



**Malawi Fertilizer Use Optimizer: paper version, Zone <900 m asl**  
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**The below assumes:**

- **Calibration measurement unit:** a water bottle cap (CAP, 8 mL) for 5.6 g urea, 8 g of NPS.
- **Row spacing:** maize, 75 cm; bean, soybean, cowpea all 50 cm; pigeon pea 75 cm.
- **Apply point spacing:** maize and cowpea, 25 cm; g/nut 20 cm; pigeon pea 75 cm.
- **Grain prices:** per kg (MK): 120 maize; 350 bean; 120 rice; 300 sorghum; 600 pigeon pea; 600 cow pea; 700 g/nut;
- **Fertilizer use costs per 50 kg bag (MK):** 25000 urea; 23000 NPS.
- **Weeks after planting (WAP)**

**Level 1 financial ability**

- Maize: point apply 34 kg NPS, 8 WAP (1 CAP for 12.6 points); point application 34 kg urea, 8 WAP (1 CAP for 8.3 plants or 4.2 points)
- Cowpea: point apply 49 kg NPS at planting (1 CAP for 8.7 plants or 4.3 points).
- Soybean: band apply 66 kg NPS at planting (1 CAP for 4.3 m).
- Pigeon pea: point apply 67 kg NPS at planting (1 CAP for 6.4 plants or 3.2 points).

**Level 2 financial ability**

- Maize: 69 kg NPS at 2 WAP (1 CAP for 8.8 points); point apply 69 kg urea, 8 WAP (1 CAP for 8.2 plants or 4.1 points).
- Cowpea: point apply 69 kg NPS at planting (1 CAP for 6.2 plants or 3.1 points)
- Soybean: band apply 90 kg NPS at planting (1 CAP for 0.9 m).
- Pigeon pea: point apply 92 kg NPS at planting (1 CAP for 4.6 points).
- Sorghum: 52 kg NPS, 2 WAP (1 lid for 8.2 points); point apply 28 kg urea, 8 WAP (1 lid for 10 plants or 5 points)

**Level 3 financial ability**

- Maize: 150 kg NPS at 2 WAP (1 CAP for 2.9 plants or 2 points); point apply 121 kg urea, 8 WAP (1 CAP for 2.4 plants or 1.2 points).
- Cowpea: point apply 89 kg NPS at planting (1 CAP for 4.8 plants or 2.4 points)
- Soybean: point apply 142 kg NPS at planting (1 CAP for 0.9 m).
- Pigeon pea: point apply 116 kg NPS at planting (1 CAP for 3.6 points).
- Sorghum: 94 kg NPS, 2 WAP (1 lid for 4.6 points); point application 33 kg urea, 8 WAP (1 lid for 8.5 plants or 4.3 points)