Current status of groundnut improvement in Uganda

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ABSTRACT: In Uganda, groundnut (Arachis hypogaea L) is the second most important legume after beans. Groundnut is cultivated on nearly 260,000 ha, representing 24.6% of the total arable land. On-farm pod yields are low, averaging 800 kg/ha of dry pods, compared to on-station potential yields of 3,000kg/ha. Sales from current production could potentially generate $344 million to the producers who are largely resource-poor smallholder farmers. The yield gaps are attributed to a combination of biotic, abiotic, cultural and social-political factors. Since the 1920s, research has released 24 varieties, the most recent commercial ones being the Serenut 1-14 series. These varieties have helped to alleviate some of the mentioned production constraints. However, varied growing agroecologies, land tenure systems, diverse market preferences, and emerging stresses call for continuous research. Current research agenda includes breeding for high oleic, leafminer resistance, confectionery, aflatoxin tolerance, drought tolerance, early to medium maturing varieties with high yielding groundnut rosette disease resistant backgrounds. A combined approach including Marker Assisted Selection, agroecological testing using Breeding Management Systems (BMS) software shows some promising perspectives and efficacy to resolve the current constraints challenging the crop performance. A recently developed regeneration protocol is also another opportunity to aid in introgressing additional traits across taxa. The bimodal rainfall pattern and active hybridization programme increases our breeding cycles. Furthermore our groundnut breeding program has an active breeding pipeline frequently releasing varieties and lines that we shared with a large network of National Programs across Africa (South Sudan, Ethiopia, Ghana, Mozambique, Mali, Malawi), Haiti and the USA.

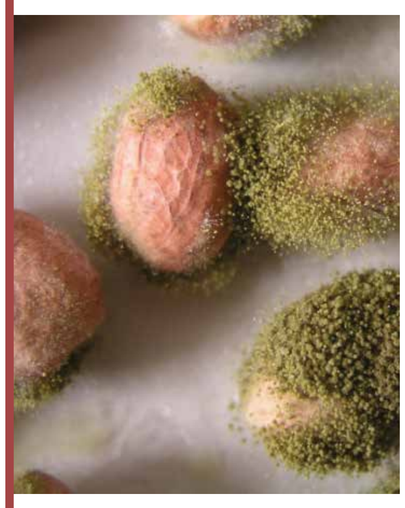
Constraints being addressed

Groundnut Rosette Disease (GRD)

Late Leafspot

Drought

Leafminer



Aflatoxin

Dormancy

Groundnut oil

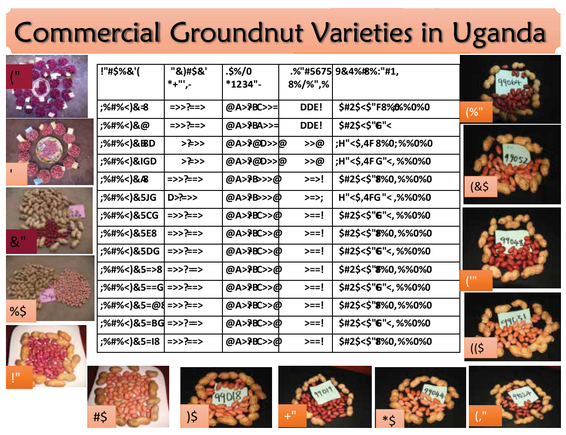
Confectionery groundnuts

Leafspots and GRD resistant lines

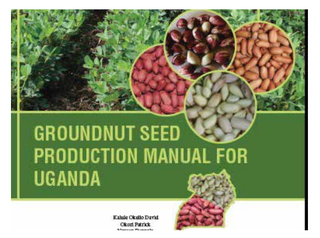
Multi-stress resistant Genetic stock

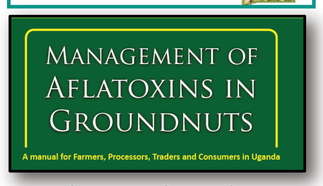
Early maturing and high yielding lines

Community based seed multiplication



Value addition: Peanut butter and snacks





Dissemination materials

Training and awareness creation

Regeneration protocol

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