
The Problem

- Farmers at Fulwe village have been experiencing variable maize yields (low to high) for many years.
- Reasons for the variable yields were not exactly known to both farmers and agricultural extension officers.
- Some of the cited reasons included inadequate crop husbandry but most cited is improper planting dates.
- Therefore, the issue was to find means to identify appropriate planting dates. This necessitated the use of the PARCHED–THIRST (PT) software.
- Before embarking on the analysis, the following questions were asked: Is the issue really appropriate planting dates? Will the software be able to identify other problems besides planting dates?

Results

Figure 3: Yield response to planting date. The blue line is the observed yield, the window in the middle.

Figure 4: Dry matter accumulation of 2000 "rainfed" season. Almost all years showed the same pattern. Calcite planting dates have little effect on the final yield.

Figure 5: Drought accumulation. These showed that some years had highly higher yield than others.

Study Approach

- Collect weather data (1999 – 2003) from Kingeleza weather station (a nearby station to the village) and soil profile data.
- Model the previous maize (the main farming system) in PT software (Figure 2).
- Simulation of the rainfall system by varying planting dates between January 1 and 17 March.
- Investigation of dry matter accumulation and grain weight accumulation.

Discussions and Conclusions

- Figure 3, 4, and 5 show that the difference in yield that farmers' experience is likely caused by short dry spells that coincide with some critical stages in maize growth and grain filling.
- Farmers should target water and store it so that they can use it for supplementary irrigation during tasselling and grain filling stages. Proper water management during these two stages is critical to realizing good yield.
- PT software has therefore been able to show that the reason for low yield is likely due to dry spells during tasselling and grain filling stages and not due to wrong planting date.