8. Processing Technology for Turmeric, Onion, Garlic and Ginger

Preamble:

The project entitled "Pilot Plant Demonstration-cum-Training on Agro-Horticultural Processing for Value Addition" financially supported by Rajiv Gandhi Science and Technology Commission (RGSTC), Govt. of Maharashtra was successfully executed by Officer-In-Charge, Agro Product Development Research Centre, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola - 444104. The newer "PDKV-Turmeric Processing Technology" bypassed the traditional methods of boiling, drying and polishing to obtain the dry rhizomes followed by grinding to turmeric powder. The newer technology directly converts the farm fresh wet turmeric rhizomes into dry powder within a day with qualitative as well as quantitative improvement in turmeric powder. The same technology with little modifications can be useful for processing of onion, ginger and garlic for making kibbled (rings)/minced (chops) and dry powder. The technology is now ready for business venture on turn-key basis.

Objectives of the project:

- Encouragement and practical help to entrepreneurs through hands on training on the pilot scale plants.
- Transfer of technology developed by University to entrepreneurs and farmers for value addition of their farm produce.

Salient Features of the Technology:

- Direct conversion of farm fresh turmeric rhizomes into dry powder without using any chemical and preservative.
- The process bypasses the turmeric boiling, open drying and polishing steps of traditional turmeric processing.
- Curtails down the processing period from 15 to 20 days to One day (6-7 hrs depending on type of dryer).

- Recovery of turmeric powder is more than 20% without losing its colour and aroma.
- Recovery of curcumin, an active ingredient is about double than in the traditional boiling/cooking method.
- Quality wise, the turmeric powder obtained by this technology meets all requirements of US Government Standards and the American Spice Trade Association Standards.
- Same machine & equipment can be use for processing of Onion and Garlic for making of kibbled (rings), Minced (Flakes) and powder which fulfils the ESA (European Spice Association) requirements for export.

Configuration of the Processing Plant (Section Details):

Section	Details
Storage and Handling Section	Suitable storage, conveying and lifting facility
Cleaning & Washing Section	Rhizome cleaning and Washing facility
Cutting & Blanching Section	Rhizome cutting and pretreatment facility
Enzyme Denaturation	Batch enzyme denaturation system
Dryer	Steam heated rotary dryer/solar dryer
Grinding/Pulverization	Grinding of dried turmeric pieces into powder

- **Technology Transfer**

Turmeric processing technology is a unique processing technique for direct conversion of farm fresh/wet turmeric rhizomes in to quality turmeric powder. Technology is available for transfer.

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Sample Products developed under the project

Dry Rhizomes of Turmeric

Turmeric Powder

Red Onion Kibbled

White Onion Kibbled

Garlic Minced

Red & White Onion Powder

Garlic Powder