



## PRODUCING POTATOES FOR PROCESSING INTO CRISPS AND FRENCH FRIES

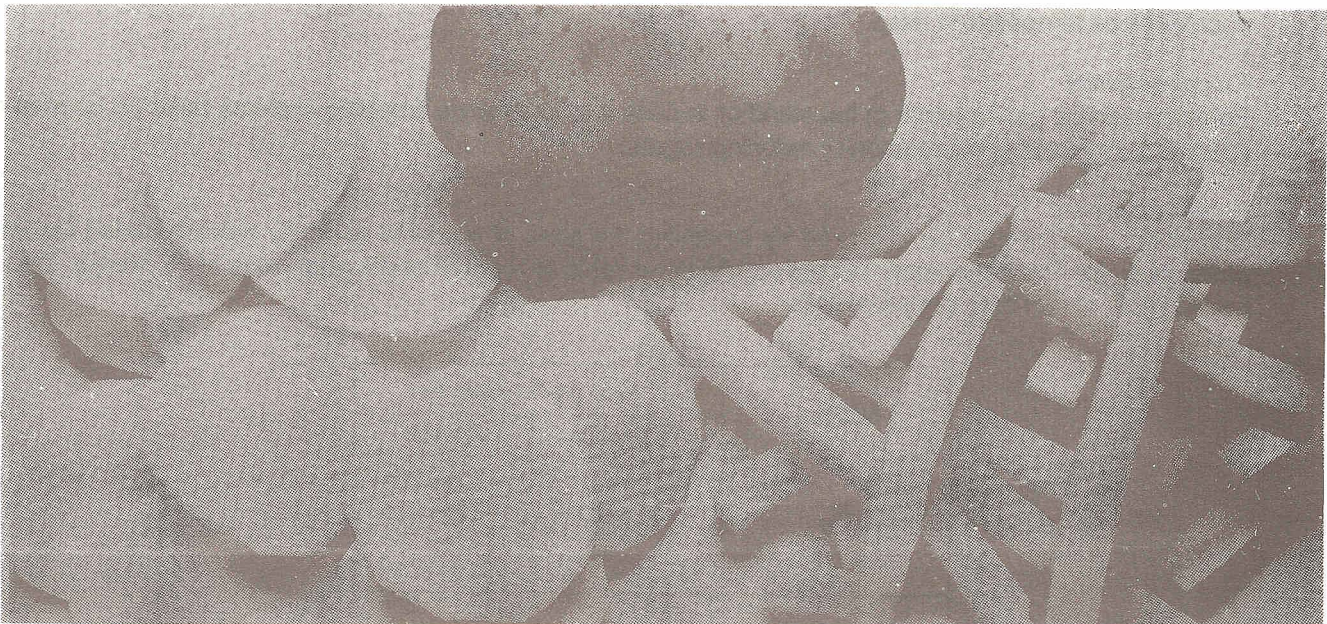
### 1. GENERAL REQUIREMENTS OF THE PROCESSING INDUSTRY

Potato tubers for processing must satisfy all of the normal criteria of quality set by the Agricultural Marketing Board for ware potatoes, viz:

- minimum size of 50 g;
- freedom from diseases, pests and blemishes.

Tubers meant for the Crisp and French fry industries must, in addition, have these further characteristics:

- superficial eyes to minimize peeling losses and
- high dry matter content (specific gravity >1.08) to give high yields of finished products. This also reduces frying time, oil consumption and the oil content in the finished products.



**Crisps (*chips*)**

**French-fries (*frites*)**

The crisp industry prefers medium-sized tubers uniformly round in shape and having low concentrations of reducing sugars (< 0.2% of dry matter). Tuber shape and size determine yield and size of slices. High reducing sugar concentrations lead to darkening on frying.

Consumers prefer long French-fry pieces with pale to light golden colour, and acceptable texture and flavour. The tubers should be medium to extra large in size and uniformly oblong in shape. The concentration of reducing sugars should preferably not exceed 0.3% of dry matter.



## 2. MAJOR CONSIDERATIONS FOR THE PROCESSING INDUSTRY

The processing quality of potatoes depends on the variety and on the conditions of production and storage.

### 2.1 Variety

Until better varieties become available, the following may be used by the processing industry. Variety Exodus is being phased out on account of its lower yield. Prospective growers must therefore make appropriate arrangements ahead of time if they wish to have seeds.

Product	Variety	Characteristics	Main defects
Crisps	1st choice : Exodus	High specific gravity Shallow eyes Pale colour crisps	Unsatisfactory shape
	2nd choice : Up-to-date	High specific gravity Round shape Pale colour crisps	Deep eyes Some discoloration
French fries	1st choice : Spunta	Acceptable flavour & texture Shallow eyes & suitable shape Light-brown French fries	Low specific gravity
	2nd choice : Up-to-date	High specific gravity Acceptable flavour & texture	Unsatisfactory shape Deep eyes

### 2.2 Conditions of production

#### *Date and site of planting*

Crops should be grown in the cooler areas during mid-winter time. This is because specific gravity decreases as temperature rises.

#### *Cropping system*

Potatoes can be grown either in full-stand or in cane interrows since cropping systems have no bearing on specific gravity and concentration of reducing sugars.

#### *Fertilization*

Dry matter content may be improved by modifying the rates of nutrients currently recommended for ware production. Dry matter content increases with lower rates of N and K and higher rates of P. Hence, the following rates of nutrients are proposed.

Nutrient	Rate (kg/ha intercrop)	
	Exodus	Spunta
N	75	50
P <sub>2</sub> O <sub>5</sub>	100	120
K <sub>2</sub> O	50	80

#### *Seed size and spacing*

Increasing the seed rate in order to increase the yield of the desired grades for processing would not be economical unless the current pricing structure is changed. Therefore, producers may follow current practice of planting 1.2 t/ha interrow on the understanding that only part of the harvest will be acceptable to the processing industry.

### 2.3 Storage

To maintain processing quality in storage, tubers may be kept at 8-10 °C for up to three months. However, even at this temperature, storage for longer periods is not recommended owing to sprouting.