

TECHNICAL SHEET

Introduction to the potato

The potato is a member of the Solanaceae family and is produced by a plant of the species *Solanum tuberosum*. It is a herbaceous, perennial plant that grows well in light, slightly acidic soils. The International Year of the Potato drew attention to the fundamental role of the potato as a staple food for the planet (FAO, 2009). But it also had a very concrete goal: to promote the development of sustainable potato-based systems that increase the welfare of producers and consumers and fully realize the potato's potential as a "food of the future" (FAO, 2009). From a dietary perspective, the potato offers an interesting diversification to West African populations (Thiam et al, 2012). Indeed, the potato tuber provides significant food supplements compared to the cereals traditionally consumed (maize, sorghum, millet, rice) (Thiam et al, 2012). In addition, the potato, because of its production schedule, can provide a food product at times when cereals may be in short supply (Thiam et al, 2012).

Life cycle of the potato

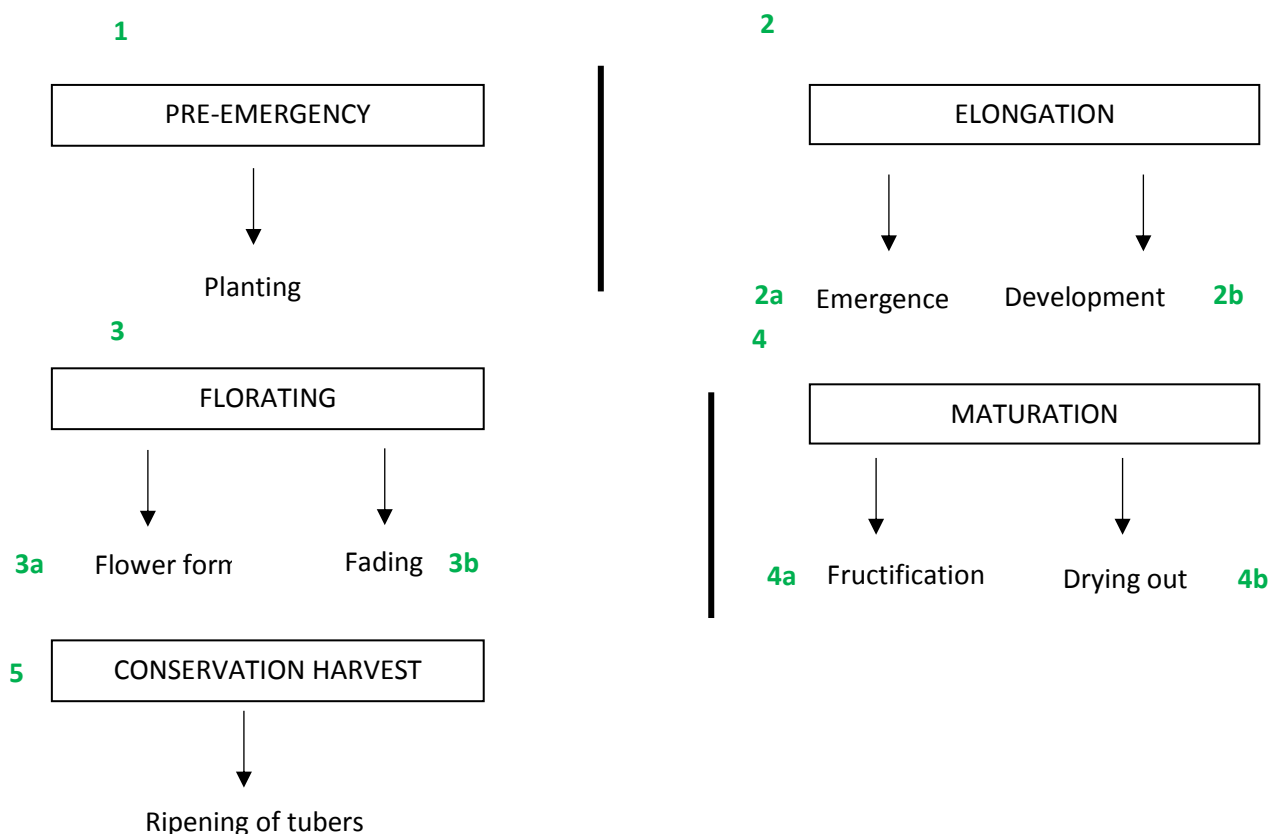


Figure 1 : Potato life cycle (source: <http://plantdepommedeterre.org/>)

Potato production in Northern Ghana

Lack of quality planting material for Frafra potato at the time of planting due to poor storage of tubers. Farmers are therefore unable to establish more than one eighth of an acre despite the high income they can earn from growing Frafra potatoes compared to other crops. Again, Frafra potato is an important food security crop for farmers in the Upper East and Upper West Regions of northern Ghana, but they are unable to produce it on large areas due to lack of quality planting material.

The technology is to establish pre-season nursery plots close to the house, just after the harvested tubers have broken dormancy. This usually occurs about three months after harvest.

The pre-season nursery is relatively small, about 25m² of land or less, which can be fenced and managed in the backyard of the house. The nursery is usually watered with waste water from the house when there is no water source nearby.

It usually takes three months, from March to May, to produce well-established seed potatoes with multiple stems. As soon as the rains arrive in mid-June, the well-developed Frafra potato plants in the nursery are used to establish permanent fields. Cutting consists of removing the multiple stems that are screaming in the air, leaving those that are in direct contact with the soil. The remaining plants, whose stems are in contact with the soil, are fertilised for regeneration. And the regenerated multiple stems will be ready in two or three weeks to be cut again.

The cut multiple stems are divided into pieces of planting material, each piece having two nodes. About 50 or more pieces of stem with two nodes can be obtained from a well-established plant from the nursery that can also produce about 20 or more planting materials from regenerations after the first cut.

Field establishment of the stem cut has been found to be 80-100%, compared to 30-50% for planting with tubers.

Targets of the technology

Smallholder farmers producing Frafra potatoes as well as medium and larger farmers who intend to venture into large-scale Frafra potato production in the Upper East and Upper West Regions of northern Ghana. Youth and women are most likely to adopt the technology to create wealth and produce for their food security needs.

Area of application of the technology

Frafra potato cultivation in Northern Ghana

Level of development or deployment of the technology

The Frafra potato has been tested in other agro-ecological zones of Ghana and has been found to be adopted in the transitional and forest zones of Ghana. The technology will therefore be deployed in these zones to promote large-scale cultivation of the Frafra potato.

CSIR-SARI is currently collaborating with scientists in Burkina Faso at the University of Ouagadougou, and the technology can also be extended to farmers in Burkina Faso. Efforts are being made to extend our collaboration with scientists in Benin and Nigeria and the technology will be deployed in these countries as well.

Photo of technology



Figure 2: Frafra potato (*Solenostemon rotundifolius* Poir.)

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