Agronomic practices to enhance seed production

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Land preparation

The success of a vibrant seed industry is depended on quality seedbed preparation

Site selection

- Sites for seed production should
- Have suitable agro climate (also for contract farmers)
- Have irrigation facilities
- Source of water
- Large fields for isolation distances
- Fields to accommodate rouging

Site selection cont.

- Soil suitability
- Fertility
- Infiltration
- Workability
- Topography
- Accessibility

Primary tillage

- Turns soil slices and kill weeds and pathogens
- Improves soil aeration
- Improves soil breakdown and weathering
- Removes unwanted plant roots by plough
- Improves drainage

Secondary tillage

- Breaks soil clods further
- Achieves a finer tilth depending on seed size

Primary tillage cont.

Once a suitable seedbed is achieved combine several farm operations to make savings by using resources efficiently. Planting seed, fertilizer application and covering the seed can be done at once

- Conservation tillage
- Minimum
- No till

Planting

- Using planters
- Jembe (hoe)
- Oxen plough

Spacing depending on seed specifications

- Row spacing and seed to seed spacing
- Planting depth
- 4cm depth for larger grain eg maize
- 1-2cm for smaller grain eg sorghum

Fertilizer rates

- Soil fertility test to establish nutrient requirement (macro & micro)
- Efficient use of fertilizers reduces the cost of production and increases profits
- Crop rotations may increase fixing nitrogen, control pests and diseases
- Improve residue management for soil fertility and moisture conservation

Fert.rates cont.

- Applied at once or in split applications
- Fertilizers used at planting and during plant growth
- Consider losses through leaching and volatilization and manage losses as fertilizers are expensive
- Row spacing and inter-row spacing help in getting plant population

Fert. cont

- Apply fertilizer per plant and get total quantity needed/ha
- Buy only required quantities to boost growth and yield of crop
- Mix it with soil or place it away from crop
- Broadcast, top dress or foliar spray

Seeding rate

- Seeding rate varies from crop to crop
- Row to row spacing and plant to plant spacing
- Plant population/ha and weight of the seed
- Quantity of seed for entire farm estimated in advance for planning purposes
- Seeding rate (kg/HA) given = desired plant population/M2*1000kwt/seedling survival rate(in decimals)/100

Seeding rate cont.

- wastage
- Adjust spacing by planter to give accurate seed placement depending on crop
- Efficiency of seed placement will reduce

water management

- Agronomic practices should aim at conserving water at farm level
- Include soil and water conservation measures – grass strips, crop residues, strip cropping, crop rotations, terracing
- Removal or retention of water – natural water ways or artificial water ways for safe removal of excess water from the farm – cutoff drains to divert excess water

Rainfed or irrigated agriculture

- Rainfed agriculture can constrain seed production through moisture stress
- Provide provision for supplemental irrigation
- Permanent irrigation system and produce more seed at extra cost
- Necessary to establish a uniform stand
- Water critical during flowering for good set
- Water scheduling according to the needs of the crop