



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore - 35**

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DEPARTMENT OF FOOD TECHNOLOGY

19FTE302 Technology of Snack and Extruded Foods

III – YEAR V SEMESTER

UNIT III CORN BASED SNACKS

**TOPIC – Corn soaking and smoking, Grinding, Masa flour, Sheeting and Cutting, Baking
and Frying**

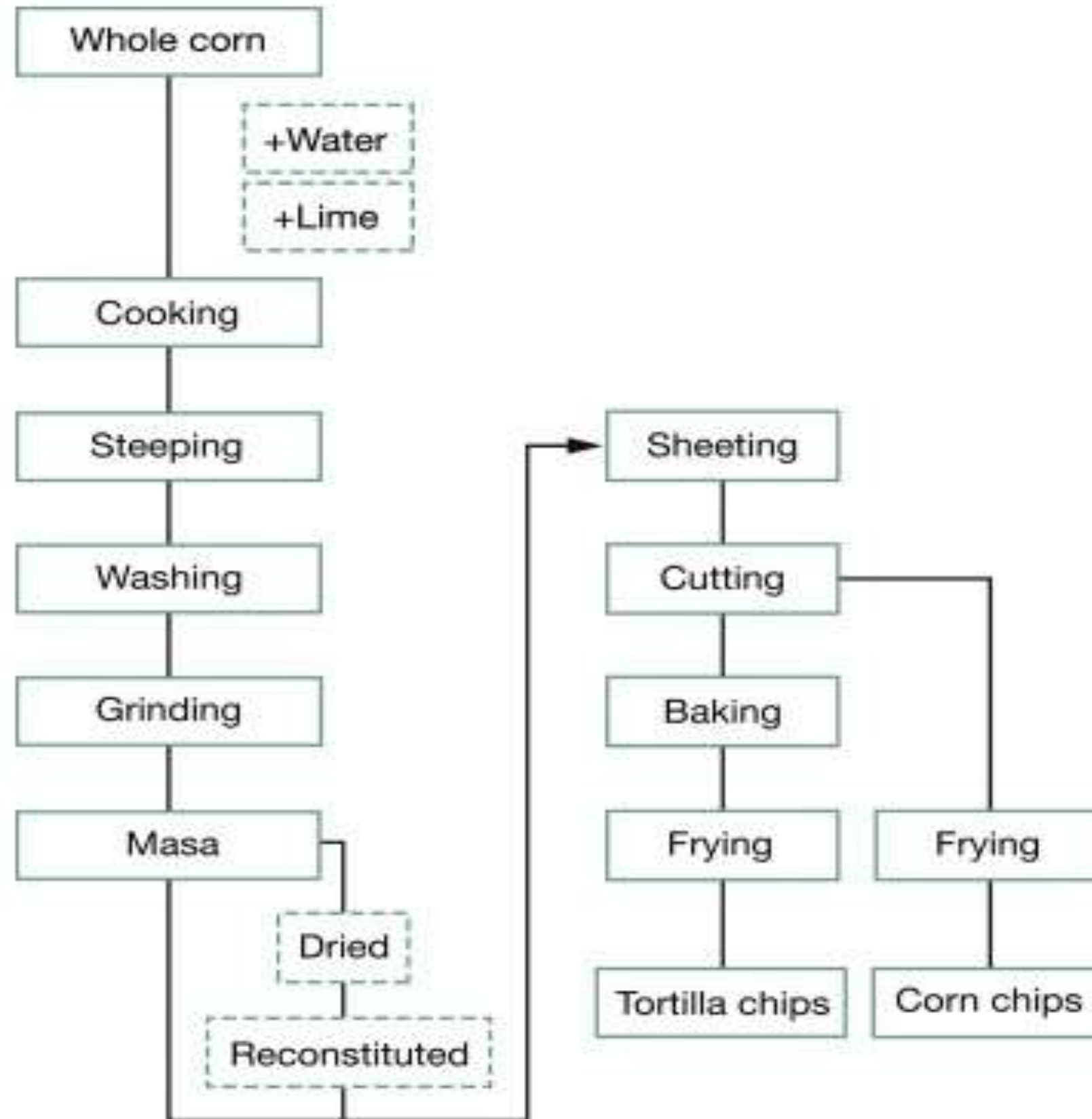


What is Tortilla chips?





Tortilla chips processing





Processing of Potato Flake:

The key to the process is initial [nixtamalization](#) or alkaline cooking and steeping step involving whole corn. In the past, not much attention was given to corn type in the manufacturing of fresh 'masa' that was to be immediately converted to chip products. However, corn quality is quite critical in the manufacture of dry [masa](#).



Processing of Potato Flake:

In the actual process, good quality whole corn is cooked for up to 3 h at 80–100 °C with frequent stirring in 120–300% excess water containing 0.1–2.0% hydrated lime. The cooked corn is then permitted to steep, usually overnight. The cooking and steeping steps permit the [endosperm](#) to hydrate and soften, which encourages partial [starch gelatinization](#) and disrupts and partially dissolves the [pericarp](#). Subsequent washing removes the pericarp and residual lime.



The resulting cooking/steeping liquor normally contains 2–6% dissolved and suspended solids, which are usually discarded. The washed material is then traditionally stone-ground, resulting in fresh masa, which is then sheeted, cut, and either baked and fried to produce tortilla chips or just fried after sheeting and cutting to make corn chips. In the case of corn chips, the masa can be directly extruded and cut into the frying oil instead of being sheeted and cut.



If reconstituted masa flour is used, a large particle size should be used for corn chips. This will provide for interruption in the dough structure so that air and water can escape during frying. If small particle flour is used, excessive puffing occurs during frying, resulting in a chip that will absorb more oil during frying and can be easily broken. On an average basis, corn chips contain 35% fat, whereas good quality tortilla chips have 25% fat.



This is because of the preliminary baking step with tortilla chips, which sets the structure, therefore minimizing the oil absorption during frying. Usually, corn chips are made with a blend of white and yellow corn masa, which produces chips that are light in color. Corn chips made from 100% yellow corn masa usually have an objectionable burned flavor, which can be attributed to the degradation of [carotenoids](#) during the frying step.



Flavors and colors can be either added to the dough, which can result in significant flavor loss due to volatilization or degradation during frying, or added either as a powder or in the form of an oil spray after frying.

The traditional corn cooking techniques to prepare masa or corn/tortilla chips are being changed by more efficient, large-scale operations where corn is cooked and ground immediately with little or no steeping.



New and simple methods of producing corn and tortilla chips and other masa-based snacks have been developed. Many [snack](#) food manufacturers like to use dry masa flours that come in a variety of color and particle sizes. By adding water in precooked masa flour, different shapes of snacks can be made by using a forming [extruder](#). These snacks can be fried, flavored, and packaged for sale. Frying has increased the masa-based snack market, because after frying, the final product has an excellent taste and texture and a long shelf life.



THANK YOU