
In most low-input peanut production systems in Africa, the greatest potential for improved productivity and income is through the use of improved germplasm. During the 2012-2017 PMIL project cycle, a global breeding initiative was supported that included national program breeders from Burkina Faso, Haiti, Ghana, Malawi, Mozambique, Senegal, Uganda and Zambia, in partnership with breeders and scientists from US universities, including University of Florida, University of Georgia, New Mexico State University, and Texas A&M University. This effort resulted in the release of numerous varieties, the exchange and evaluation of new germplasm in multiple locations, and the establishment of better working relationships with regional breeding initiatives. In addition, efforts were made to evaluate the impact of improved varieties introduced this and a previous research initiative.

INTRODUCTION

Previous and present breeding initiatives have focused on intensifying peanut production and enhancing quality by developing and releasing new and improving high yielding varieties through US and PMIL target country collaborative breeding programs. Mitigating yield losses from biotic stresses have focused on developing varieties with resistance to economically important pathogens and pests – such as groundnut rosette disease (GRD), leaf spot diseases (LSD), and groundnut leaf miner – while the primary abiotic stress has been drought tolerance.

As a result of that work, numerous varieties have been released, including the Serenut 4-14 series in Uganda with GRD and LSD resistances and drought tolerance (Okello et al., 2013). The breeding programs have and continue to focus on such value-added traits as high oleic content with the release of NuMex 01 (Puppala and Tallury, 2013) and Schubert (Burow et al., 2014) in the US market, micronutrient density (Fe and Zn), high oil content, and seed size (edible markets).

We continue to pursue our objectives with new/upcoming releases, including improved landraces.

CONCLUSION

The research has resulted in the development and adoption of new and improved cultivars with increased yields, quality, marketability. Benefits have and will result in improved peanut value chains, increased food security, better nutritional and dietary traits, and increased income throughout PMIL target countries as well as other developing countries via spillover. For a more comprehensive view of the peanut breeding projects visit www.pmil.caes.uga.edu for more information, publications, and reports.


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IMPACT

Research has documented the significance of the breeding programs (Moyo et al., 2007). A more recent study has verified the lasting impact in adapting and adopting improved varieties in Uganda (Jelliffe et al., 2015). This study used unique data to validate impact and spillover many years after the initial program was concluded. In addition, as advanced varieties have become available, they have been disseminated to PMIL target countries collaborators and PMIL value chain projects for evaluation as well as other developing countries such as, Burundi, Ethiopia, Mali, Southern Sudan, Democratic Republic of the Congo, Ivory Coast and Kenya.