has 6 to 8 leaves
- Sorghum: point apply 29 kg urea (1 lid per 1.2 plant hills) 4 WAP

Level 3 financial ability (maximize profit per acre): TSh 70000 to 105000/acre available for fertilizer use

- Rice: broadcast 25 kg DAP (apply one BCB for 6.7 m length x 2m width) at planting; 46kg urea (apply one BCB for 2.3 m length x 2m width) at 2 WAP and 45 kg urea (apply one BCB for 2.4 m length x 2m) at panicle initiation
- Maize: HP point apply 20 kg DAP on maize (1 lid per 5.6 planting holes) at planting and top-dress with 17 kg SA (1 lid for 6.6 plant hills) and 30 kg urea (1 lid per 2.4 plant hills) at 4 WAP
- Maize: LP point apply top dress with 15 kg SA (1 lid per 7.5 plant hills) and 35 kg urea (1 lid for 2.1 plant hills) at 4 WAP.
- Maize bean intercrop: point apply 25 kg DAP on maize (1 lid per 4.5 planting holes) at planting and 55 kg urea on maize (1 lid per 1.3 plant hills) 4 WAP.
- Bean: band 19 kg DAP (1 lid for 2.7 m length) at planting and 16 kg urea (1 lid for 2m length) at 4WAP
- Wheat: broadcast 22 kg DAP (apply one BCB for 7.6 m length x 2m width) and 48 kg urea (apply one BCB for 2.2 m length x 2m width) at planting; broadcast 48 kg urea (apply one BCB for 2.2 m length x 2 m width) at 6 WAP.
- Irish Potato: point apply 40 kg DAP (1 lid per 4.2 planting holes) at planting; 116 kg urea (1 lid per 0.9 plant hills) at 4 WAP or when a plant has 6 to 8 leaves
- Sorghum: point apply 24 kg DAP (1 lid per 2.3 planting holes) at planting and top dress with 54 kg Urea (1 lid for 0.7 plant hills) at 4 WAP.



TANZANIA
SOUTHERN ZONE

(AEZ: E <1000m in Southern Zone, S1, S2)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby Care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 75 x 60 cm spacing, rice with 20 x 20 cm spacing, Cassava 100 x 100 cm., Sorghum: 75 x 60 cm; Ground nuts 45 x 15cm
- Crop prices per kg (TSh): 660 maize; 1000 rice, Sorghum: 300, cassava 250, cowpea 500
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCL.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 24000/acre available for fertilizer use

- Rice: broadcast 18 kg urea (apply one BCB for 5.9 m length x 2m width) and 17 kg urea (apply one BCB for 6.2 m length x 2m width) at panicle initiation
- Cassava: point apply 37 kg DAP (1 lid for 0.7 planting holes) and 22 kg KCl (1 lid per 1.2 planting holes) at planting; 20 kg urea (1 lid for 0.8 plant hills) 8 WAP.

Level 2 financial ability: TSh 24000 to 48000/acre available for fertilizer use

- Rice: broadcast 28 kg urea (apply one BCB for 3.8 m length and 2m width) at 2WAP and 28 kg urea (apply one BCB for 3.8 m length and 2m width) at panicle initiation
- Maize: point apply 24 kg urea (1 lid for 1.5 plant hills) at 4 WAP
- Sorghum: point apply 25 kg urea (apply 1 lid for 1.4 plant hills) at 4 WAP
- Cassava: point apply 53 kg DAP (1 lid for 0.5 planting hole) and 30 kg KCl (1 lid per 0.8 planting holes) at planting; 23 kg urea (1 lid for 0.7 plant hill) at 4 WAP.

Level 3 financial ability (maximize profit per ha): TSh 48000 to 72000/acre available for fertilizer use

- Rice: broadcast 38 kg Urea (apply one BCB for 2.8 m length and 2m width) at 2 WAP, and 37 kg urea (apply one BCB for 2.9 m length and 2 m width) at panicle initiation
- Maize: point apply 21 kg urea (1 lid for 1.7 planting holes at planting) and 21 kg urea (1 lid for 1.7 plant hills) at 4 WAP
- Sorghum: point and 37 kg urea (apply 1 lid for 1 plant hills) at 4 WAP
- For cassava point apply 61 kg DAP (1 lid for 0.4 planting holes) and 37 kg KCl (1 lid per 0.7 planting holes) at planting and 24 kg urea (1 lid for 0.7 plant hills) at 4 WAP
- Groundnuts band 20 kg TSP (1 lid for 2.8 m length) at planting



TANZANIA

LAKE ZONE >1300 m

(AEZ: N8, N9, N10, W1, W4)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 0.75 x 0.60 m spacing, sweet potato: 1 x 0.3 m, beans 0.50 x 0.20 m spacing; finger millet 30 x 10 cm; banana 3 m x 3 m
- Maize-bean intercrop, bean is planted in between rows of maize
- Crop prices per kg (TSh): 700 maize; 500 Sweet potato; 1500 Beans; 300 banana; 900 finger millet;
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCl.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.
- **Level 1 financial ability: < TSh 21000/acre available for fertilizer use**
- Sweet potato: point apply 25 kg TSP (1 lid per 3.4 planting holes) at planting 16kg Urea (1 lid for 3.4 plant hills) 4WAP
- Banana HP>20t/ac: apply in 5 points around the plant 20 kg Urea (one BCB per 1.2 points)
- For Irish potato point apply 24 kg TSP (1 lid for 4.7 planting holes) at planting and 23kg Urea (1 lid for 3.1 plant hills) 6 WAP

Level 2 financial ability: TSh 21000 to 42000/acre available for fertilizer use

- Maize: HP point apply 22 kg urea (1 lid per 1.6 plant hills) 4 WAP
- Maize bean-intercrop: point apply 23kg urea (1 lid for 1.6 plant hills) 6 WAP on maize
- Finger millet: broadcast 15 kg urea (apply one BCB for 7.1 m length and 3m width) at 4 WAP
- Sweet potato: point apply 29kg TSP (1 lid per 2.9 planting holes) at planting and 34 kg urea (1 lid per 1.6 hills at 6 WAP
- Banana HP >20t: apply in 5 points around the plant, 29 kg KCl (one BCB for 1.3 points) and 26 kg urea (apply one BCB for 0.9 points).
- For Irish potato point apply 34kg TSP (1 lid for 3.3 planting holes) at planting and 35 kg Urea (1 lid 2.1 plant hills) 6 WAP.

Level 3 financial ability (maximize profit per acre): TSh 42000 to 63000/acre available for fertilizer use

- Maize: HP point apply 19 kg TSP (1 lid per 0.3 planting holes) at planting and 32 kg urea (1 lid per 1.1 plant hills) 4 WAP
- Maize: LP point apply 23 kg urea (1 lid per 1.6 plant hills) at 4 WAP
- Maize bean-intercrop: point apply 16 kg TSP (1 lid for 3.5 planting holes) at planting on maize and 29 kg urea (1 lid for 1.2 plant hills) 6 WAP on maize
- Finger millet: broadcast 16 kg urea (apply one BCB for 6.6 m length and 2 m width) at 4 WAP
- Sweet potato: point apply 39 kg TSP (1 lid per 2.2 planting holes) at planting and 39 kg urea (1 lid per 1.4 plant hills) 6 WAP
- Banana HP > 20t: apply in 5 points around the plant, 40 kg KCl (one BCB for 0.9 points) and 30 kg urea (apply one BCB for 0.8 points).
- Irish potato point apply 47 kg TSP (1 lid per 2.4 planting holes) at planting and 45 kg urea (1 lid for 1.6 plant hills) 6 WAP



TANZANIA
LAKE ZONE < 1400 m
(AEZ: W3, P4, P8)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 0.75 x 0.60 m spacing, rice with 0.20 x 0.20 m spacing sweet potato: 1 x 0.3 m, , finger millet 0.3 x 0.1m, sorghum: 0.75 x 0.6m
- Crop prices per kg (TSh): 700 maize; 1000 rice; 500 sweet potato; 500 sorghum; 900 Finger millet
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCL.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 28000/acre available for fertilizer use.

- Rice: broadcast 26 kg urea (apply one BCB for 4.1 m length and 2 m width) at 2 WAP and 27 kg urea (apply one BCB for 3.9 m length and 2 m width) at panicle initiation.
- Sweet potato: point apply 34 kg urea (1 lid per 1.6 plant hills) at 6 WAP
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Level 2 financial ability: TSh 28000 to 56000/acre available for fertilizer use

- Rice: broadcast 34 kg Urea (apply one BCB for 3.1 m length x 2m) at 2 WAP and 26 kg Urea (apply one BCB for 4.1 m length x 2m width) at panicle initiation.
- Maize: point apply 33 kg Urea (1 lid for 1.1 plant hills) 4 WAP
- Sweet potato: point apply 49 kg TSP (1 lid for 1.7 planting holes) at planting; 31 kg urea (1 lid for 1.7 plant hills) at 6WAP

Level 3 financial ability (maximize profit per acre): TSh 56000 to 84000/acre available for fertilizer use

- Rice: broadcast with 51 kg Urea (apply one BCB for 2.1 m length at 2 WAP) and 50kg Urea (apply one BCB for 2.1 m length x 2m) at panicle initiation.
- Maize: point apply 49kg Urea (1 lid per 0.7 plant hills) 4 WAP
- Sweet potato: point apply 50 kg TSP (1 lid per 1.7 planting holes) at planting; and top dress 62 kg Urea (1 lid per 0.9 plant hills) 6 WAP
- Sorghum: point apply 45 kg TSP (1 lid per 1.3 planting holes) at planting and top dress 27 kg Urea (1 lid per 1.3 plant hills) 4 WAP
- Finger millet broadcast 24kg Urea (one BCB for 4.4 m length and 2 m width) at 4 WAP



TANZANIA EASTERN ZONE

(AEZ: all C; E <1000 m)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 75 x30 cm spacing, rice with 20 x20 cm spacing. Sorghum: 75 x 60 cm; cassava 100x 100 cm, cowpea with 50 x 20cm.
- Crop prices per kg (TSh): 660 maize; 1000 rice, Sorghum: 300, Cassava 500 Cowpea 1500
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCL.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 35000/acre available for fertilizer use

Rice: HP broadcast 34 kg Urea (apply one BCB for 3.1 m length and 2m width) 2 WAP and 34 kg urea (apply one BCB for 3.1 m length and 2m width) at panicle initiation.

Cassava: point apply 29 kg DAP (1 lid for 0.9 planting holes) and 17 kg KCl (1 lid for 1.5 planting holes) at planting and top dress with 29 kg Urea (1 lid for 0.6 plant hills) 4 WAP and 29 kg urea (1 lid for 0.6 plant hills) 8 WAP

Level 2 financial ability): TSh 35000 to 70000/acre available for fertilizer use

- Rice: HP broadcast 63 kg Urea (apply one BCB for 1.7 m length x 2m width) at 2 WAP and 63 kg urea (apply one BCB for 1.7 m length x 2m width) at panicle initiation
- Cassava: point apply 47 kg DAP (1 lid for 0.5 planting holes) and 24 kg KCl (1 lid for 1.1 planting holes) at planting. Top dress with 41 kg urea (1 lid for 0.4 plant hill) 2 WAP and 40 kg urea (1 lid for 0.4 plant hill) 8WAP
- Maize: point apply 28 kg Urea (1 lid per 1.3 plant hills) 4 WAP
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Level 3 financial ability (maximize profit per acre): TSh 70000 to 105000/acre available for fertilizer use

- Rice: HP broadcast 20kg DAP (apply 1 BCB for 8.3 m length and 2 m width) at planting and; 64 kg Urea (apply one BCB for 1.7 m length x 2m width) 2WAP and 64kg urea (apply one BCB for 1.7 m length and 2m width) at panicle initiation
- Rice: LP broadcast 17 kg Urea (apply one BCB for 6.2 m length and 2 m width) 2WAP
- Cassava: point apply 61 kg DAP (1 lid for 0.4 planting hole), 33 kg KCl (1 lid for 0.8 planting hole), 20 kg TSP (1 lid for 1.3 planting hole) at planting. Top dress with 51 kg Urea (1 lid for 0.3 plant hill) 4 WAP and 51 kg Urea (1 lid for 0.3 plant hill) 8WAP
- Maize: point apply 22 kg DAP (1 lid per 2.6 planting holes) at planting and 48 kg Urea (1 lid for 0.7 plant hills) 4 WAP
- Sorghum: point apply 17 kg DAP (1 lid per 3.3 planting holes) at planting and 18 kg urea (1 lid per 2.0 plant hills) 4 WAP
- Cowpea: point apply 18kg DAP (1 lid for 14.1 planting holes) at planting and 15kg Urea (1 lid for 10.8 plant hills) 4 WAP



TANZANIA
NORTHERN ZONE

(AEZ: E2 (>1000 m), N3, N4, N5, N6)



FERTILIZER USE OPTIMIZER: PAPER VERSION

The below assumes:

- Calibration measurement is with a
 - *Kilimanjaro* water bottle lid (lid, 5.7 ml) for 4.0 g urea, or 6.27 g of DAP, TSP, or KCl;
 - *55 Baby care* bottle (BCB; approximate 75 ml) to hold 52.5g urea or 82.5 g DAP, TSP, or KCl.
- Maize is planted with 75 x30 cm spacing, rice with 20 x20 cm spacing. Sorghum: 75 x 60 cm; Finger millet 30x10 cm, wheat drilled 30 cm between row, beans 50 x 20 cm, Pigeonpea 50 x 20 cm
- For Maize-bean and maize-pigeon pea intercrops, bean and pigeon pea is planted in between rows of maize
- Crop prices per kg (TSh): 660 maize; 1000 rice, 300 sorghum; 900 finger millet; 1500 beans; 2000 pigeon pea
- 50 kg of fertilizer use costs (TSh): 55,000 urea; 65,000 TSP; 75,000 DAP and 60,000 KCL.
- Application rates are in **kg/acre**. The minimum application rate is **15 kg/acre**. **Broadcast** application width is 2 m.

Level 1 financial ability: < TSh 21000/acre available for fertilizer use

- Rice lowland: broadcast 15 kg DAP (apply one BCB for 11.1 m length x 2m width)at planting and 39 kg urea (apply one BCB for 2.7 m length x 2m width)2 WAP at panicle initiation
- Maize HP: point apply 26 kg Urea (1 lid for 1.4 plant hills) 4 WAP
- Maize-bean intercrop: 17 kg Urea (1 lid for 2.1 plant hills) 4 WAP
- Maize-pigeon pea intercrop: point apply 24 kg Urea (1 lid for 1.5 plant hills) 4 WAP on maize
- Finger millet: broadcast 21kg Urea (1 BCB for 5.1 m length and 2m width) 4 WAP

Level 2 financial ability: TSh 21000 to 42000/acre available for fertilizer use

- Rice lowland: broadcast 27 kg DAP (apply one BCB for 6.2 m length x 2m width) at planting and 28 kg urea (apply one BCB for 3.8 m length x 2m width)2 WAP and 28 kg Urea (apply one BCB for 3.8 m length x 2m width) at panicle initiation
- Maize HP: point apply 26kg DAP (1 lid for 2.2planting holes) and 15 kg KCl (1 lid for 3.8 planting holes) at planting and 30 kg Urea (1 lid for 1.2 plant hills) 4 WAP
- Maize LP: point apply 27 kg Urea (1 lid for 1.3 plant hills) 4 WAP
- Maize-bean intercrop: 30 kg Urea (1 lid for 1.2 plant hills) 4 WAP.
- Bean: point apply 15 kg DAP (1 lid for 16.9 planting holes) at planting
- Maize-pigeon pea intercrop: point apply 30 kg Urea (1 lid for 1.2 planting holes) at planting; Urea 35 kg (apply one lid for 1.0 plant hill) at 4 WAP on maize
- Pigeon pea: point apply 15 kg TSP (1 lid for 16.9 plant hills) 4 WAP.
- Finger millet: broadcast 35 kg Urea (apply one UWB for 3 m length x 2m at 4 WAP)

Level 3 financial ability (maximize profit per acre): TSh 42000 to 63000/acre available for fertilizer use

- Rice lowland: broadcast 37 kg DAP (apply one BCB for 4.5 m length x 2m width) at planting and 32 kg urea (apply one BCB for 3.3 m length x 2m width)2 WAP and 35kg Urea (apply one BCB for 3 m length x 2m width) at panicle initiation
- Maize HP: point apply 40kg DAP (1 lid for 1.4 planting holes), 15 kg TSP (1 lid for 3.8 planting holes) and 21kg KCl (1 lid for 2.7 planting holes) at planting and 36 kg Urea (1 lid for 1 plant hills) 4 WAP
- Maize LP: point apply 43kg Urea (1 lid for 0.8 plant hills) 4 WAP
- Maize-bean intercrop: 15 kg DAP (apply one lid for 3.8 planting holes) at planting.
- Bean: point apply 20 kg DAP (1 lid for 12.7 planting holes) at planting
- Maize-pigeon pea intercrop: point apply 46 kg Urea (1 lid for 0.8 planting holes) at planting; Urea 46 kg (apply one lid for 0.8 plant hills) at 4 WAP on maize
- Pigeon pea: point apply 18kg TSP (1 lid for 14.1 plant hills) 4 WAP.
- Finger millet: broadcast 48 kg Urea (apply one BCB for 2.2 m length x 2m width) at 4 WAP