



# The Dairy Farm – where it all begins





Cows are housed in a sand bedded free stall barn and are fed a balanced TMR.





We suggest that all dairies have and follow a comprehensive management plan so, all of our cows are under the care of the local veterinarian and undergo routine herd health checks, appropriate vaccination schedules and an integrated feeding plan to maximize production and immune support.





Cows are exposed to an individual stress.





All fresh cows are housed and milked separately from the rest of the herd.  
The milk of each cow is collected individually.





Traceability is maintained by identifying each pail by cow number and environmental exposure. These pails are then frozen and stored for transportation to the processing plant.





When the collection process is completed, the milk is transported to the processing plant located in Waukon, IA.





# The Processing Plant







Milk is received at the processing plant frozen in the plastic pail from the dairy. Each pail remains marked or tagged and retains this identification until further processing.





Milk is stored in the plant freezer. Each cow's production is maintained separately from the others.





When needed, milk is transferred to our production area until thawed.





The curd is separated from the whey. The whey is then pasteurized, cooled and placed back in clean pails. The product is then refrozen; the product continues to be identified as to its source and processing stage.





When a batch of product is scheduled for production. The appropriate formula sheet is consulted and pails removed from the freezer to meet the formula needs. The appropriate pails are removed from the freezer and the thawing process at room temperature begins. We complete the thawing process by transferring this product to a heat vat.





The product being made delegates the next steps in the process:

- a. Filtering, preserving and stored for bottling or,
- b. Filtering, concentrating and transferred to the drying plant for drying.





The bottling takes place in this Clean Room. The environment is controlled by supplying HEPA filtered quality air into the room. The radiation sterilized bottles are received into the plant in self contained modules and are not opened until they are ready to be filled.





The whey is sterile filtered and the bottles are filled and stoppered under the HEPA filter.







After bottling is completed each lot of product is sent off to a separate lab where it goes through a standard sterility checking procedure to ensure the product at this point is free of microbial, fungal or mold contamination.





# Dried Feed Products





After the Impro whey has been dried it is returned to the Impro plant for storage.





When a new batch of product is needed such as MVP Dairy Boost, the appropriate amount of dried whey is measured out and a purchase order is placed with the custom manufacturer that makes this product. Since we consign a number of ingredients for most of our feed products a batch sheet goes with each shipment showing all the details of what has been ordered and what we are supplying for the order.





Once the product has been manufactured it is returned to our plant where it is stored for shipment to our distributors and dealers.



# Paragon Spray Drying





Product is thawed at the Impro Plant and then cooled and transferred through clean, sanitary hose to the adjacent drying plant.



The product goes into the vat pasteurizer where it is pasteurized and then is pumped into the high pressure pump balance tank. From there it is pumped through a high pressure line, through the spray nozzle at the top of the dryer.







3,000 CFM of air is heated to  $>380$  degrees F and enters the top of the dryer where it hits the product being atomized by the spray nozzle at  $>3,000$  PSI.





The liquid whey is dried almost instantly into a fine, free flowing powder..





The powder is transported via pneumatic conveying lines into the receiver bag house and from there it is dumped into a sifter screen and then is placed in clean, clear plastic bags. The bags are sealed and placed in cardboard boxes and are staged for return to the Impro Plant.

