

EFFECTS OF NITROGEN FERTILIZER LEVELS ON TUBER YIELDS OF APICAL ROOTED CUTTINGS SEED POTATO VARIETIES

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Introduction

There are low potato (*Solanum tuberosum* L.) yields of (8-13 t/ha) amongst farmers in Nakuru against a potential of 30 t/ha. The low yields are attributed to use of poor-quality seed potato and inadequate nutrient supply, in particular nitrogen (N) fertilizer. Most small-scale farmers use seed potato planting materials that are of poor quality hence low yielding, therefore a new technology of using apical rooted cuttings (ApRC) could significantly improve access to quality seed for small scale farmers in Kenya increasing their productivity and income.

Methodology

Randomized complete block design in 3 reps.

Propagules=apical rooted cuttings.

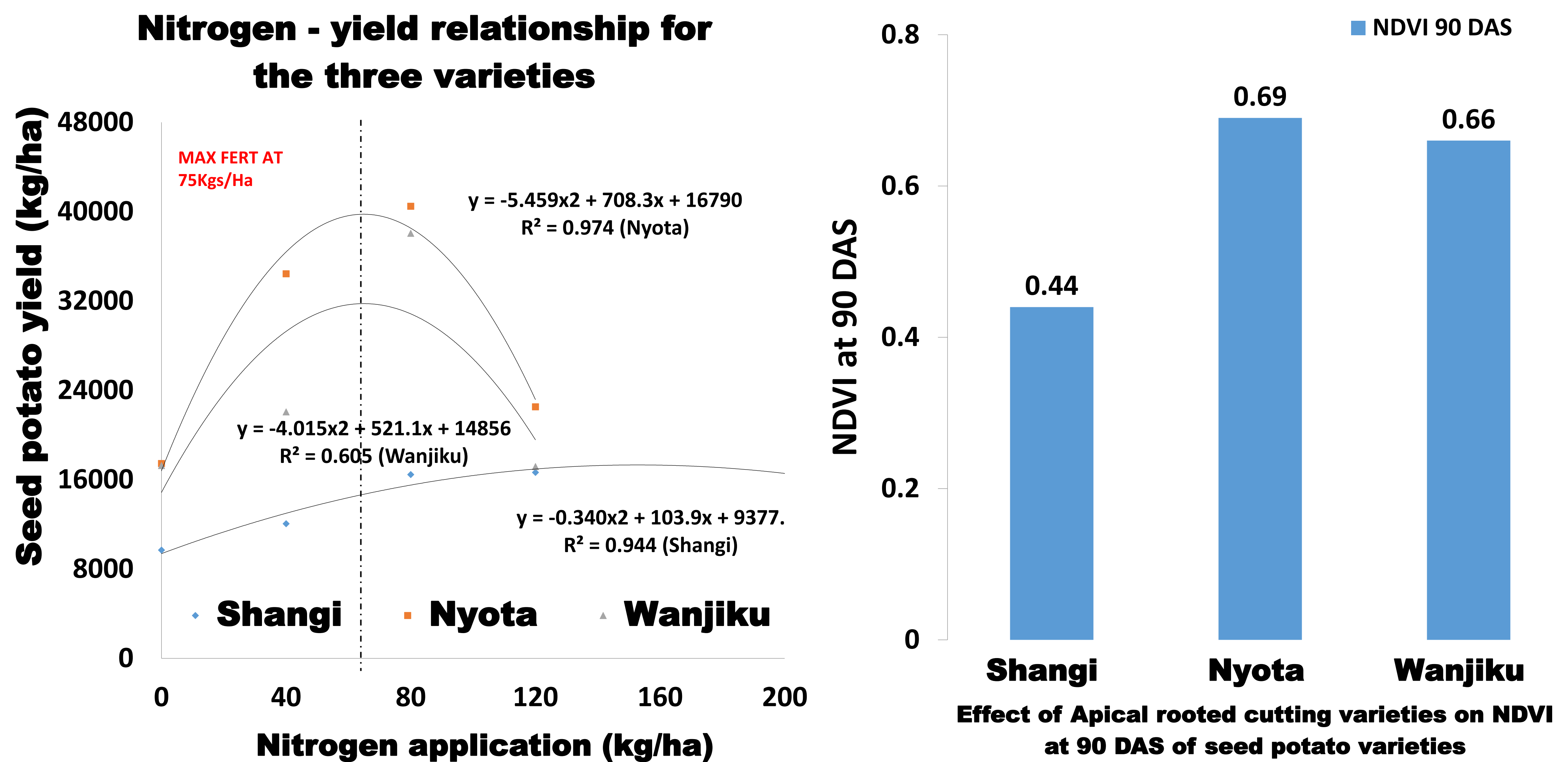
Varieties= Nyota, Shangi & Wanjiku

Treatments= Nitrogen level(0kg/ha,40kg/ha,80kg/ha, 120kg/ha)

Site= Egerton Field 7.

Data= (number of stems, Height, number of tubers, tuber yields, NDVI)

Results and Implications



The Nitrogen rate at 80Kg/Ha gave the highest means value in number and weight of tubers for the three varieties. Yields of Nyota variety was the highest with about 28t/ha double value of that of Shangi which was of about 13t/ha. This is because of its high nitrogen use efficiency as shown by the above results it had a high Normalized Difference Vegetation Index (NDVI) of 0.69, which translate to good canopy formation and eventually better tuber formation (high yield and good growth) better than Wanjiku and far better than Shangi variety.

Reference:

David S., Evelyn R.F., Raymundo G., Merideth B., Awais M.K (2016). Yield and physiological response of potatoes indicate different strategies to cope with drought stress and nitrogen fertilization.

Acknowledgement

BSc. Agriculture project by: Joy Mukami, Edna Yano, Brian Rono, George Mbugua, William Mungai.
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On-Farm Farmer Led Potato Yield Performance Evaluation

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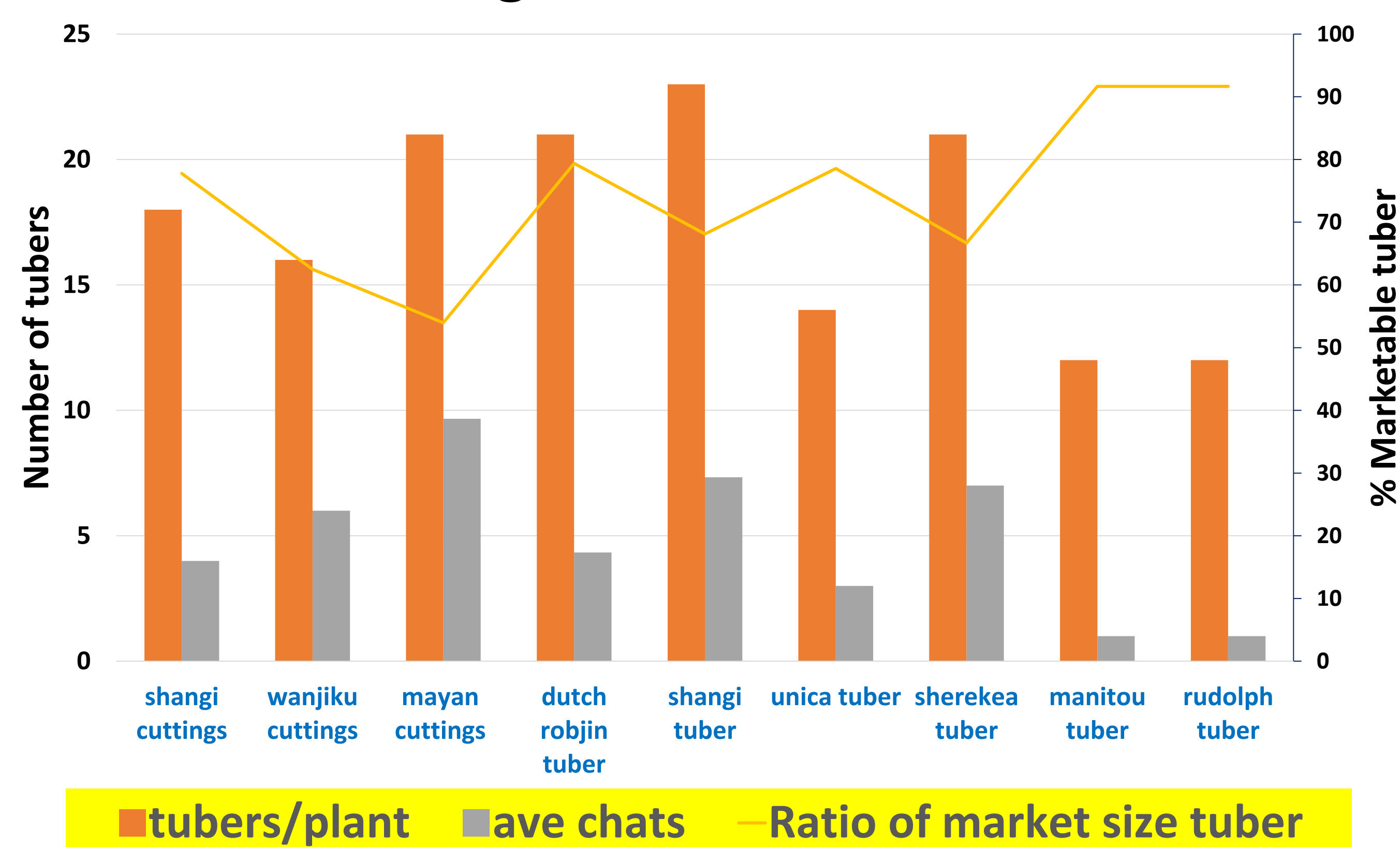
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Approach

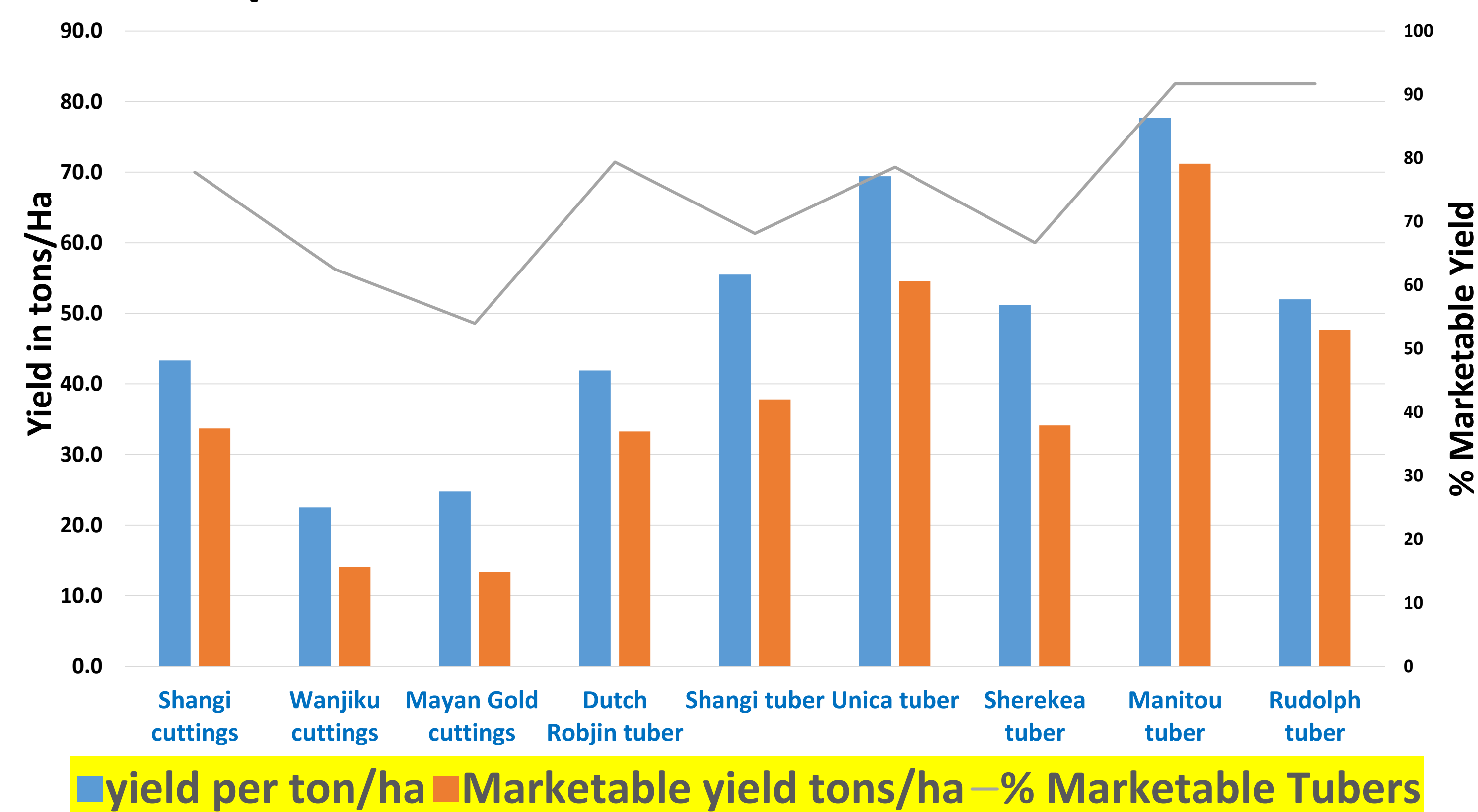
Farmer led demos were established at Egerton University to evaluate yield of 8 varieties of potato. This was during the period of May to Aug 2019. Three 3 rows* 9m of each of the 8 varieties (Shangi, Wanjiku, Mayan Gold, Sherekea, Dutch Robjin, Unica, Manitou and Rudolph) were planted per plot. Wanjiku and Mayan gold were planted as apical cuttings only while shangi was planted as apical cuttings and tubers.

Results and Implications

Percentage of Marketable Tubers



Proportion of Marketable Yield in Tonnes/Ha



Shangi had the highest number of tubers per plant (23) followed by Sherekea and Mayan Gold (21). Manitou and Rudolph had the highest proportion of marketable yield (size of tubers>28mm).

Highest yield in Manitou 71.2 tons/ha (88% Myield) followed by Unica at 54.5 tons/ha (80% Myield). Percent marketable yield for shangi was 70% compared to Manitou at 88%.

1. Shanghi had the highest number of tubers and stems per plant (23 tubers and 10 stems) tubers followed by Sherekea= 21. Mayan Gold has highest among cuttings= 21.
2. Only Manitou, Unica and Rudolph had tubers bigger than 100mm in length.
3. Unica had the heaviest tubers of ware size giving an average of 1.6 kg per plant. Followed by Manitou and Rudolph at 1.4 and 0.8 kg/plant respectively.
4. Shanghi had the highest number of chatts. Dutch Robjin had the highest number of size 2 tubers.
5. Manitou had the highest yield = 7.8kg/m², followed by Unica at 6.9 kg/m². Shanghi had the highest yield among cuttings= 4.2 kg/m².



Acknowledgement

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On-Farm Farmer Led Potato Yield Performance Evaluation

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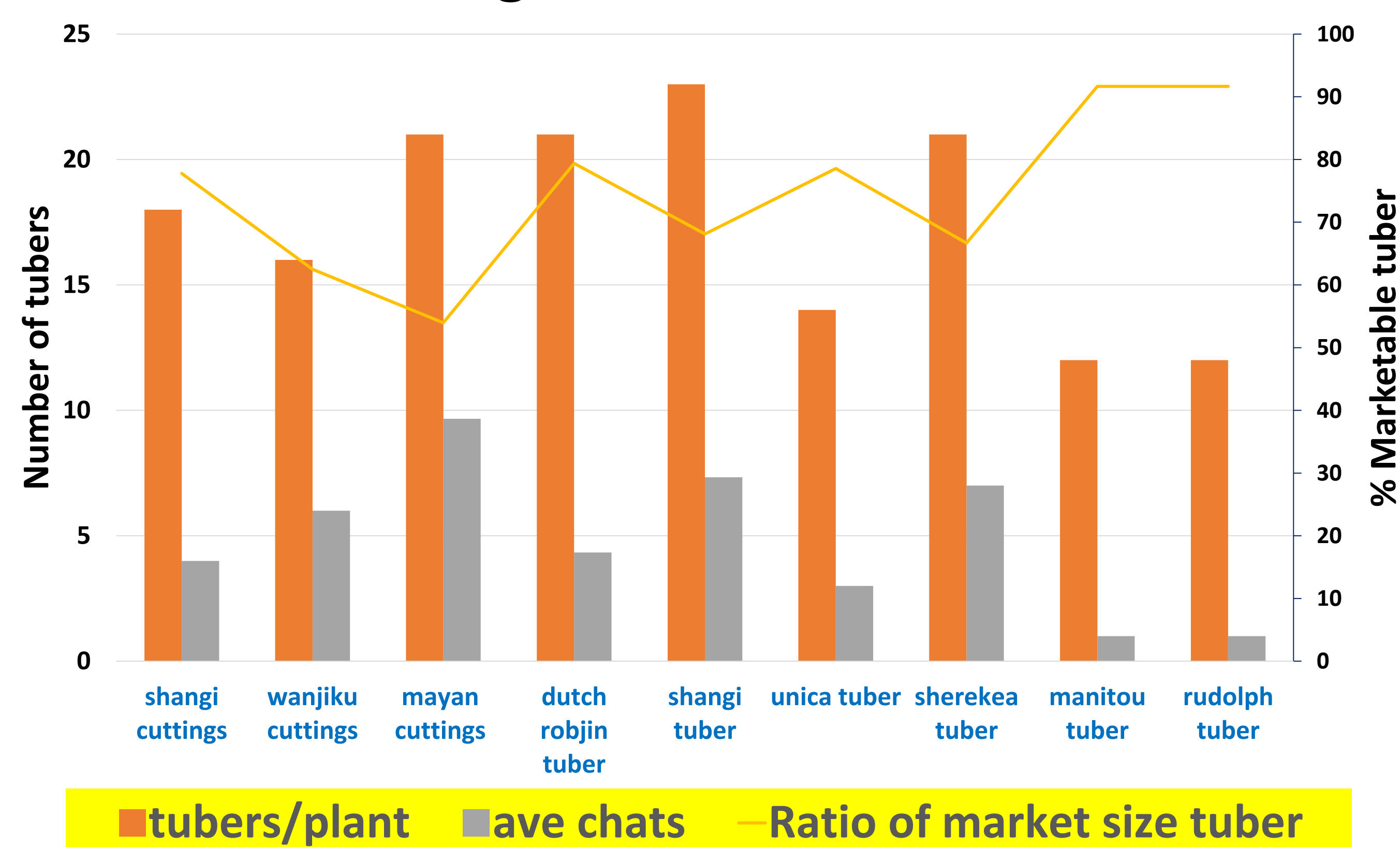
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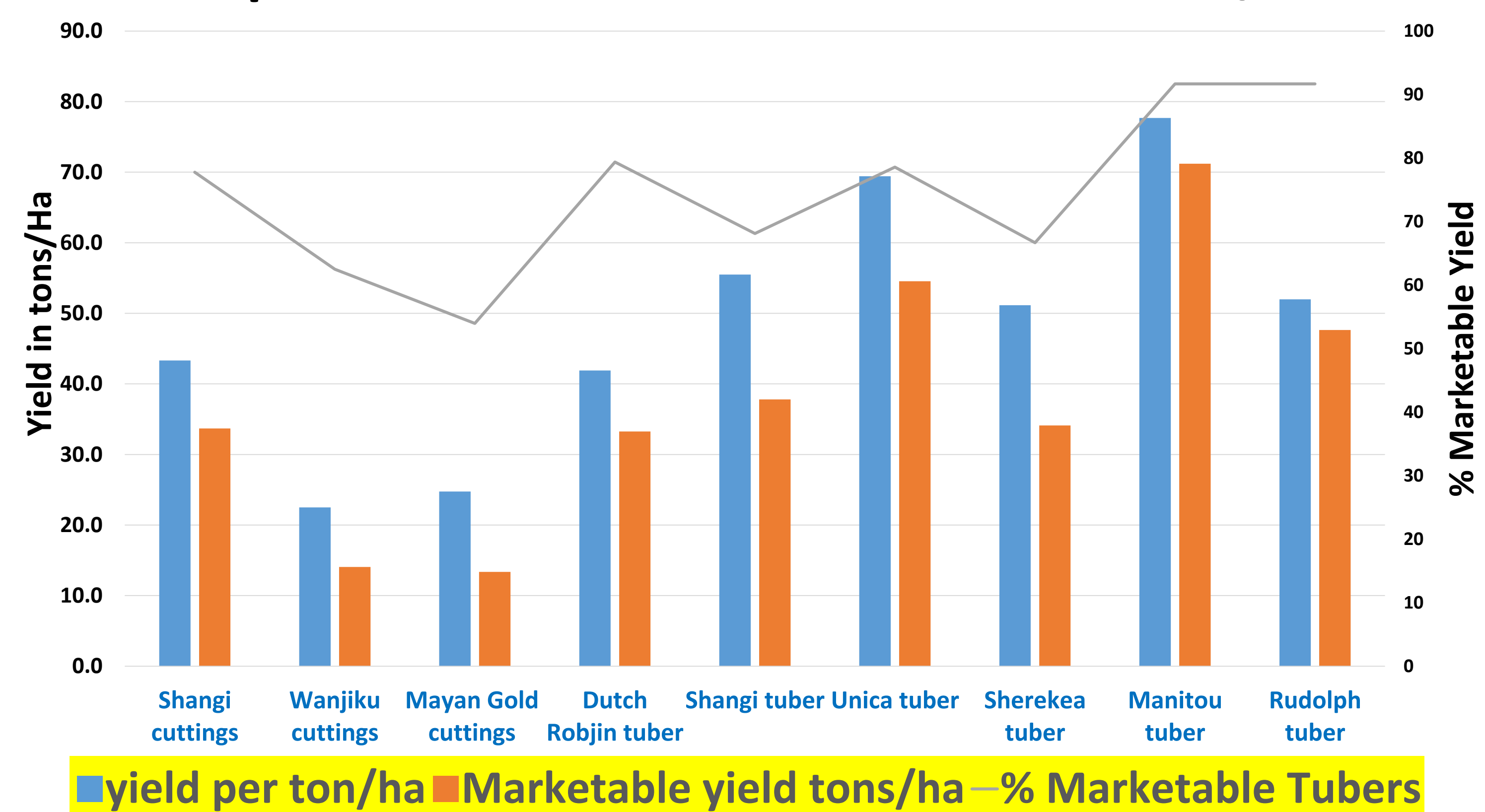
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Gender Participation in Seed Potato CARP + Activities

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INTRODUCTION

In Africa women provide largest share of agricultural labor with least economic benefits in most of the production activities of Irish potato. Women role include: varietal selection, grading/sorting and planting yet their role not economically visible.

Men role include ; transportation of harvested produce, harrowing and purchase of fertilizers. Men make Key decisions on production and purchasing of inputs while women provide labor at crucial stages of production yet still not recognized. This implies that if gender issues are not taken into account, interventions aiming at bringing equality may not be achieved in potato production.



Land preparation

Packaging of harvested produce



Women actively engaged in fertilizer application, seed placement while men make furrows

CONCLUSION

Men and women participate in various roles in potato production but it's obvious that women are left out in the recognition in potato production which bring about inequality between men and women. General conclusion is that most of farm activities were undertaken by male farmers compared to their female counter parts. It is therefore necessary that gender empowerment is promoted to incorporate both men and women in agricultural activities particularly potato production

OBJECTIVE

1.To analyze seed potato CARP+ activities along gender participation

Approach

Seed potato carp + activity was used to analyze by disaggregating along gender roles

Gender role in potato Production	Men %	Women %	Men & Women
Land preparation	44	16.6	19.4
Harrowing for potato production	29.3	11.6	12.8
Furrowing for potato production	31.4	13.7	22.3
Transportation of seed	41.1	18.3	5.1
Purchasing of fertilizer	30.9	28.6	22.9
Provision of labor for planting	19.4	21.7	49.7
Provision of labour for harvesting	12.1	24.7	45.7
Packaging of harvested produce	16	9.7	13.1
Transportation of harvested produce	25.1	8	6.3

Source Baseline Survey 2017



Women involved in sorting and grading of seed potato

ACKNOWLEDGEMENT

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