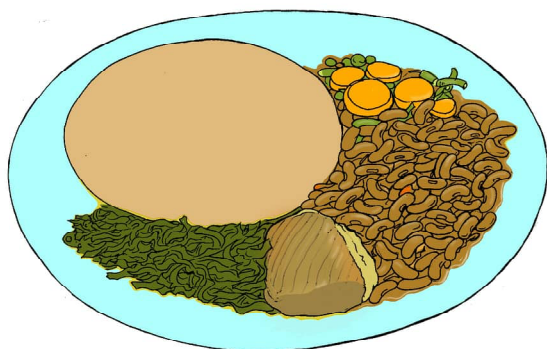


CLIMATE SMART SORGHUM PRODUCTION



1. Benefits of growing sorghum

- Can be grown in marginal areas where maize is limited.
- Drought resistant and able to withstand periods of waterlogging.
- High in dietary fiber, protein, calcium, zinc and iron.



2. Varieties of sorghum

- White grained, used as meal to make sadza and thin porridge.
- Brown or red grained sorghum used for brewing traditional beer and maheu



3. Climate and soil requirements

- Annual rainfall range of 300 to 750 mm (areas too dry for maize crop).
- Deep, well-drained loamy soils (10 -30% clay) best sandy - soil poor.
- Alkaline tolerant - pH between 5.5 and 8.5.



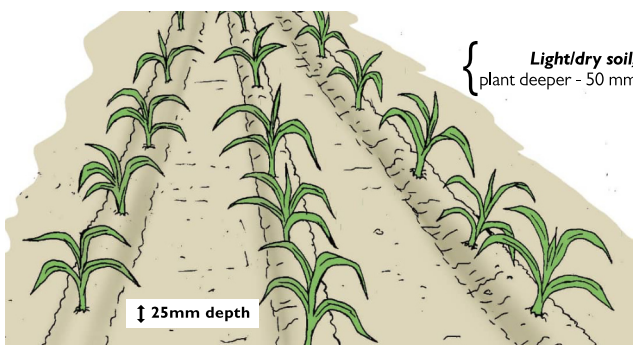
4. Recommended time for planting

- After the first rains, late November or early December (more risk).
- November planting with first rains is safest under dryland conditions.
- In October prepare basins and furrows and acquire fertilizer



5. Seeding rate and plant population

- Seeding from 7 to 12 kg/ha (depends on seed size).
- Plant population 130,000 to 150,000 per hectare.
- High seed quality, seedbed preparation, moist soil, and pest/disease control - **good results**.



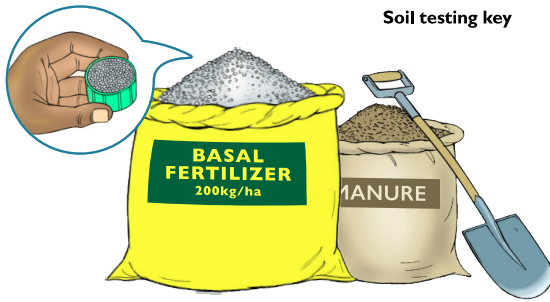
6. Planting depth and spacings

- Sorghum is small seeded, requires well-prepared seedbed.
- Inter row: 60 to 70 cm (with moderate rainfall) and 90 cm for drier areas.
- In-row: 15 to 20 cm (with moderate rainfall) and 30 cm for drier areas.



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Soil testing key

7. Fertilizer application

- 1-2 handfuls of manure over 30 cm along each planting line/furrow.
- 2 heaped drink bottle caps (equivalent of 200 kg/ha) of basal fertilizer over 30 cm along the planting line/furrow.
- Top dressing of 100-200 kg per/ha of Nitrogen fertilizer applied at 4 and 6 weeks for moist soil.



9. Pest and disease control

- Integrated pest management (IPM) includes mixing chemical and biological controls, plant resistance and cultural control to limit damage.
- Leading pests include stalkborer and common birds.
- Disease threats: Leaf blight, head smut, charcoal rot, ergot, and covered kernel smut.



8. Weed control

- 1st weeding at 2 weeks of planting; 2nd weeding 5–6 weeks after planting.
- Herbicide applied pre-planting, pre or post weed emergence.
- Herbicide based on weed species and availability - common herbicides: 1) Dual Magnum 2) Basagran.



10. Harvesting and Post harvesting management

- Harvest when the spot where the grain attaches to the inflorescence turns from green to black or the leaves are yellowing and drying.
- Dry via the sun on black plastic/concrete floors or mechanical driers.
- Thresh using grain shellers/threshers or manually.
- Store in clean, hermetic bags or metal silos to prevent mould & weevils/grain borer. Never mix new and old grain.



11. Sorghum returns

- Return on investment (ROI) ranges from \$1.80 to 2.20 per dollar invested.
- White sorghum can provide food and income security in drought prone areas.
- Red and white sorghum producer prices average \$0.25 per kilogram in formal and informal markets.
- Breweries like Delta and Ingwebu buy red sorghum under contract from producer groups.
- The Grain Marketing Board is the main market for white and brown sorghum.



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