

Kenya Central Fertilizer Use Optimizer: paper version, (CAN-DAP) Nov. 2016

The below assumes:

- Calibration measurement is with: i) a 3.14 ml of soda bottle with lining that holds about 3.5 g DAP and CAN and 3.5 g MOP ii) a 100 g blue band tin (BB) has approx. 124 ml to hold 136 g DAP and CAN and 136.4 g MOP. It is assumed maize (25 cm within row) and is planted with 75 cm, beans 50cm, rice 25cm row and wheat 25cm row spacing.
- It is assumed grain prices per kg (Ksh): 25 maize; 60 beans, 50 rice and, 30 wheat.
- It is assumed 50 kg of fertilizer costs (Ksh): 2800 CAN; 3600 DAP and 3600 MOP.
- Application rates are in kg/ac.
- Any fertilizer rate application that is less than 10 kg/acre is not economical and should be converted to another fertilizer. WAP –weeks after planting

Level 1 financial ability

- Maize HP >4t: At planting, apply 21 kg DAP (1 top for 4 holes).
- Maize LP <4t: At planting, apply 11 kg DAP (1 top for 7 holes).
- Maize-bean intercropping: At planting, band 22 kg DAP (1 top for 0.8 m). Side dress with 12 kg CAN (1 top for 6 holes) at 6 WAP.
- Lowland rice: At planting, broadcast 25 kg DAP (1 BB for 11 m @ 2 m wide) and 16 kg MOP (1 BB for 17 m @ 2 m wide) and 48 kg CAN as a side dress at panicle initiation (1 BB for 6 m @ 2 m wide).
- Wheat HP > 3t: At planting, band 15 kg DAP (1 lid for 4 m).

Level 2 financial ability

- Maize HP >4t: At planting, apply 69 kg DAP (1 top for 1 hole).
- Maize LP <4t: At planting, apply 33 kg DAP (1 top for 2 holes). Side dress with 13 kg CAN (1 top for 6 holes) at 6 WAP.
- Bean: At planting, band 16 kg DAP (1 top for 1.7 m).
- Maize- bean intercropping: At planting, apply 34 kg DAP (1 top for 2 holes). Side dress with 28 kg CAN (1 top for 3 plants) at 6 WAP.
- Lowland rice: At planting, broadcast 37 kg DAP (1 BB for 7.2 m @ 2 m wide) and 21 kg MOP (1 BB for 13 m @ 2 m wide). Side dress with 72 kg CAN at panicle initiation (1 BB for 4 m @ 2 m wide).
- Wheat HP>3t: At planting, band 39 kg DAP (1 lid for 1.6 m). Side dress with 16 kg CAN by banding (1 lid for 2 m) at panicle initiation.
- Wheat LP<3t: At planting, band 25 kg DAP (1 lid for 2.5 m). Side dress with 22 kg CAN by banding (1 lid for 3 m) at panicle initiation.

Level 3 financial ability (maximize profit per acre).

- Maize HP>4t: At planting, apply 81 kg DAP (1 top for 1 hole). Side dress with 25 kg CAN (1 top for 3 plants) at 6 WAP.
- Maize LP<4t: At planting, apply 60 kg DAP (1 lid for 1 hole). Side dress with 27 kg CAN (1 top for 3 plants) at 6 WAP.
- Bean: At planting band, apply 26 kg DAP (1 top for 1 m).
- Maize-bean intercropping: At planting, band apply 48 kg DAP (1 top for 0.4 m) and 12 kg MOP (1 top for 1.5 m). Side dress with 47 kg CAN (1 lid for 1.5 plants) at 6 WAP.
- Lowland rice: At planting, broadcast 59 kg DAP (1 BB for 5 m @ 2 m wide) and 27 kg MOP (1 BB for 10 m @ 2 m wide). Side dress with 81 kg CAN at panicle initiation (1 BB for 3 m @ 2 m wide).
- Wheat HP>3t: At planting, band 61 kg DAP (1 lid for 1 m) and 16 kg MOP (1 lid for 4 m). Side dress with 36 kg CAN by banding (1 lid for 2 m) at panicle initiation.
- Wheat LP<3t: At planting, band 52 kg DAP (1 lid for 1 m) and 16 kg MOP (1 lid for 4 m). Side dress with 45 kg CAN by banding (1 lid for 1.5 m) at panicle initiation.