

Basic Dairy Science and Sanitation -
 Prerequisite to a Certificate Program in Dairy Foods Processing
Cornell University, Department of Food Science
Stocking Hall, Ithaca, NY

Day 1 – February 11, 2014 Basic Concepts in Dairy Science & Processing

Time	Topic	Presenter
8:00am	Registration & Coffee	
8:30am	Welcome & Introductions <ul style="list-style-type: none"> • Course Objectives • Pre-test 	<i>Tristan Zuber</i> <i>Kim Bukowski</i>
9:00am	Dairy Industry Overview and Regulations <ul style="list-style-type: none"> • Dairy Production and Products • Code of Federal Regulations • Pasteurized Milk Ordinance • Food Safety Modernization Act • USDA's Role 	<i>Tristan Zuber</i>
9:45am	Break	
10:00am	N.Y. State Agriculture and Markets - Overview	<i>Chris Hylkema</i>
10:45am	Composition of Milk <ul style="list-style-type: none"> • Chemistry of Milk • Nutrition of Milk 	<i>Tristan Zuber</i>
11:30am	Lunch	
12:30pm	Basic Dairy Microbiology – Part 1 <ul style="list-style-type: none"> • Classes of microorganisms - <i>the good, the bad, and the ugly</i> • Intrinsic factors for microbial growth and control • Sources of microbes in the dairy world 	<i>Steve Murphy</i>
1:30pm	Dairy Food Safety – Pathogens and Dairy Products <ul style="list-style-type: none"> • Overview of illness causing microbes • Raw milk and foodborne illness • Case studies in dairy food outbreaks 	<i>Rob Ralyea</i>
2:15pm	Break	
2:30pm	Group Activity - What is an SOP and how to write a proper one	<i>Kim Bukowski</i> <i>Tristan Zuber</i>
3:30pm	Break	
3:45pm	Basic Dairy Microbiology- Part 2 Dairy starter cultures & spoilage microorganisms - <i>the good & the bad</i>	<i>Steve Murphy</i>
4:30pm	Questions and Adjourn	

Day 2 –February 12, 2014 Unit Operations and GMPs

Time	Topic	Presenter
8:00am	Day 1 Overview: Review and Questions	<i>Tristan Zuber, Kim Bukowski</i>
8:30am	Raw Milk Receiving <ul style="list-style-type: none"> • From Farm to Processing Facility • Standards for High Quality Milk 	<i>Tristan Zuber</i>
9:15 am	Unit Operations – Dairy Processing <ul style="list-style-type: none"> • Receiving raw milk to packaging • Process adjustment based on product 	<i>Kim Bukowski</i>
10:00am	GMP's - Personnel <ul style="list-style-type: none"> • Employee health, reporting illnesses • Personal hygiene • Traffic Control 	<i>Tristan Zuber</i>
10:45 am	Break	
11:00 am	GMP's – Plant & Premises <ul style="list-style-type: none"> • Site requirements, construction & approval • Construction & storage • Separation of functions, process flow • Equipment, pipe layout, drainage • Water, ice and air supply • Pest control 	<i>Kimberly Bukowski</i>
11:45 am	Process Control <ul style="list-style-type: none"> • Refrigeration & Pasteurization • Culture, pH, incubation, temperature, aging packaging and storage 	<i>Tristan Zuber</i>
12:30 pm	Lunch	
1:15 pm	Environmental Sanitation and Monitoring <ul style="list-style-type: none"> • Environmental monitoring/pathogen testing • ATP swabbing 	<i>Deanna Simons</i>
2:00 pm	Break	
2:15 pm	Plant Activities	<i>Kim Bukowski Tristan Zuber Tim Barnard Deanna Simons</i>
4:00pm	Food Safety Programs	<i>Kim Bukowski</i>
4:45pm	Questions and Adjourn	

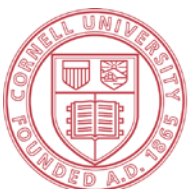
Day 3 – February 13, 2014 Cleaning and Sanitization Basics

Time	Topic	Presenter
8:15am	Day 2 Overview: Questions & Answers	<i>Tristan Zuber</i>
8:30am	Clean-In-Place/ Clean-out-of-Place Overview Identifying Sanitation Problems	<i>Ecolab</i>
11:30am	Course Wrap-Up/ Q+A & Exam	<i>Cornell University</i>
12:00pm	Adjourn	

Instructors

Tristan Zuber, Cornell University, Dept. Food Science
Kimberly Bukowski, Cornell University, Dept. Food Science
Deanna Simons, Cornell University, Dept. Food Science
Steve Murphy, Cornell University, Dept. of Food Science
Rob Ralyea, Cornell University, Dept. of Food Science
Tim Barnard, Cornell University, Dept. Food Science
Chris Hylkemia, NYS Agriculture & Markets
Ecolab

Persons attending and successfully completing this program will be given a Certificate of achievement in Dairy Sanitation. This program meets the prerequisite requirement for Certificates in Dairy Processing for Cultured Products, Cheese or Fluid Milk Products. Cornell Dairy Foods Extension Programs are supported by the NY State Milk Promotion Order



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