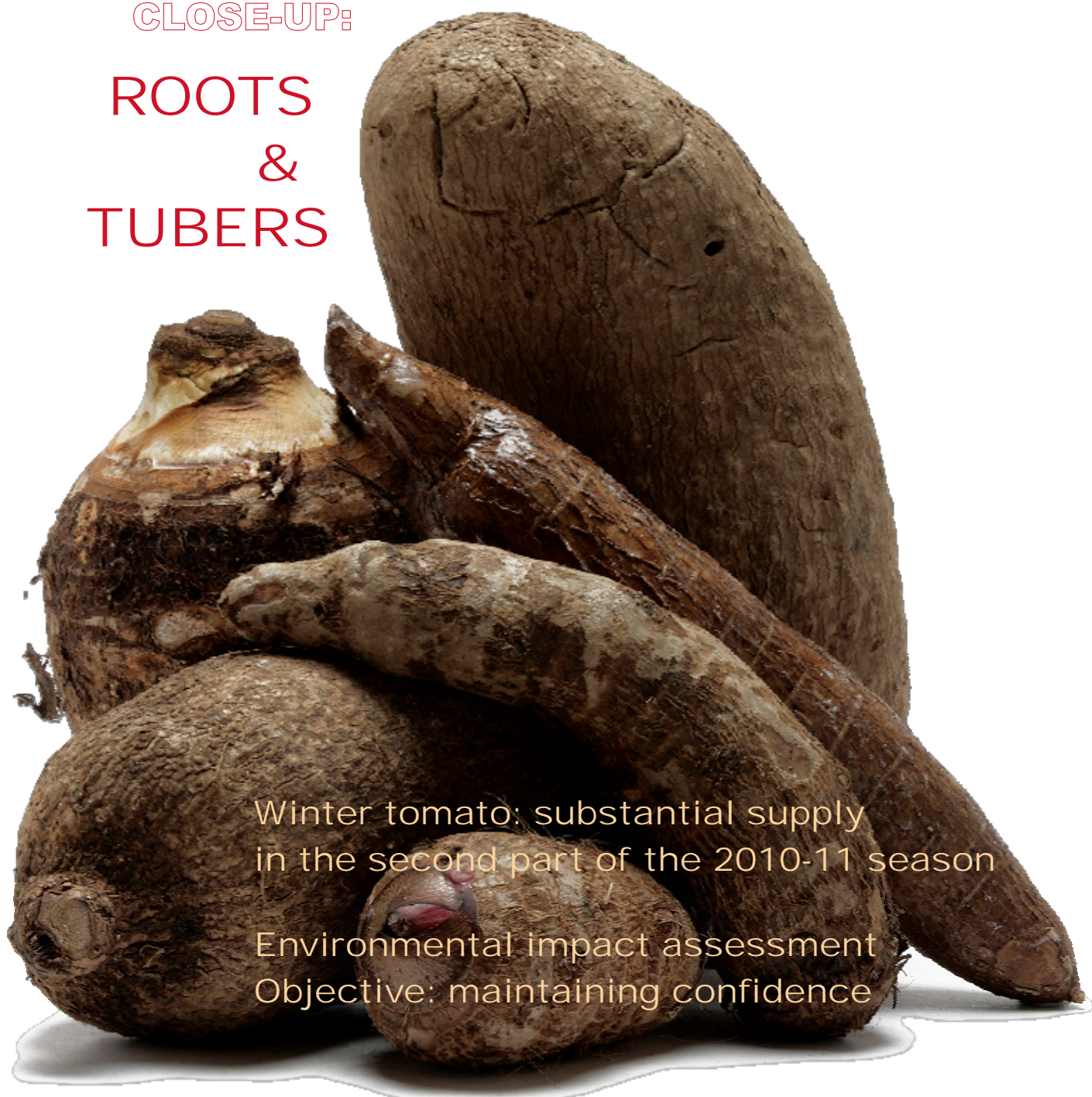


CLOSE-UP:
ROOTS
&
TUBERS



Winter tomato: substantial supply
in the second part of the 2010-11 season

Environmental impact assessment
Objective: maintaining confidence



Tropical roots and tubers

Postharvest processing

by Philippe Vernier

Roots and tubers are relatively perishable and are heavy as their water content is high. Thus in addition to fresh produce prepared in various classical manners (boiled, baked, fried, pounded), there is a whole range of traditional processing operations aimed at stabilising the foodstuff to enhance storage

and availability. The procedures are very varied and widespread in the case of cassava where the so-called bitter varieties require detoxification to remove the hydrocyanic compounds that are less widespread in other tubers.

Numerous industrial processing operations are also used: starch

extraction, meal, instant purée, crisps and freezing. Better knowledge of the functional properties of the starch in these plants is leading to an increasing number of agrifood outlets. Their resistance to cold is an advantage for frozen preparations, and to high temperatures for foods requiring good sterilisation (baby foods).

Tropical roots and tubers — Postharvest processing

	Techniques	Products	Sources	Observations
Cassava	Drying	Drying and grinding to meal.	Africa	Peeled and dried in the open air. Dried roots strongly attacked by weevils.
	Grilled meal	Farinha: grating, pressing, sieving, toasting and possibly grinding.	Brazil	Numerous regional variants: <i>farinha seca branca fina</i> , <i>farinha seca grossa amarela</i> , <i>farinha de agua</i> , <i>farinha mixta do para</i> , <i>goma</i> (starch), <i>farinha de tapioca</i> , <i>tucupi</i> .
		Gari: the same process as <i>farinha</i> but stronger fermentation of paste (3 to 6 days) before pressing.	Togo	Regional distribution in West Africa.
	Moist product, fermented and rolled	Attiéké: fresh precooked cassava grain.	Côte d'Ivoire	Export demand for ethnic markets in Europe.
	Fermented paste	Chikwangué: elastic strips of paste rolled in banana leaves.	Central Africa (Congo)	
	Fermented starch	Sour cassava: bread making starch obtained by spontaneous fermentation and drying in the sun.	Brazil (<i>polvilho azedo</i>), Colombia (<i>amidon agrio</i>)	Used for making cheese breads (<i>pao de queijo</i> , <i>pan de yuca</i>).
Yam	Drying: tubers are precooked and dried rapidly to prevent the growth of moulds	Dried yams (a very hard product) suitable for keeping. Various preparations can be made when the product has been ground to meal: elastic paste (<i>amala</i>), rolled product (<i>wassa-wassa</i>), fritters, etc.	Nigeria, Benin	In traditional processing, drying is performed during the harmattan season when the air is very dry (RH <20%). Solar drying is a possible improvement to handle weather problems.
Sweet potato	Drying	Meal: sundried after peeling, cutting into rings, crushing and milling.	East Africa	Dried sweet potato can be boiled and reduced to purée. Varieties with orange flesh have a high beta-carotene content.
Taro	Semi-liquid acid fermented paste	Poi: prepared by pressure cooking, pounding, fine sieving and lactic fermentation.	Hawaii and Polynesia	A processed preparation that is very popular among Polynesians. Sometimes enriched with grated coconut.