**Analysis of Production and Use of Clean Seed Potato among Smallholder**

**Farmers in Nakuru County, Kenya**

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**Abstract**

*Potato (Solanum tuberosum) productivity is very low in Kenya, at 10MT/ha as compared to 20*

*MT/ha and 40MT/ha obtained in Egypt and Netherlands respectively. This gap is partly due to usage of poor quality seed potato. A survey was carried out in Nakuru in 2017 and one of its objectives was to establish and analyse the production and usage of clean seed potatoes especially among the smallholder potato farmers. Data was collected from 175 respondents using a structured questionnaire in a cross sectional study and analyzed descriptively. Results revealed that only 12 percent of the respondents used certified seed potato, 18.9 percent used clean seed while 65.1 percent used farmer saved seed potatoes. Seed potato production was very low because only 18.9 percent of the respondents grew seed potato. This reduces the yield quantity and quality, which negatively affects incomes and food security of the farmers.*

**Key words:** *Clean seed Potato, Productivity*, *smallholder farmers,*

**Introduction**

Sustainable food and nutritional security in Africa can be achieved through increased production of root and tuber crops, like potato, sweet potato, cassava and yam. These are important food crops for direct human consumption and contribute about 240 million tons of food annually (Nteranya,

2015). Potato is a short cycle crop (3 to 4 months), produce more per unit area of land and thus well suited to the double cropping seasons particularly the rain-fed system.

The potato (*Solanum tuberosum*) is the world’s fourth largest food crop after wheat, rice and maize and in Kenya, it is the second most important food crop after maize (Julius *et al.,* 2016). It is grown by an estimated 800,000 farmers on close to 161,000 hectares with a production of about 1.5 million tons worth about KShs 40 to 50 billion per year (Laibuni *et al.,* 2014). In Kenya, 3.3 million people are employed along the potato value chain (Janssens *et al.,* 2013 & Julius *et al.,*

2016). Consequently, potato contributes to poverty alleviation and household food security. Potato yields can be increased by 2.6 times and incomes increased by 2.3 times through use of high quality seeds as compared to farmer saved seed (Geldermann *et al.,* 2010 & Thomas *et al.,* 2016).

However, production and use of clean seed potato is constrained by several factors like, long distance between the farmers and the sources of the seeds (Julius *et al.,* 2016), limited information, and low seed potato production as only two percent (2%) of the national certified seed potato requirement in Kenya is met (Muthoni , 2013). Use of clean seed potato increases potato yields from smallholder farmers (Kiplagat *et al.,* 2016). Farmers use farm saved and bought seeds from local markets and neighbors, which is often of poor quality due to limited access to clean seed potato. These farm saved seeds are often of poor quality,recycled, degenerated and infected with pests and diseases, which reduce their yielding capacity and returns *(*Muthoni *et al*., 2013)

Therefore, efforts to enhance production and use of high quality seed potato by smallholder farmers are important to increase yields and improve food security. In 2017, Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) launched a seed potato value chain (SPVC) Community Action Research Project (CARP+) at Egerton University to be implemented in Nakuru County. This project is aimed at enhancing production and access to high quality seed potato for improved productivity and income of smallholder farmers. This four year project is implemented by Egerton University through partnerships with farmers, students, County government and other stakeholders like National Potato Council of Kenya, Agricultural Development Cooperation (ADC), KARLO and other organisations. The project started with a survey which was important to establish the status of production and use of clean seed potato among farmers at the inception of the project. One of the objectives of the survey was to find out and analyse the production and usage of clean seed potatoes especially among the smallholder potato farmers in Nakuru County which is the focus of this paper.