



# SNS COLLEGE OF TECHNOLOGY



## COIMBATORE-35

### 19FTE302 Technology of Snack and Extruded Foods

#### UNIT –III

#### CORN BASED SNACKS

Extruded corn chips are produced from coarsely ground lime cooked *masa* that is formed and deep-fat-fried, whereas tortilla chips are produced from pieces of baked tortillas that are deep-fat-fried. Baking of tortillas prior to frying greatly affects organoleptic properties and caloric density of these snacks. Tortilla chips have a stronger alkaline-cooked flavor and a crispier texture than corn chips. In addition, tortilla chips are less energy dense because they absorb about 12% units less oil during frying.

Maize kernels, lime, oil, salt, and flavorings are the basic ingredients for the production of these snacks. Product quality and processing parameters greatly depend on the kernel characteristics. However, the oil, salt, and seasonings used for the preparation of maize snacks have a profound effect on flavor, mouthfeel, and overall acceptability.

Tortilla chips are generally manufactured from coarsely ground *masa* from either fresh *masa* or dry flour that is sheeted, formed, and cut in preparation for the subsequent steps of baking, equilibrating, frying, and salting/seasoning. Tortilla chips are usually formed by two rotating smooth Teflon-coated rolls that automatically press the *masa* into a thin sheet. The newly formed *masa* disks are baked into tortilla pieces commonly in a three-tier gas-fired oven at temperatures ranging from 350 to 480 °C for 40–60 s. The resulting baked tortilla pieces are cooled for 3–30 min through a series of open tiers that discharge into the fryer. Frying of tortilla chips is characterized by further starch gelatinization and formation of a yellow crust and the characteristic flavor as a result of Maillard reactions. Immediately after frying, the hot chips are salted and seasoned in rotating tumblers equipped with liquid sprayers and/or auger or electrostatic powder dispensers. After seasoning, fried products are cooled and immediately packaged in moisture-proof or aluminized bags to avoid rancidity and loss of crispiness. There are basically two types of low-fat tortilla chips: fried and toasted. The first type usually contains

1/3 less oil compared with regular counterparts, and the second type does not contain any added oil although some products are sprayed with cooking oil to increase fat content to 7–8% to enhance flavor and texture. For production of reduced oil snacks, moisture is removed from the baked tortilla chip by further baking or toasting or baking/flash frying to yield a crispy product.