



## The Australian Dairy Industry is a significant world producer and contributes about \$12 billion to the Australian economy each year.

Australia is highly competitive on a world scale and any productivity and efficiency gains a manufacturer can make will be directly reflected in a company's bottom line. At MIPAC, we offer a range of process control services and solutions. Our experience clearly demonstrates, that our solutions result in, higher yield, increased productivity, reduced waste and greater energy savings.

### Evaporation

Start-Up is a critical production phase – an incorrect start-up will result in a greatly reduced production cycle. MIPAC can assist by automating the start-up procedure to prevent solids targets being overshoot. By monitoring critical inputs and bringing the evaporator effects up to operating conditions in a controlled manner and in the fastest possible time, the production cycle is optimised.

Accurate flow and temperature control of the **Feed Rate to the Pre-Heater** will ensure less build-up and plugging of the calandria tubes; resulting in increased production cycles and reduced cleaning time. Our control strategies are customized to your evaporator, creating higher efficiency than 'out the box' offerings.

On-line measurement of **Total Solids** can be of great use in controlling the overall effectiveness of the evaporator. Product solids concentration can be manipulated by various control strategies depending upon the set-up of your evaporator and your required outcomes.

**Vacuum Level** can be controlled in a number of ways. MIPAC finds the best solution for your operation, depending upon your evaporator and the results you are trying to achieve. Vacuum level determines the boiling temperature in each effect and although often fixed by mechanical means can be considered to improve overall operation of the evaporator. Other opportunities to improve evaporator control lie with **Finisher Control, Balance Tank Level, Vapour Recompression and Condensate Return Quality**. MIPAC can create control strategies for these areas based upon your requirements and Key Performance Indicators (KPI's) – there's no such thing as an 'off the shelf' solution because every plant not only has vastly different equipment but usually unique performance objectives as well.

### Spray Drying

The spray drying principle is simple enough – remove moisture from a concentrate by using a heated airflow. In practice, however, there are many factors which interact and influence the final result.

MIPAC understands **Concentrate Feed Rate &**



**MIPAC** is a respected provider of process control, instrumentation and electrical engineering solutions to major, complex process and production facilities. MIPAC specialises in industries such as minerals and metals processing, pulp and paper, and food and beverage. MIPAC employees are some of the industry's most talented process control engineers and we have worked on more than 100 projects in over a dozen countries.

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**Temperature, Inlet Temperature and Relative Humidity and Feed Solids** all contribute to the quality of the product entering the Fluid Bed. By monitoring some or all of these parameters a predictive model can be created to provide optimised control, which will allow you to run the dryer closer to its capacity. MIPAC can eliminate the threat of particle over-heating, improve energy efficiency and achieve better agglomeration.

Spray drying is energy intensive and by improving the thermal efficiency a direct corresponding reduction in steam use can be realised. The **MIPAC Process Advantage™** program can identify measures that will improve thermal efficiency of the drying process.

MIPAC appreciates the importance of **Fluidised Bed Dryers** in achieving staged drying and the resulting improvement in particle quality. Fine control of temperature, de-humidification and air efficiency is required to meet the Fluid Bed objectives.

### Boilers

Providing adequate steam on demand with maximum efficiency is critical to the operation of your plant. MIPAC has long-term experience in improving the operation and control of boilers to ensure when there is demand, steam is delivered. Efficiency is maintained when demand drops off.

***MIPAC Process Advantage™** can benefit a number of other areas within the dairy process including Standardisation, Pasteurisation, Cheddaring, Clean in Place (CIP), Energy Efficiency, Lecithination and Water Treatment.*

### Plant Wide Approach

MIPAC offers a plant-wide approach to control and automation. Many plants are made up of packaged processes (evaporator, dryer, standardiser, homogeniser, etc) which usually have their own Programmable Logic Controller (PLC) system built-in and which do not necessarily communicate with each other or to a centralised control system. MIPAC specialises in the design and engineering of control systems, so you can rest assured that any improvements we make to your plant will be available throughout the plant – either now (if you have a centralised SCADA or Distributed Control System) or will be futureproofed if you introduce a plant-wide control system later on.

### MIPAC Process Advantage™

**MIPAC Process Advantage™** is the application of process knowledge and appropriate automatic techniques to stabilise and optimise industrial process. At MIPAC, we combine our experience with your process knowledge to collaboratively reduce variability and inefficiency, whilst improving consistency and increasing yield. **MIPAC Process Advantage™** can be applied at any level in a control hierarchy from basic regulatory control to plant wide economic optimisation strategies. Business success in a processing or production operation is directly related to how well assets are deployed and used to generate profits. **MIPAC Process Advantage™** ensures we have a good understanding of your plant operations and that we deliver the most appropriate strategies and tools to operate your plant assets as efficiently and profitably as possible.