

Using peanut varietal diversity as a mechanism to improve protein and energy intake in populations with severe acute malnutrition



Peanut diversity © P. Teres, CIRAD

Peanuts are a basic raw material used in manufacturing Ready-to-Use Therapeutic Foods (RUTF) used to treat acute malnutrition in children. There is a wide disparity in nutritional quality (mainly proteins and lipids) between different peanut varieties. Varietal diversity is used in improvement programs to provide local West African RUTF manufacturing companies with highly nutritious peanut seeds that meet international standards [Codex Alimentarius].

Severe acute malnutrition (SAM) is a major cause of child mortality. Treatment for SAM relies largely on Ready-to-Use Therapeutic Foods (RUTF), typically in the form of peanut-based paste. Recent changes in international standards regarding the fatty acid and protein content of RUTF are rendering traditional peanut varieties obsolete. This has had the effect of limiting the amount of quality peanut seeds African producers are able to supply to local factories. Current research is using different peanut varieties of to create new, more nutritious varieties which are well-adapted to African agrosystems.



Projects involved

- ABEE: Strengthening networks and institutional capacities in plant improvement for the development of resilient crops for the benefit of small producers in West Africa [Desira-UE]
- Enhancing Peanut productivity in West-Africa [UGA-USAID]
- Selection of peanut varieties based on essential amino acid content [TSARA: Cirad/INRAE]
- Greenut [INRAE, Cirad et Nutriset]

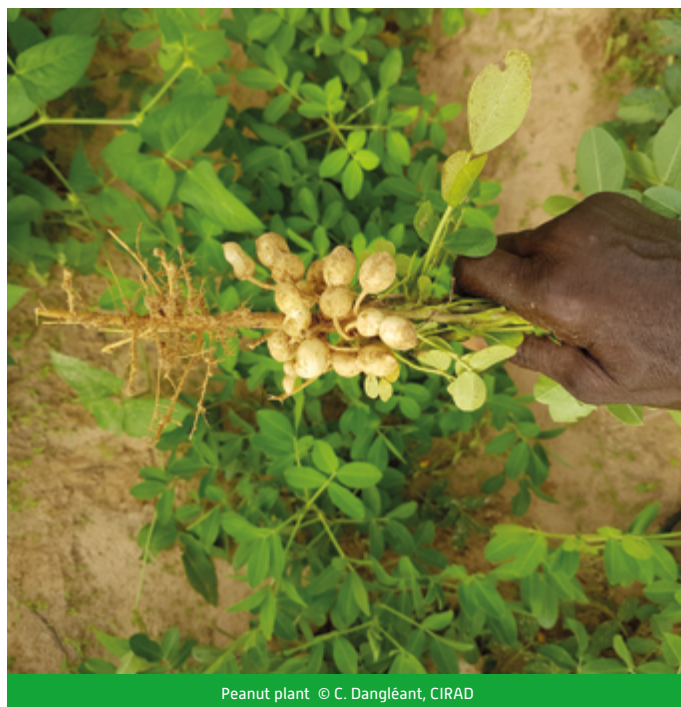


Work carried out by the projects

- Over 1,000 peanut varieties have been collected. This represents the entire peanut diversity cultivated in Africa and has been used in various varietal improvement programs and studies. These peanut varieties were selected based on their adaptation to different environments, their resistance to disease and the nutritional quality of their seeds, including lipid, protein, fatty acid, sugar, iron, and zinc content. The best varieties were redistributed to 15 countries in Western, Eastern, and Southern Africa, including Madagascar.
- Elite varieties are used in crossbreeding programs to combine their nutritional properties with the adaptability of other varieties, creating new peanut varieties. A current doctoral thesis aims to describe the amino acid profile and protein digestibility of several varieties of peanuts with high nutritional value.
- This has been done in partnership with producers to test varieties within the private sector (Nutriset, BASAN Group) to bring peanut production and processing together in the manufacture of RUTF.

Recommendations to policy makers

- Regulatory changes impact ability to source local high-quality raw materials for RUTF production. Supporting public-private partnerships through research funds will improve innovation systems and adapt more quickly to change.
- Agrobiodiversity will enable systems to adapt to changing environments and to diversify and improve consumer nutrition and diet. With this in mind, grain legumes will play a role in the transition to more sustainable and nutritionally rich food systems.
- South-South and North-South partnerships are crucial for mobilizing diversities, knowledge and skills, as well as to strengthen the scope of research and economic players.



Peanut plant © C. Dangleant, CIRAD

Find out more



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Peanut producer in southern Senegal © D. Fonceka, CIRAD