IFU University Juice Processing Summer School
Program 2025

Day	Time	Activity	Session	Timing	Topics	Contents description	Lecturers
24 June	08.30 - 10.30	Theoretical lesson: 3 Topics	Raw materials processing	60'	Raw materials processing	Clear & cloudy juice extraction	**Edgar Zimmer (Bucher Unipektin)**
						Clear juice clarification	
				30'	Citrus extraction	Orange extraction	**Antonio Aldini (JBTC)**
				30'	Raw materials extraction	Pomaceous, stone fruits, berries and tropical fruits puree extraction	**Mario Gozzi (CFT)**
	10.30 - 10.45			15'	Q&A		
	10.45 - 11:15	Juice break					
	11:15 - 12.45	Theoretical lesson: 2 Topics	Thermal juice stabilization	45'	Effects on microorganisms, enzymes and nutritional compounds	D, z and F_0 parameters (to be applied to juices)	**Antonio Aldini (JBTC)**
						Ea and k parameters	
						Inactivation kinetics	
				45'	Thermal fluid dynamics overview	"Conventional Thermal Methods vs Ohmic Heating"	**Dott. Dario Javier Pavon Vergas (UNIPR)**
	12.45 - 13.00			15'	Q&A		
	13:00 - 14:00	Lunch					
	14:00	Adjourn to laboratory session	Subdivision into 2 groups (GROUP A and B) of 14 people, who will go to the various labs and companies in rotation.				
	14:00 - 18:00	Hands-on activities (group A, B, C)	Lab and Pilot line activity	90'	Chemistry	Method of Analysis	**Rosaria Fragni (SSICA)**
				75'	Thermal stabilization	UH-MIX pilot-scale line	**Daniele Biancheri (CFT)**
				90'	Non-Thermal stabilization	Digital Twin e Filling Ultraclean	**Prof. Giuseppe Vignali e Dott. Giovanni Paolo Tancredi (Tecnopolo)**
				75'	Non-Thermal processing	HPP	**Claudia Cavazzini (HPP Italia)**
				90'	Microbiology	Yeasts and Molds (HRM) ACB (alicyclobacillus) TVC (total viable count)	**Dott.ssa Jasmine Hadj Saadoun (UNIPR)**
				75'	Thermal stabilization	Ohmic heating pilot line	**Antonio Aldini (JBTC)**
25 June	08.30 - 09.50	Theoretical lesson: 2 Topics	Non-thermal juice stabilization	40'	HPP	Technology action mechanism & equipment description + mathematical models for inactivation kinetics (pressure resistance)	**Prof. Pietro Rocculi (UNIBO)**
				40'	PEF	Technology action mechanism & equipment description + mathematical models for inactivation kinetics (electroresistance)	**Sveva Cesari (ELEA)**
	09.50 to 10.40	Theoretical lesson: 2 Topics	Filling and Packaging: technologies and materials	50'	Packaging materials: features, sustainability and influence on shelf-life	Glass	**Prof. Daniel Milanese (UNIPR)**
						Cartons	
						Cans	
						Pouches	
						Plastic	
	10.40 - 10:55			15	Q&A		
	10:55 - 11:25	Juice break					
	11:25-12:25	Theoretical lesson: 2 Topics	Filling and Packaging: technologies and materials	60'	Filling technologies inc validation	Aseptic	**Prof. Giuseppe Vignali (UNIPR)**
						Ultra clean	
						Hot fill	
	12.25 to 14:00	Lunch					
	14.00	Adjourn to laboratory session	Subdivision into 2 groups (GROUP A and B) of 14 people, who will go to the various labs and companies in rotation.				
26 June	08.30 - 10.30	Theoretical lesson: 4 Topics	Methods of Analysis and Various Legislations pre-screening (linked to juice processing)	50'	Juice Chemistry	Enzymatic browning Maillard reaction Oxidation Ascorbic Acid Degradation. Type of analysis to apply for assessment	**Chiara Dall'Asta (UNIPR)**
				40'	Method of Analysis	Reference methods Precision & trueness QA of analysis.	**John Collins**
					Authenticity	Industry codes (AIJN) Types of adulteration Testing scope Control systems	
				30'	Legislation	Pre-screening of allowed additives and processing aids in various legislation (CODEX, FDA, etc)	**John Collins**
	10.30 to 10.45				Q&A		
	10.45 - 11:15	Juice break					
	11:15 to 12.45	Theoretical lesson: 2 Topics	Nutritional aspects linked to juice processing	45'	Nutrients preservation in juices processing	Review of Meta paper and guide on content	**Prof. Cristina García-Viguera (CEBAS-CSIC)**
				45'	Nutritional quality of juices	Variety of juices and their vitamins, minerals, and secondary compounds with proven biological activities like (poly)phenols and carotenoids	**Prof.ssa Letizia Bresciani (UNIPR)**
	12.45 to 13.00				Q&A		
	13:00 - 14:00	Lunch					
	14:00	Adjourn to laboratory session	Subdivision into 2 groups (GROUP A and B) of 14 people, who will go to the various labs and companies in rotation.				