



Integral Institute of Agricultural Science & Technology (IIAST) Integral University, Lucknow

Report of Value-Added Course On Processed Products of Tomato

Fruits and vegetables are an important supplement to the nutritional requirements in the human diet as they provide essential minerals, vitamins and fiber required for maintaining health. India is the second largest producer of fruits and vegetables in the world after China. Huge quantity of this production is wasted due to inadequate preservation facilities as only 1.5% to 2% of the total produce is processed in the country.

Tomatoes are grown in our country in abundance, both in summer and winter seasons, but those grown in winter are superior in quality because they contain more total solids. They are a good source of vitamin C. Often they are sold at distress prices during the peak harvest season and nearly 25% of the produce is spoiled due to mishandling. Such losses can be avoided by converting tomatoes into delicious products like paste, puree, juice, ketchup and sauce. This processing of tomatoes will not only minimize the chances of distress sale but also permit the growers/ their dependents to generate more income. India is the world's second largest tomato producer after China and currently accounts for 11% of the total global tomato production.

Tomato production is growing worldwide as consumers demand a wider range of innovative, value-added products. This results in high demand on mixing technology for production and processing. Tomato processing industry is very huge and instills future scope in itself. A large part of the world's tomato crop is processed into tomato paste/puree, which is subsequently used as an ingredient in many food products, mainly soups, sauces and ketchup. India has been exporting processed tomatoes in the form of tomato paste and ketchup. Tomato sauce is being used with snacks like rolls, cutlets, samosas, chops, soup, and other dishes.

Integral Institute of Agricultural Science and Technology (IIAST) has taken initiative to address this critical concern by organizing 30 hr. Value Added Course (VAC) entitled "Processed Products of Tomato" from 20th April 2023 to 19th May 2023. The course will help in understanding the concept and technical know-how of making the processed products of tomatoes along with their preservation.

Considering the above objective in mind this course was designed especially for UG, PG and Ph.D. students of all departments of Integral University. A total of 136 students were selected to complete all the registration formalities. The course was designed to cover the **Sustainable development goals (SDG's) 12** of the United Nations-2023 in the field of Responsible Consumption and Production.

The Value-Added Course was conducted under the guidance of Prof. Saba Siddiqui, Head, Department of Agriculture, Integral University and was coordinated & facilitated by the following faculty members of IIAST.

- Dr. Satish Yadav & Dr. Md. Abu Nayyer – Course Coordinator, Department of Agriculture, Integral University, Lucknow.
- Dr. Muzeev Ahmad – Faculty Coordinator, Department of Agriculture, Integral University, Lucknow.
- Dr. Sanket Kumar - Faculty Coordinator, Department of Agriculture, Integral University, Lucknow.

The details of course modules addressed are as under:

S.No.	Date		Course Instructor	Module
	From	To		
1.	20/04/2023	22/04/2023	Dr. Muzeev Ahmad	Background of tomato Nutritional benefits of tomato, Health benefits of tomato, post-harvest loses of tomato, Tomato varieties, Tomato ripening stages, Tomato grades and storage Importance of tomato processing, Points to be considered while processing of tomato, Characteristics of tomato colour during processing, Effect of processing on nutrients in tomato products
2.	27/04/2023	29/04/2023	Dr. Sanket Kumar	Tomato ketchup: Processing of tomato ketchup, General considerations, Pilot scale production of tomato ketchup, Quality changes during storage, Marketing issues. Tomato pastes and puree Processing of tomato paste and puree, Pilot scale production of tomato paste, Shelf-life stability of tomato puree/ paste, Quality problems, Market issues, Salient features of tomato paste / puree
3.	04/05/2023	11/05/2023	Dr. Md. Abu Nayyer	Tomato sauces and chutneys Processing of tomato sauces, Processing of tomato chutney, Pilot scale production of tomato sauce and chutneys, Additional processing notes Food Safety and Standards Regulations, 2010 Regulation 5.3.14 thermally processed tomato puree and paste, Regulation 5.3.27 tomato ketchup and tomato sauce, Regulation 5.3.8 thermally processed tomato juice, Microbiological requirements of tomato products, Quantity of sample to be sent to the public analyst
4.	12/05/2023	19/05/2023	Dr. Satish Yadav	Tomato products – Basic recipes Tomato puree and simple concentrate, Tomato paste, Tomato sauce or ketchup, Basic sauce, and chutney - Italian style, Tomato juice

All the participants who successfully completed the course were awarded e-certificates based on their quiz test, feedback for every unit, attendance, general feedback, and moreover 50% qualifying criteria for the course.

Key Highlights of the VAC:

- To impart knowledge about value addition and marketing in the agriculture.
- To provide adequate knowledge and basic concepts related to marketing of essential tomato products.
- To impart knowledge about value addition and marketing in the agriculture.
- To make the students aware about different ways to manage finance for end uses of essential tomato products in agriculture.

