Sustainable Sugarcane Farming Methods

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My Farm

- Family farm – 350 ha cane
- Situated North Empangeni, 100m elevation from sea level – Coastal
- Rainfed – 1050mm Annual Average
- Slopes and Valley Bottoms
- Parent Material: Mostly Tugela Schist and Red Recent Sands
- Try to maximise 14/15 month optimal harvesting cycle for the coast by carrying 12% of crop to 18 months

The Goal

- To reduce the loss of organic matter and soil carbon

Major Strategies

- Green Harvesting
- Zero or Minimum Tillage

Green Harvesting

- ❑Avoid burning
- ❑Exceptions:
  - Replants for residue management
  - Valley bottoms especially in wet seasons
  - Some strategic fields to create firebreaks

Green Harvesting

- Challenges:

- Poorer cutter productivity compared to burnt cane
- Poorer payloads – both infield and to the mill
- Residue management costs

The Ideal: Pre-Trashing

The Reality

Post Harvest Residue Management

- An added cost layer
- The conventional method:

Post Harvest Residue Management

- An unconventional method:

Post Harvest Residue Management

- A modern method:

Minimum Tillage

- Challenges:
  - Liming

Minimum Tillage

- The Ideal:

- Don’t burn
- Inject lime
- Kill the cane regrowth at 100% mortality
- Plant directly into the inter-row with zero soil disturbance and with fertilizer
- Perfect germination

Minimum Tillage

- The Reality:

- Burn in order to replant (to allow implement access)
- Burn tops once dried
- Chemically kill regrowth at required height
- Break compacted or heavy soils with a deep ripper
- Plant and close and hope for good germination
- Manage old stool regrowth
- Valley bottoms??

Minimum Tillage

Minimum Tillage

- No Till Planter

Minimum Tillage

- Challenges:

- Glyphosate?
- Old stool regrowth
- Poor germination – Gapping costs
- Timing – Planting to Harvest (Seedcane)

Conclusion

- Why do it?

- Cost Analysis
- Need auxiliary players to help overcome the challenges

eg Agric-engineers etc

- To me the value of our strategy is in retaining, as close as possible, the state of our farms' soil to pristine and optimal agricultural conditions for the next generation.