

TECHNOLOGY TRANSFER BULLETIN

DOST- ITDI Technologies now ready for transfer

DOST's Industrial Technology Development Institute (ITDI) announces that the following technologies are now ready for transfer:

1. ITDI *Monascus purpureus* whole cell laboratory scale color production technology



The technology uses two improved strains to produce food colors, one using rice substrate and another, using aqueous media with heat- and moisture- modified starch.

Color from the rice substrate may be extracted with ethanol followed by solvent evaporation while color from the aqueous media may be spray-dried to obtain color in powder form. Both mutants did not exhibit activity against bacteria which implies low level of citrinin.

The technology is developed by the Industrial Fermentation Section under the Environment and Biotechnology Division of ITDI.

2. Freeze-dried avocado using the DOST-developed freeze dryer

Freeze drying preserves the nutrients, color, aroma and flavor of the product by means of sublimation, a mild dehydration process.



Advantages/characteristics of freeze- dried avocado:

- Requires no preservatives
- Healthy and nutritious
- Preserved aesthetic, functional, nutritional and organoleptic properties
- Maintained material structure
- Improved product stability during storage
- Good re-hydration characteristics

3. Powdered egg albumin using the DOST-developed spray dryer



Egg white is mainly used as an ingredient to various food products for its gelling and foaming property. However, it has a short shelf life and spoils easily that may lead to a lot of wastage. Through spray drying (using the DOST-developed spray dryer), powdered egg white was developed.

Advantages/Characteristics of powdered egg white:

- Very stable; the powdered egg white has a shelf life of over a year (under ideal storage conditions)
- Convenient to use; hassle & mess – free, since there is no need to separate the yolk from the egg whites
- Does not require refrigeration
- Made from 100% egg whites, no bulking agent/ preservatives added
- Easier to handle & transport due to reduced volume

4. Carrot chips using DOST-developed vacuum fryer



Vacuum frying preserves the nutrients of foods by enabling deep-fat frying in lower temperatures and pressure as compared to conventional frying.

Advantages/characteristics of vacuum-fried carrots:

- High quality since there is minimal loss of properties (e.g., color, flavor, nutrients)
- Reduced fat absorption
- Contains less oil than conventionally-fried carrots
- Requires no preservatives
- Crispy
- Healthy & nutritious

5. Chili oil using DOST-developed water retort



ITDI' s FIC Main developed the chili oil products from the local *siling labuyo* using the DOST-developed water retort. The resulting chili oils are perfect for viands, chips, and even crackers. The chili oils come in various flavors such as onion, garlic, ginger, dried anchovy, shrimp paste and anchovy paste.

Advantages/characteristics of chili oils:

- Build up appetite
- Shelf-stable
- No sophisticated equipment needed
- Use locally available raw materials

6. Emergency Food Reserve (EFR)

EFR nutri-food powder is made from choice crops like cassava, camote, malunggay, and monggo. It is an energy food that is both nutritious and filling.



Advantages/characteristics of EFR:

- Ready-to-use powder, needs no cooking/heating, just add water and can be eaten
- Provides immediate relief to a hungry tummy
- It can be stock-piled and made into various food preparations (e.g., chocolate nutri-bars, *polvoron*, EFR breads, soup, *kutsinta*, *puto*, *bibingka*, and *ukoy*).

7. Mango flakes

Mango flakes are drum-dried fresh mangoes (Carabao variety) at its optimum maturity (rare ripe with peel color of 80% yellow and 20% green), with firm texture. Drum drying is a continuous, indirect drying method that allows short retention times while evaporating all the liquid in the product within a single rotation of the drums.



Advantages/characteristics of drum drying/mango flakes:

- Reduces risk of degradation of the product during storage
- Gives the product its unique properties like taste, color, odor and texture
- Shelf-stable
- Drum-dried fruits like mango flakes are widely used in food manufacturing (e.g., confectionery, baking, sweets, infant foods, sauces and soups)



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