

Table : Products and their drying caracteristiques

Products	Cutting Form	Initial Moisture (%)	Final Moisture (%)	Max Temp. (°C)	Approx. Time (hours)	Other Parameters
Fruit						
Mango	Thin slices	82-86	12-15	60-65	10-14	Blanching recommended before drying
Pineapple	Slices or cubes	85-90	12-15	55-60	12-16	Use of anti-browning agents recommended
Banana	Rounds	74-80	18-20	60-65	8-12	Pre-drying at low temperature suggested
Papaya	Thin slices	85-88	12-15	50-55	8-12	Acidic treatment for color preservation
Orange	Segments or slices	85-88	10-12	55-60	10-14	Slicing thin to ensure uniform drying
Guava	Slices or chunks	78-83	10-12	55-60	10-12	Peel and slice thinly for faster drying
Watermelon	Small cubes	91-93	15-18	50-55	8-10	High sugar content may require lower temp
Avocado	Slices or halves	60-70	10-12	50-55	8-12	Ensure even airflow to prevent browning
Vegetables						
Okra	Thin slices	89-92	10-12	55-60	10-14	Low-temp drying preserves vitamins
Spinach	Whole leaves	90-93	4-6	40-45	6-8	Blanching before drying to preserve color
Tomato	Rounds	93-95	10-12	55-60	8-12	Anti-browning agent recommended
Carrot	Thin slices	85-90	8-10	60-65	10-14	Ventilation crucial to retain Vitamin C
Eggplant	Thin slices or cubes	92-94	10-12	50-55	10-14	Uniform cutting for consistent drying
Onion	Rings or slices	86-90	5-8	50-55	6-8	Low-temperature drying to reduce odor
Pepper	Halves or slices	90-92	8-10	55-60	8-10	Ensures preservation of flavor and color
Cassava	Chips or small pieces	60-70	10-12	60-65	12-16	Pre-treatment with boiling reduces drying time

Characteristics of the product to be processed

The specific characteristics of fruits and vegetables play a crucial role in their drying behaviour. Fruits, which are generally richer in sugars and organic acids, have a higher initial water content than vegetables. This water content, ranging from 70% to 90%, affects the drying duration and the conditions required for uniform drying. The cellular structure of fruits, often more delicate, requires careful management of temperature and air velocity to avoid surface hardening a phenomenon where a dry crust forms before the interior is adequately dehydrated. This can not only alter the texture but also reduce the nutritional quality of the dried product.

Regarding vegetables, their fiber and starch composition generally makes them less susceptible to surface hardening, but they present other challenges. Leafy vegetables, for example, require lower drying temperatures to avoid the degradation of chlorophyll pigments, which are sensitive to heat. Additionally, the density and size of vegetable pieces directly influence the drying duration, necessitating uniform cutting to ensure even drying.