



Cider Production – Building Expertise

Tuesday 1st – Thursday 3rd December 2009

Aims: This advanced seminar series builds on *Cider Making – A Foundation* and aims to provide:

- Knowledge and understanding of cider microbiology & chemistry and key aspects of cider making technology;
- A detailed insight into the techniques, practice and application of sensory evaluation for commercial cider production;
- An appreciation of the principles and practices involved in product development, marketing and the development and operation of a successful commercial enterprise.

Day 1	08.00 – 08.20	Enrolment & Welcome
	08.20 – 08.45	Introduction & Opening Remarks – Building expertise from a foundation & considerations for commercial production.
	08.45 – 10.45	Cider Microbiology (I): General background. Cider yeasts and bacteria. Microbial contamination & spoilage. Microbiological QC methods and application.
	10.45 – 12.15	Workshop & Practical: Sensory Evaluation of Cider & Perry (I). Styles of cider & perry. Objectives of sensory analysis, test conduct, understanding sensory analysis. Use of flavour wheels and attribute tables. Product profiling.
	13.00 – 14.15	Product Development (I): Background to NPD in cider production. Product recipes & specifications.
	14.15 – 17.30	Practical: NPD Project - blending and product make-up trials.
Day 2	08.30 – 09.30	The Chemistry of Cider (Key aspects): Phenolics. The flavour of cider.
	09.30 – 11.00	Key Processes & Technologies for Cider Production (I): Milling & pressing – maximising efficiency. Use of enzymes. Pumping and pump selection.
	11.00 – 12.15	Practical: Sensory Evaluation of Cider & Perry (II). Product profiling. Organoleptic faults
	13.00 – 14.15	Cider Microbiology (II): Fermentation yeast management & nutrition. Application & management of malo-lactic fermentation in cider production.
	14.15 – 17.30	Practical: Blending and product make-up trials (Cont). Application of laboratory analytical methods & development of product profiles and specifications
Day 3	08.30 – 09.30	Key Processes & Technologies for Cider Production (II): Filtration. Application of fining.
	09.30 – 10.30	Microbiological Control in Cider Production (I): Chemical preservation and the use of SO ₂ . Pasteurisation and sterile filtration.
	10.30 – 12.00	Microbiological Control in Cider Production (II): Plant & equipment sanitisation. CIP. Detergents & Disinfectants. Hygienic production - Plant layout & design and equipment selection for hygienic production.
	12.45 – 14.00	Product Development (II): Adding value – In-bottle fermentation and cider vinegar production.
	14.00 – 15.00	Workshop: Quality Assurance. Specification of key Critical & Quality Control Points.
	15.00 – 16.00	Practical: Sensory Evaluation of Cider & Perry (III). Hedonic tests & consumer evaluation
	16.00 – 16.30	Summary & QA

Please note the following:

- A comprehensive course booklet is provided, but do also bring note-taking materials.
- Please bring any samples of cider or perry you have for use in the sensory analysis sessions – including any “problems” products.
- A key part of the course is a “Product Development” project. Details of this are enclosed with this programme. Each group will be assigned a specified market segment for which to design a product. Please start thinking about this – specifically in respect to the 1st item listed under the work to be carried out.
- As the sessions involve you undertaking sensory analysis (Cider “Tasting”), it is important that you do **not** use perfume and any strong-smelling cosmetics, deodorants or soap on the days of the course. **Thank you!**