Update on SASHA Animal Feed Research

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Presented to:

Third Sweetpotato Support Platform Meeting For East And Central Africa

Imperial Royale Hotel, Kampala, Uganda, 25-26 May 2011

Animal Feed Research objectives…

- Identify the appropriate adapted dual purpose and forage varieties for specific livestock production systems and specific agro ecologies

- Determine the most appropriate combination of sweetpotato vines/roots with other available feedstuffs that maximize livestock productivity and household incomes under the environmental and economic constraints in the project area

- Model and test novel feed and production and feeding strategies based on optimizing sweet potato legumes-other feed resources-pig and dairy interactions

Structure based on activities

1. Screening sweet potato germplasm for biomass production under different cropping regimes and their potential as dual-purpose varieties

2. Adapting simple, low-cost, silage-making techniques using sweet potato roots and vines, other feed resources and legumes.

3. Modeling and testing novel feed production and feeding strategies based on optimizing sweet potato-legumes-other feed resources-pig and dairy interactions.

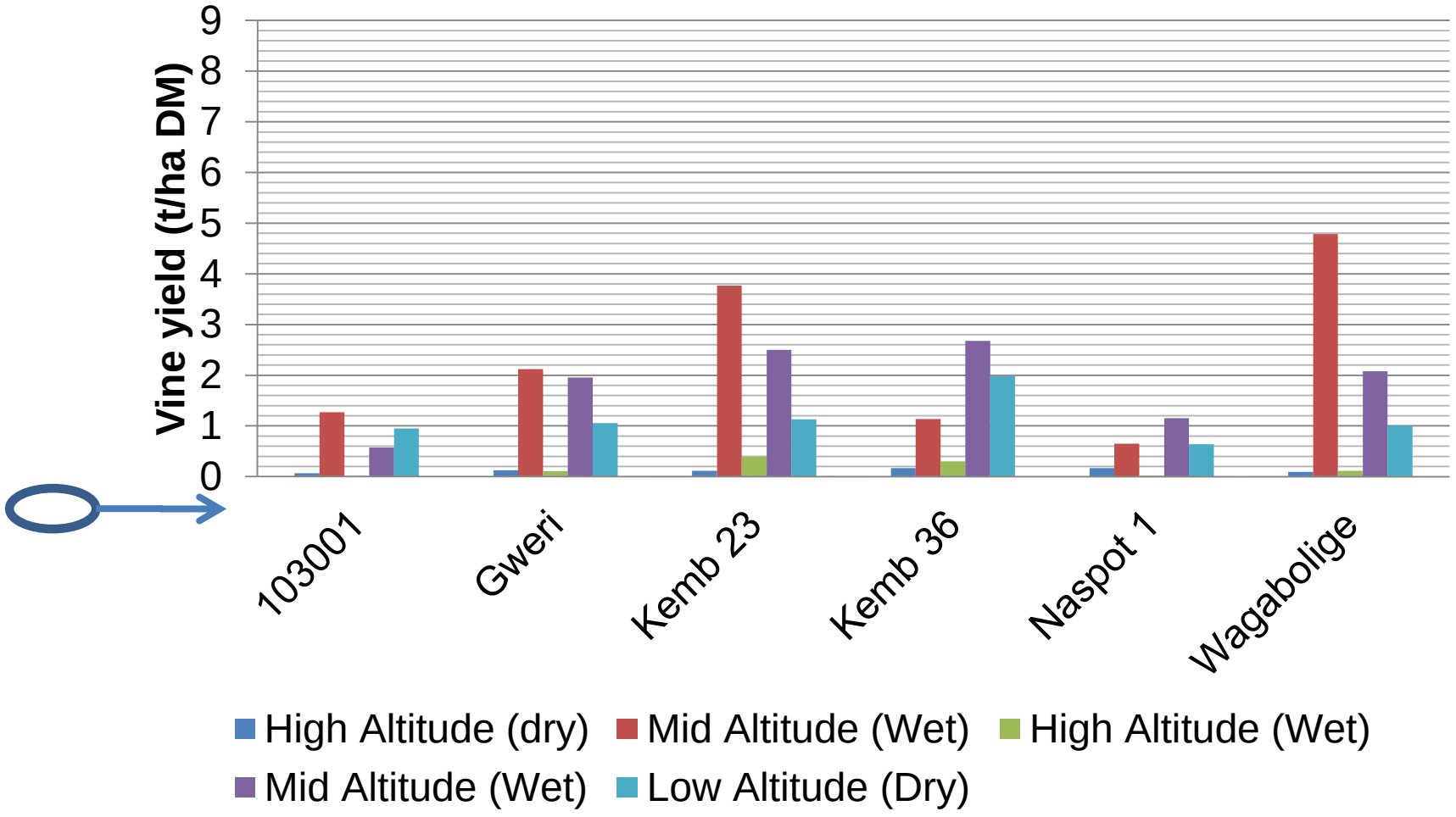
Activity 1: Screening SP varieties for biomass production under different cropping regimes & their potential as dual-purpose varieties

Progress report… Kenya

- MSc. student defended proposal and accepted by Egerton University
- We planted trials on seven farms in South (3) and North (2) Rift and Central (3) provinces
- Data collection from trials was completed:
  - Biomass (vine and root) yields
  - Nutritional composition
  - Farmer preference
  - Climate data
- Feed samples were analyzed using NIRS. In-vitro digestibility (Tilly and Terry) at Egerton University
- Two abstracts submitted to CIALCA and Tropentag conferences in Rwanda and Germany respectively
- Soil samples will be analyzed for NPK at KARI NARL, Kabete.
- Progress on data analysis

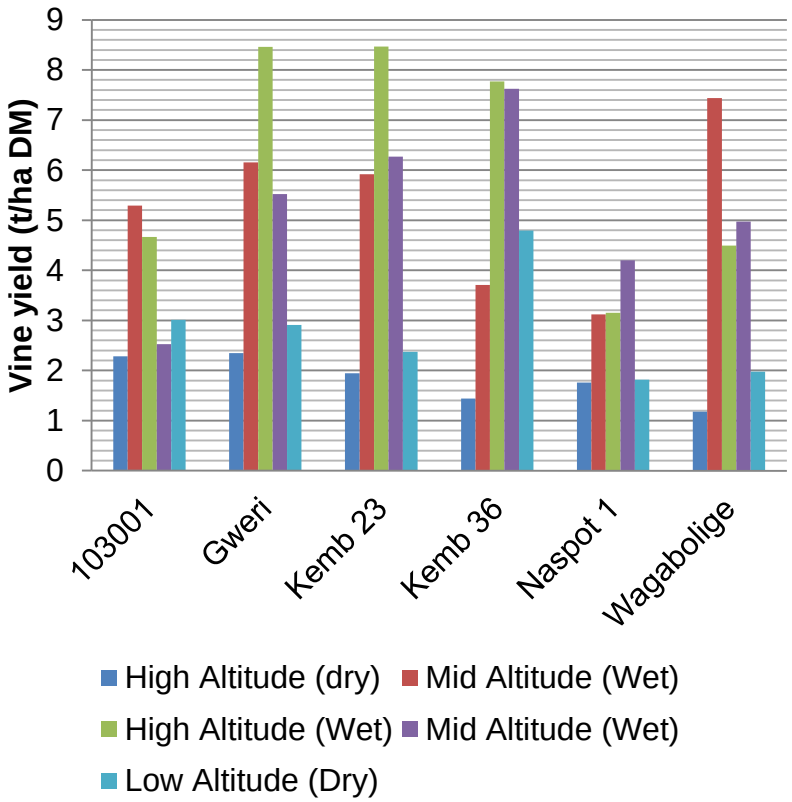
Mean vine yields at 75 day of harvest in Kenya

Cutting vines at 75 days limited yields in most sites especially dry zones

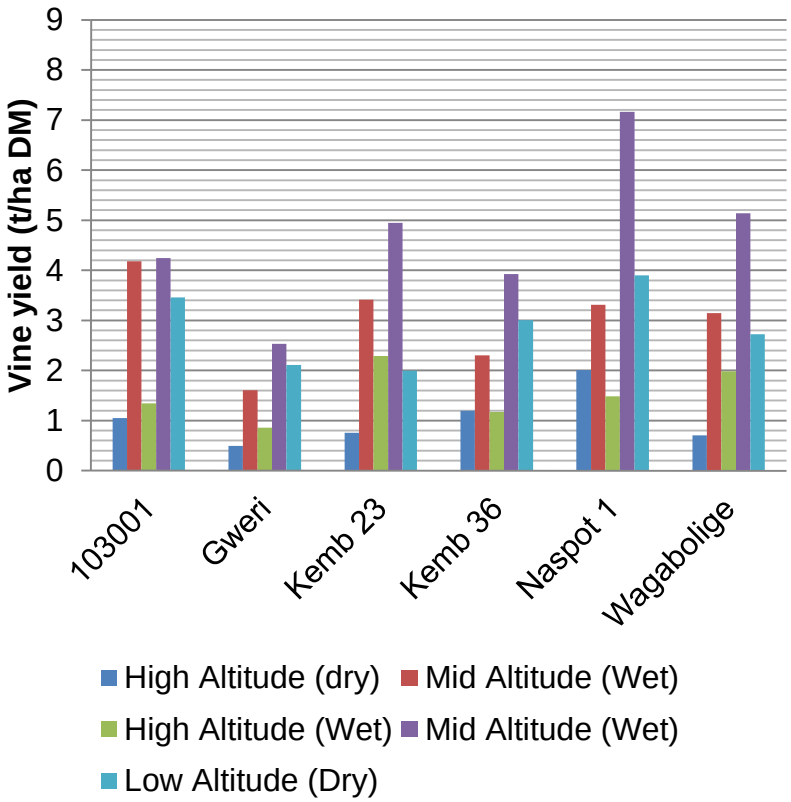


Mean vine yields at harvest in Kenya

Ratooned 150 days

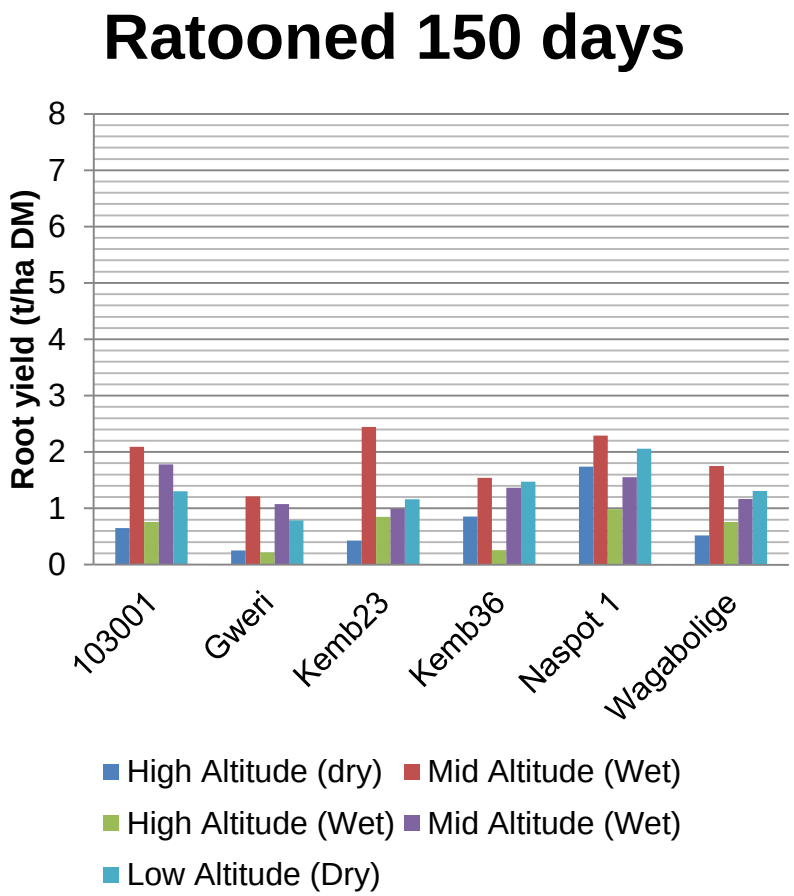


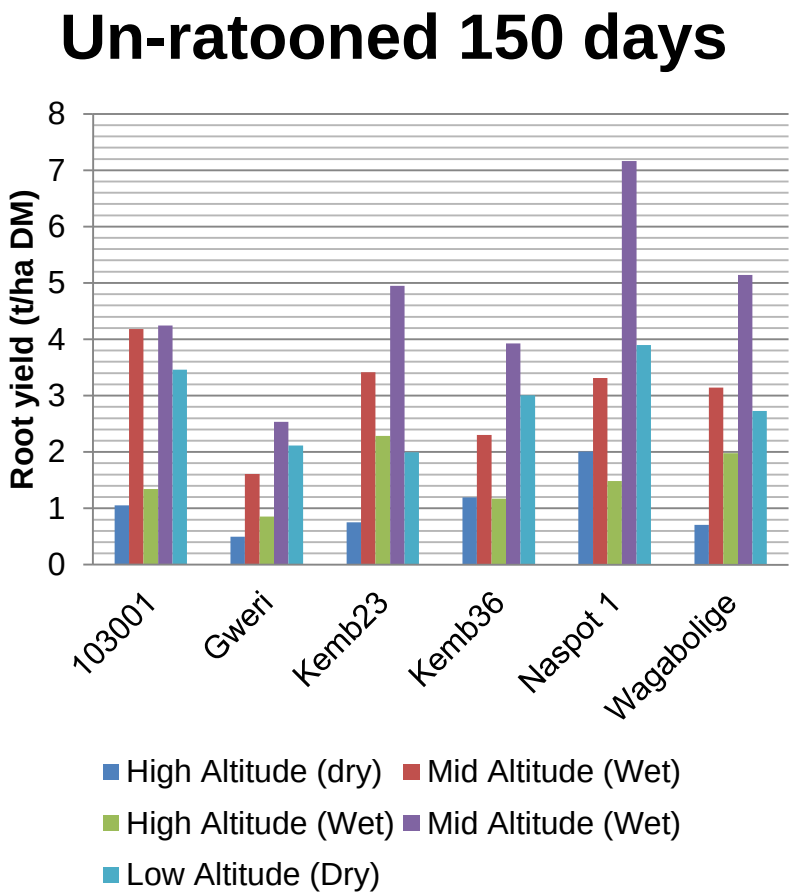
Un-ratooned 150 days



- Harvesting twice gave higher DM yield relative to the control, yields were higher in wet zones
- The effect of AEZ varied with time of harvest. There was less interaction between the cultivars and the AEZ.
- Gweri, Kemb 23 and Kemb 36 showed some level of interaction with some AEZ.

Mean root yields at harvest in Kenya





- Harvesting twice reduced yield relative to the control.
- The effect of AEZ varied with time of harvest. There was less interaction between the cultivars and the AEZ.
- Napsot 1, Wagabolige and Kemb 23 showed some level of interaction with some AEZ.

Activity 1: Screening SP varieties for biomass production under different cropping regimes & their potential as dual-purpose varieties

Progress report… Rwanda

- Bulking of sweetpotato varieties for trial completed
- 10 farms were selected (13th – 18th March 2011) and planted in Nyagatare, Gatsibo and Rwamagana (20th – 25th March 2011)
- Varieties planted: Kakamega, Naspot1, Cacaerpedo, Mugande, Kwetsikumwe, 2002/155; 2002/154; 2000/040
- Soil samples were collected from all the 10 farms and are awaiting analysis at ISAR Rubona
- 75 days harvesting expected to done 2nd week June
- The MSC. student is currently taking course work at Nairobi University.
- Activities are supervised by Dr. Cyprian Ebong, ISAR and EADD teams.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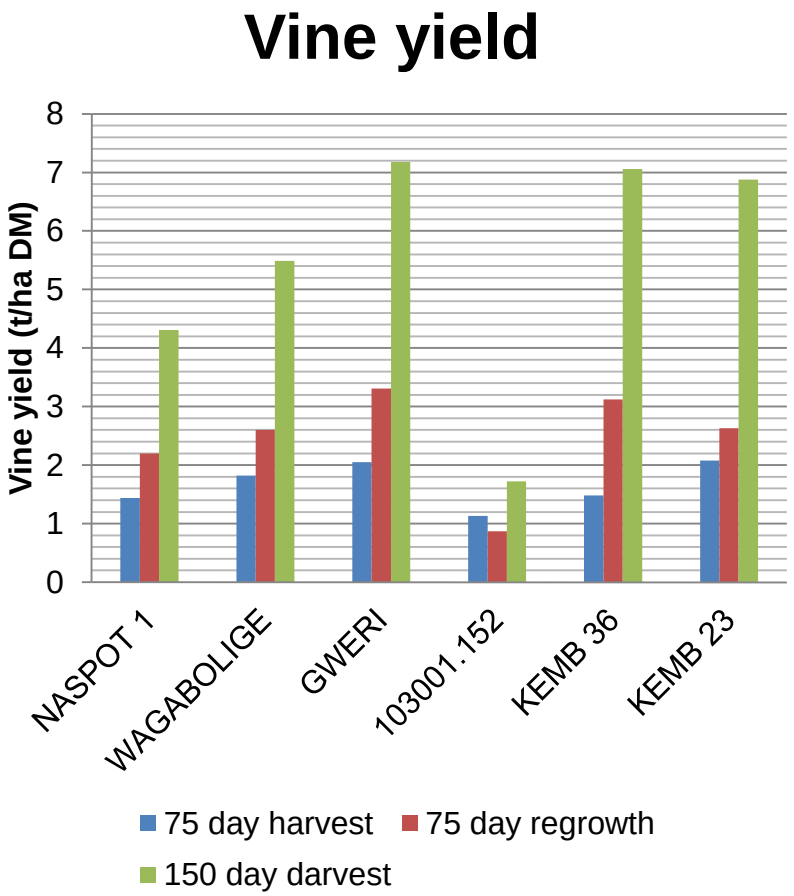
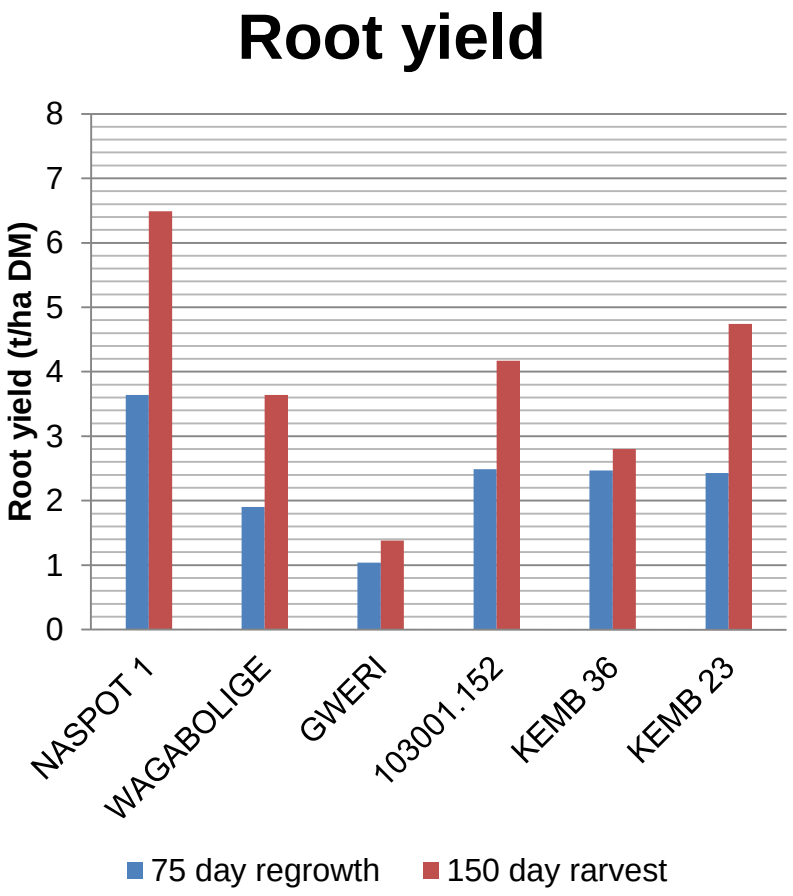
Activity2: Adapting simple, low-cost, silage-making techniques using sweet potato roots and vines, other feed resources and legumes.

Progress

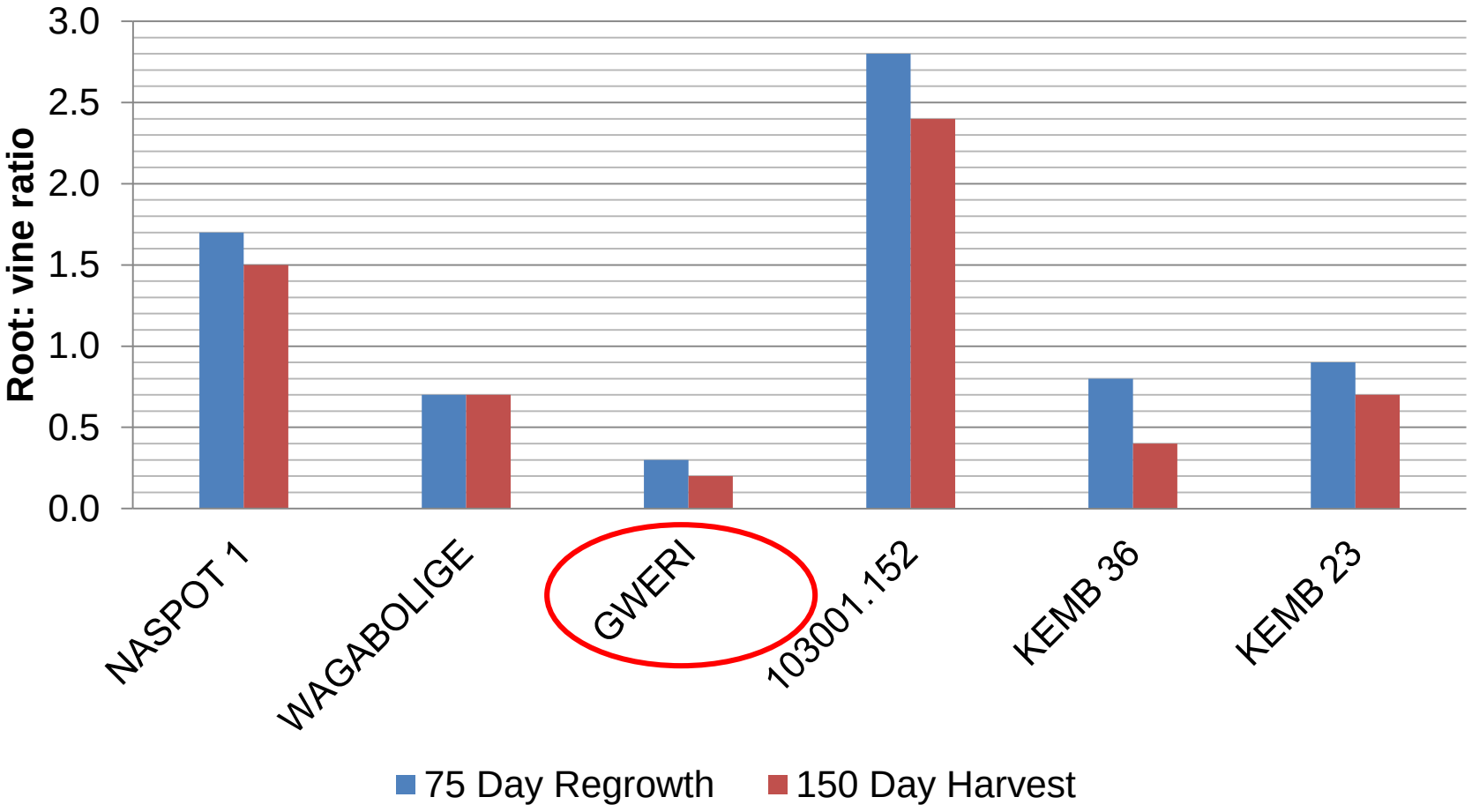
- Feed samples analysis completed using NIRS. In-vitro analysis of gas tests to be done at Egerton university.
- Statistical analysis of the vine and roots DM yield data complete
- Draft thesis available

Mean vine and root yields at harvest on-station in Kenya

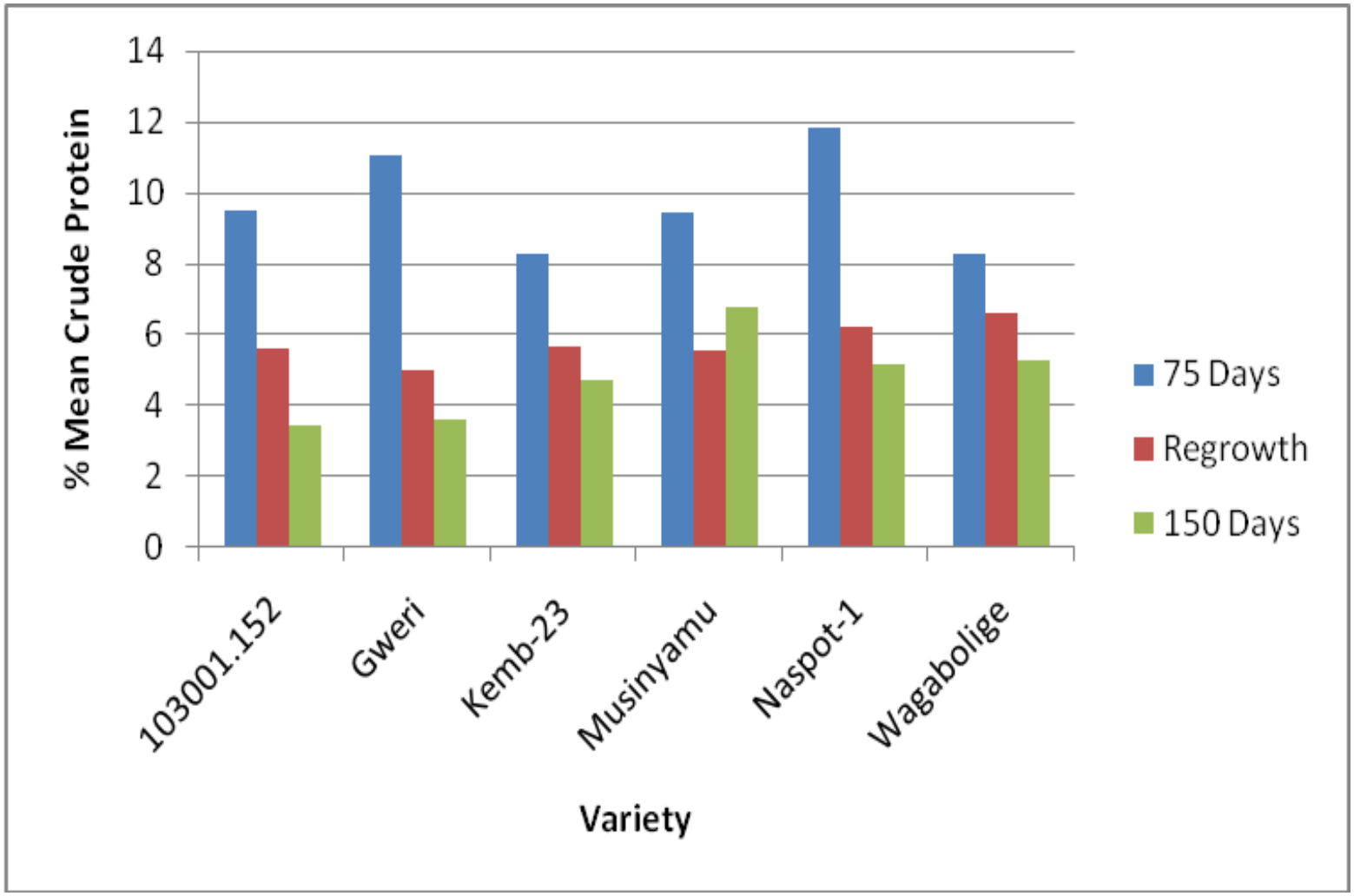




Root : vine ratios of varieties in Kenya



Crude protein (%) content of varieties



Activity 3: Modeling and testing novel feed production and feeding strategies based on optimizing sweet potato-legumes-other feed resources-pig and dairy interactions.

- Student undertaking course work at Nairobi University
- Sweetpotato vines for feeding trial being bulked on a few farmers fields as well as KARI Thika (due to shortage of land).
- Baseline to document current sweetpotato and pig management practices.
  - Questionnaire development completed

Sweetpotato bulking plots – Thika, Kenya

Other activities

- February 2011 - Held a symposium for the feeds team in Kenya
- Partners annual meeting due in June 2011

Up coming activities

1. A feeding the trial with dairy goats to determine the effect of silage on milk production.

2. Perfecting silage making for quality
   - Improvements to the tube silage making method

3. Promoting use of sweetpotato in making silage in combination with other locally available feed resources

Up coming activities

4

- Introduce the use of sweetpotato dual purpose varieties in Uganda through farmer demonstrations plots

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- Raising the profile of sweetpoatato as animal feed…

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Learning….

Cutting regimes;

- The 75 days cutting stage mimicked trials used in Asia however it appears to suppress vines and root yields in Kenya .
- Learning in Kenya will inform the cutting regime trial in Rwanda – adjust cutting regimes to mimic farmer practices

Dissemination of dual purpose sweetpotato varieties;

- anecdotal evidence of farmers adopting varieties…we are planning a quick rapid appraisal

Thank you….

Mwebale nnyo!

Murakoze!

Asante sana!