

Opportunities and challenges for hybrid potatoes in East Africa

A Workshop organized by VIB-International Plant Biotechnology Outreach¹⁾ and Project group POTAREI²⁾

Introduction

Potato is increasingly considered an important staple crop in Africa because of its high nutritional value and limited water use, as compared to e.g. cereals. However, whereas in Northern regions yields of 40 t/ha are possible, East African yields often remain far below 10t/ha. African farmers mostly rely on traditional low productivity varieties which are adapted to East African climate conditions and with which farmers have experience. Since potatoes are normally propagated through tubers, the crop is vulnerable for stacking diseases, which results in degeneration and loss of harvest. Indeed, African farmers are facing significant troubles with tuber borne diseases like bacterial wilt, viruses, and late blight.

As an alternative to conventional breeding and tuber propagation *true potato seed systems* are currently being developed in the Netherlands. For example, the Dutch start-up company Solynta has recently established a diploid hybrid potato system which promises faster development of new potato varieties that can potentially be propagated by seed. This approach may not only lead to more effectively dealing with diseases, it also promises significantly lower transport costs of tubers, and an enhanced and accelerated capacity to breed new hybrid potato varieties adapted to local conditions that may contribute to food security aims in Africa.

It is expected that several hybrid seed multiplication and cropping strategies are theoretically possible, varying from sowing true potato seeds directly by farmers to using tubers that are produced by special firms with true potato seeds as starting material. These different strategies raise a series of questions whether these hybrid varieties of true potato seed might fit in current systems and conditions of agriculture in Africa: questions may rise about the organization of breeding and the provision and cost of seed, about breeder's rights and seed certification, about appropriate practices of propagation and cultivation, about market needs and conditions, about the role and needs of different groups and collectives of farmers, including smallholders, and about the role of public and private parties.

Workshop aims

The major aim of the workshop is to assess the opportunities and challenges for hybrid potato breeding and cultivation in East Africa from a perspective of 'responsible innovation'. Responsible innovation in this context seeks to benefit productivity, sustainability, diversity and equity in systems of agriculture, while taking into account the needs and interests of a variety of stakeholders.

¹⁾ International Plant Biotechnology Outreach (IPBO) is part of the Flemish Institute for Biotechnology (VIB) and aims to train people from less developed regions and emerging economies in order to access the latest technological developments and the design of effective biosafety and regulatory mechanisms.

²⁾ POTAREI is a Dutch NWO-funded Responsible Innovation project that aims to assess the agronomical and societal possibilities, conditions and impacts of hybrid potato breeding. Partners in this project are Wageningen University, the University of Groningen, the Rathenau Institute (The Hague) and the potato breeding firm Solynta (Wageningen).

Workshop programme

June 13	Activity	Invited speakers
10:00 – 10:30	Welcome / coffee	
10:30 – 10:50	Workshop aims – hybrid true potato seeds (HTPS) as focus	Dirk Stemerding & Sjaak Swart (POTAREI)
10:50 – 11:25	Potatoes: A global perspective	Robert Graveland (XXX)
11:25 – 12:00	African farmers' perspectives on potato cultivation & breeding	Moses Nyongeza (XXX)
12:00 – 13:00	Plenary discussion: what do you see as the most challenging issues in African potato farming?	
13:00 – 14:00	Lunch	
14:00 – 14:35	Potato breeding research & innovation in Africa	Denis Griffin (XXX)
14:35 – 15:10	Potato regulation and certification in Africa	Jean Claude Nshimiyimamnar (XXX)
15:10 – 15:40	Plenary discussion	
15:40 – 16:00	Tea / coffee	
16:00 – 16:30	Corporate involvement in African potato value chains	Anton Haverkort (WUR)
16:30 – 17:00	The role of NGOs	Bram de Jonge (Oxfam)
17:00 – 17:30	Plenary discussion	
17:30 – 18:30	Posters and drinks	
19:00 – 21:00	Dinner	
June 14		
09:00 – 09:15	Welcome / coffee	
09:15 – 09:45	Wrapping up: prospects, bottlenecks and challenges from the perspective of responsible innovation	Koen Beumer (POTAREI)
09:45 – 10:20	Possible potato growing systems of HTPS	Luuk van Dijk (POTAREI)
10:20 – 10:55	African experiences with HTPS so far	Gertjan Bex (Solynta)
10:55 – 11:25	Tea / coffee	
11:25 – 12:00	Why innovation may fail?	Conny Almekinders (POTAREI)
12:00 – 13:00	Plenary discussion: relevant questions on African HTPS	
13:00 – 14:00	Lunch	
14:00 – 14:35	Towards a systems' perspective on African HTPS: relevant issues for group discussions	Paul Struik (POTAREI)
14:35 – 15:15	Group discussions: conditions and requirements for African HTPS	
15:15 – 15:30	Tea / coffee	
15:30 – 16:30	Plenary presentations of group discussions & conclusions	Dirk Stemerding & Sjaak Swart (POTAREI)
16:30 – 17:30	Drinks	
19:00 – 21:00	Dinner	