CSIRO food innovation centre

**Food drying technology short course**

Program1

**Tuesday 28th February 2023 – Day 1**

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| 8.30 am | Welcome and introduction |  |
| 8.45 am | Dried products and their quality  | Dennis Forte, Dennis Forte & Assoc  |
| 9.20 am | Drying systems used in the food industry | Dennis Forte, Dennis Forte & Assoc |
| 10:00 am | **Morning Break** |  |
| 10.20 am | Basic drying theory | Dennis Forte, Dennis Forte & Assoc |
| 11.10 am | Water activity: Basic concepts & sorption/desorption isotherms, methods of measurement | Dennis Forte, Dennis Forte & Assoc |
| 12.00 pm | TBC |  |
| 12.15 pm | **Lunch** |  |
| 12:45 pm | Water activity: relevance to food stability and the drying process | Dennis Forte, Dennis Forte & Assoc |
| 1.30 pm | Principles of mass and energy balances as applied to drying processes (Exercise: Using mass and energy balance techniques to analyse simple drying system) | Dennis Forte, Dennis Forte & Assoc |
| 2:30 pm | **Afternoon break** |  |
| 2.50 pm | Principles of psychrometrics, tracing a drying process on a psychrometric chart | Dennis Forte, Dennis Forte & Assoc |
| 3.30 pm | Mass & energy balance applied to a more complex drying system : A case study | Dennis Forte, Dennis Forte & Assoc |
| 4.15 pm | Dryer Performance Comparison: Mass & Energy Balance | Dennis Forte, Dennis Forte & Assoc |
| 4.45 pm | **End of day 1** |  |

1. The following program may be subject to minor change

**Wednesday 1st March 2023 – Day 2**

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| 8.15 am | Start of day 2  |  |
| 8.15 am | Modelling the drying curve (practical measurement/modelling of product drying curve and how it can be used) | Dennis Forte, Dennis Forte & Assoc |
| 9.00 am | The use of dimensional analysis to optimise a drying process (an industry case study) | Dennis Forte, Dennis Forte & Assoc |
| 09.45 am | **Morning break** |  |
| 10.05 am | Specialised drying systems  | Darren Gardiner and Henry Sabarez, CSIRO  |
| 11.00 am | Clextral innovative drying technology | Camille Challard, Clextral Pacific |
| 11:15 am | *Pilot plant visit* |  |
| 12.15 pm | **Lunch** |
| 12:45 pm | **Option 1:**Case studies of a range of drying technologies (fluidised bed, heat pump, vacuum/freeze)Dennis Forte, Dennis Forte & Assoc and Henry Sabarez, CSIRO | **Option 2:**Spray drying technologyDarren Gardiner, CSIRO |
| 2:30 pm | **Afternoon break** |  |
| 2:45 pm | Improving efficiency of established drying processes – a case study | Dennis Forte, Dennis Forte & Assoc and Henry Sabarez, CSIRO |
| 3:30 pm | Drying Process – economic analysis | Dennis Forte, Dennis Forte & Assoc |
| 4:00 pm | **Course close** |  |