

Mondstuk van die Suid-Afrikaanse aartappelbedryf • Mouthpiece of the South African potato industry

CHIPS

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**SIRKEL-N-LANDGOED:
GESONDE MOERE VIR
VOLHOUBARE AARTAPPELPRODUKSIE**

**SATELLITE-DERIVED CROP
GROWTH INDICES FOR
MANAGEMENT OF POTATO CROPS**

Alternatiewe kragbronne
vir jou plaas

KZN small growers
hold farmers' day

Limpopo-kultivarproef
op Dendron, 2022

The magical versatility of potatoes in agro-processing

By Theresa Siebert, ARC-Natural Resources and Engineering

In Southern Africa, only approximately 10% of the potato crop is processed. Of this 10%, about 85% is intended for the potato crisp market and 10% for frozen potato products.

By comparison, the United States processes 50% of its potato crop while Europe is currently processing 30% of its crop. Given South Africa's annual import of 66 000 tons of starch products annually, the question arises whether this is not perhaps an underutilised opportunity for South African producers and processors alike.

A variety of processing options

For the production of **dehydrated potato pieces**, the raw product is peeled, diced, cooked, and then dehydrated. Dehydration is performed in a cabinet, tunnel, or belt dryer.

Frozen diced potatoes are used for the preparation of hash browns or for inclusion in stews and casseroles. For dicing, the tubers should be large, with smooth shoulders, and free from contours. A creamy white flesh colour is preferred.

Frozen French fries are made from potato strips that are partially or completely fried prior to freezing. Deep-frozen completely fried French fries require only heating in either an oven or oil, before eating. Deep-frozen partially fried French fries require deep-oil frying before eating since only the first stage of frying was completed during processing. The product should have a light golden colour without any black spots or discoloration.

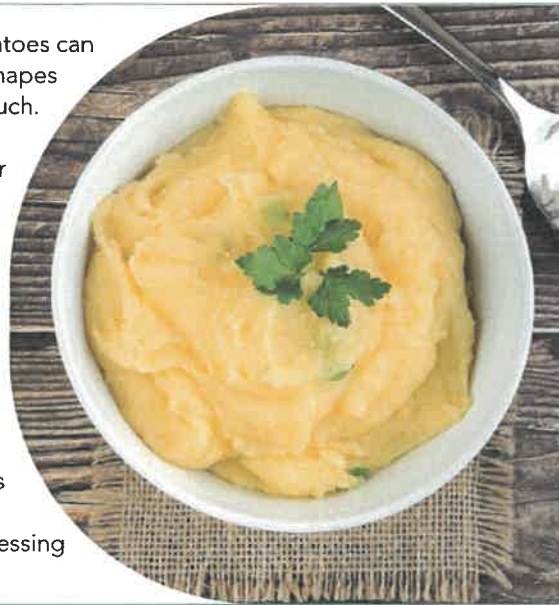
Fresh-cut produce is any fresh fruit or vegetable that has been physically altered from its original form but remains fresh. It has been trimmed, peeled, washed (and cut) to make a product that is 100% usable, with no wastage, and with the product being packaged for consumer convenience. **Fresh-cut, peeled potatoes** fall into this category and have become very popular with consumers. Young or so-called baby potatoes are used for fresh-cut peeled potatoes. The yield for fresh-cut potatoes varies between 74 to 82% depending on the quality of the potatoes used, the peeling method, and the pre-treatments applied.



Frozen potato croquettes are an extruded product made from mashed potato that is blended with optional ingredients and seasoning. The seasoned mash is extruded into any desirable shape, deep-fat fried, and frozen. This product is usually produced from offcuts or small, irregularly shaped tubers.



Mashed or whipped potatoes can be shaped into various shapes and sizes and frozen as such. The product can then be used as a casing for other products such as sauces or fillings. As with frozen hash browns and frozen potato croquettes, **frozen mashed potatoes** are seldom made from fresh, whole potatoes. Instead, this is another product that can be made from offcuts or potatoes otherwise unsuitable for other processing options.



Potato flour is produced through the dehydration of cooked mashed potato on drum dryers. Flour is used in the baking industry to enhance the keeping quality of baked products. It may also be re-hydrated to produce instant mashed potato by the addition of boiling water and/or milk.

Potato starch is extracted from pulped potatoes through a washing process. The starch slurry is then dehydrated. Potato starch is widely used in the food industry in its native or modified form. With the production of potato starch, nothing goes to waste during the process, as the steam used can be redirected to process other products and the peel and pulp can be utilised as animal feed.



Diced potatoes are usually used in the preparation of hash browns, but this product may also be used for potato salad and in other ways.

Potatoes best suited for the production of **canned potatoes** should be small new potatoes with smooth shoulders and free from contours with a creamy-white flesh colour. Potatoes can be canned in several styles including whole, diced, sliced, strips, and julienne. Potatoes can also be canned as cubes in mixtures with other vegetables, curries, or meat dishes. This said, whole potatoes, usually smaller than 38 mm in diameter, make up the largest portion of the potatoes that are canned.



Frozen hash browns are made from grated potato that is blended with complementary ingredients. The mixture is shaped and fried prior to freezing and packaging. Hash browns are typically produced from offcuts or potatoes that are too small or have irregular shapes or that have been trimmed too much to be used for other products like chips.

Potato chips (crisps) are thinly sliced pieces of potato that are fried, flavoured and eaten as a snack. An average yield of 65 to 70% can be expected.



Conclusion

The humble spud, as with crops like wheat and rice, is particularly useful in the everyday diet because of its nutritional versatility. Furthermore, the possibilities of potatoes in the processing industry are absolutely incredible, with the processing options, preparation methods, and cooking options for the consumer being almost endless. 🌱

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