

Project report for SSCR-Potatoes

Project title:

Accelerating the Adoption of Scottish Potato cultivars in Kenya

Applicant(s):

Lesley Torrance and Jamie Smith

Background to the project

The production of certified seed in Kenya is challenging due to major pest and disease problems, lack of capacity and the lack of specialist agronomic knowledge among many Kenyan potato growers. Currently, certified seed production meets less than 4% of the demand and stakeholders at the meeting were excited about the possibility of acquiring clean seed of Scottish origin. There are approx. 800,000 farmers in Kenya of whom approx. 500,000 currently grow potatoes, producing 2-3 million MT per year and annual production is worth approx. 50 billion Kenyan shillings (ca £400 million). Demand for potato (table, crisps, chips) is forecast to increase at an annual average rate of 5.2% for the next 10 years. The bilateral agreement opens the door to major sub Saharan African markets for fresh and processed potato as Kenya being SSA's most stable nation is ideally positioned to export potato to many adjacent countries in the East African Community (Uganda, Rwanda, Tanzania, Burundi) and beyond.

Aims and objectives

Trialling of Scottish cultivars by conducting NPT at three sites and over two growing seasons with yields, disease resistance and other properties monitored.

Established cultivars and James Hutton Limited bred varieties will be compared with currently grown Kenyan 'control' varieties.

Research results

Scottish grown certified seed, mostly EU 'Super Elite' grade was sent to Kenya in 2017 for fast track intensive trials at three locations over two seasons, this was in collaboration with SASA and the AHDB Potato Council. The cultivars were Cara, Reiver, Sorrento, Hermes, Atlantic, Mayan Rose, Lady Balfour, Gemson, Vales Sovereign and Charlotte they were compared with Kenyan check cultivars Dutch Robyn, Shangi and Tigoni. The trials were managed for us in Kenya by the Syngenta Foundation who communicated with KEPHIS and helped us to ensure the material was received, tested by KEPHIS and planted in the necessary locations (Fig 1).



Fig 1. Images of Scottish seed being grown in Kenya for NPT

The combined data over two seasons was analysed by KEPHIS and we were informed that three of the submitted cultivars were recommended for release (Cara, Lady Balfour and Gemson). However, we noted from our own examination of the trial data that cultivars Sorrento and Reiver performed well but did not pass. As such we appealed the decision and after discussion with KEPHIS Sorrento and Reiver were also 'recommended' for Kenyan national listing. Although there is still a formal listing process to be undertaken this result permits these varieties to be sold in Kenya, and permits us to approach regional growers to test the market and systems for importation of Scottish grown seed. In addition, a previous cultivar Mayan Gold had passed NPT under a different grant and is on the Kenyan National List already. The next step was to get the private sector's interest in these varieties to get them into market.

In order generate interest in Scottish origin seed and to find large scale private sector producers both Jamie Smith and Lesley Torrance travelled to Kenya in 25.8 – 5.9 2018 and visited multiple commercial seed growers across Kenya who are currently involved in regional seed multiplication. They were accompanied by Samuel Gikonya of Syngenta Foundation who made the travel arrangements and introductions. We travelled to visit Kisima Farm (Meru), Charvi Investment Ltd (Nakuru), Agrico East Africa (Nakuru), and Professor Anthony Kibe of Kenya's Edmonton University

Kisima Farm offered excellent opportunity however unfortunately for Scotland have an exclusive marketing arrangement with the Dutch breeding house HZPC to sell their potato cultivars. However, they were interested to grow and market any 'free' cultivars from tissue culture material. This would include Scottish Cara and Mayan Gold. Charvi Farm had some difficulties with relations with Kephis, particularly around importation of poor-quality Dutch seed. However, we were not impressed by this producer's hygiene and facilities and so may have avoided recommending them to Scottish exporters regardless. The owner also intimated that they may pull out of potatoes altogether. Lastly, and in sharp contrast, our visit to Agrico East Africa was encouraging and we were overall impressed by the seed production operation, storage and grading facilities, agronomy skill and ethos of the company.

We gratefully acknowledge Mr George Osure, Regional Director and Samuel Gikonyo, Syngta Foundation East Africa for their considerable help and advice to date.

Outcomes

Test whether cultivars/varieties will stand up to the very high pest and disease pressures and be acceptable to consumer tastes and processing techniques.

Provide further intelligence on the environmental and varietal performance and allow us to gauge the market response to Kenyan grown Scottish cultivars.

Having explained the objectives of both the SSCR funded visit and the wider SSCR project to the owners of Agrico East Africa they were willing to enter into commercial discussions about producing Scottish grown seed. An agreement has been concluded to trial four cultivars namely Gemson, Lady Balfour, Sorrento and Mayan Gold. As of April 2019, moderate volumes of Scottish origin seed have been made ready for shipping by two primary Scottish seed exporters, Grampian Growers Ltd and Greenvale AP and is immediately pending transportation to Kenya for Agrico East Africa's own commercial field trialling. If commercially successful, and upon completion of these trials, the likely subsequent outcome would then be for Agrico East Africa to engage directly with Scottish exporters for significant volumes of Scottish grown seed. Indications of tonnages received of the current Dutch varieties suggest that annual quantities would be around 250 - 400 tonne per variety with a sales value of approximately £600 per tonne including shipping. If these tonnages and values of Scottish seed are realised (after the stage 2 on-farm trials) then this SSCR project would represent a potential value generation of £240,000 per variety for Scotland's seed potato exporters and a significant return on initial SSCR investment and which would otherwise not have been possible.

Next steps

We think there are opportunities to enter more cultivars into NPT in future. In the longer term there are possibilities of regional registration in the East African Community or COMESA. By gaining release in one EAC/COMESA country we are eligible for "fast track" registration in other member states for both schemes. Syngenta are willing to help with this process and have a successful track record with guiding clients through both schemes.

Further funding from SSCR to pursue these objectives would greatly accelerate the impact of our work.