

DAIRY PLANNER

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C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump, KARNAL - 132001 (Haryana) INDIA
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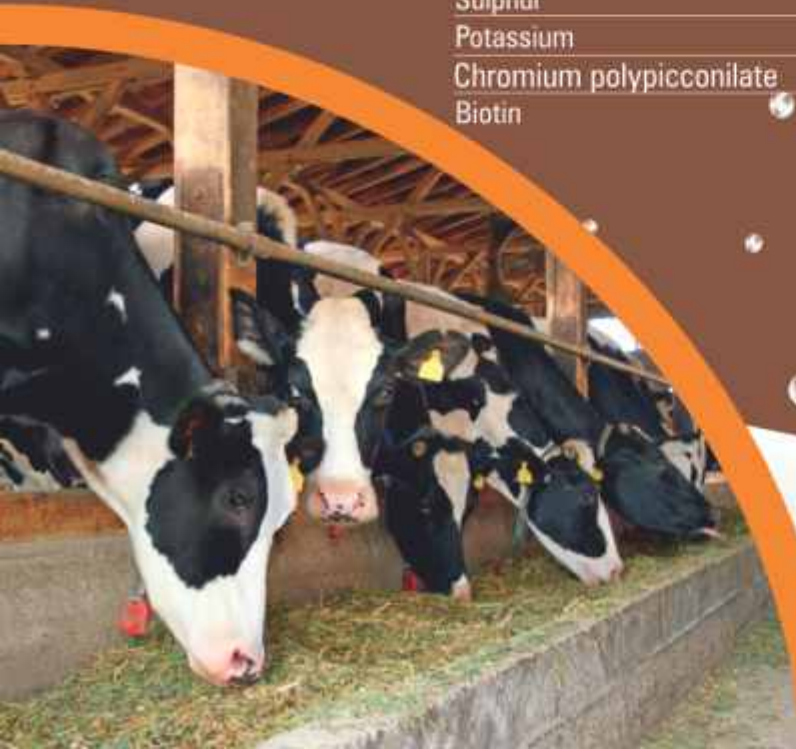
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Disease Prevention in Cattle

Animal Diseases lead to mortality and reduced productivity in dairy herds. Tuberculosis, brucellosis, Johne's disease, Bovine virus Diarrhoea are examples of infectious diseases that can severely affect the viability of a cattle enterprise. Adverse effects of infectious diseases can occur at the farm or industry level. Some diseases may severely limit or eliminate animal marketing options (for example: to slaughter only).

Disease prevention in a dairy herd requires more than keeping cows up-to-date on vaccinations, controlling parasites and maintaining a clean facility. Change in weather systems and climate can profoundly influence the distribution of vectors for important pathogens. International transport of animals and animal products has the proven potential to introduce disease into areas in which it was not present. Practicing good biosecurity measures greatly reduces the risk of disease transmission in the herd.

Vaccines & antibiotics have been mainstays of infectious disease control for many years. For several diseases, there are no effective vaccine or antibiotics available. But antibiotics and vaccines cannot replace biosecurity programs, though for some diseases (IBR, BVD) they are necessary and reduce disease when used properly. However, limiting the movement of animal and contact is an obvious way to reduce the introduction of new agents or their spread on the farm.

Vishal

OUR TEAM

Vishal Raj Gupta
Managing Director
vishal@pixie.co.in

Siddhi Gupta
Co-Editor
siddhi@pixie.co.in

Bhavana Rai Gupta
Editor-In-Chief
editor@pixie.co.in

Parth Rai Gupta
Director

Priyanka Patlan
Co-Editor
M: 999 170 5007
editor.pcsl@gmail.com

Paras Sabharwal
Business Development Manager
M: 999 170 5005
poultry.pcsl@gmail.com

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Office :
Pixie Consulting Solutions Ltd.
C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump,
KARNAL - 132001 (Haryana) INDIA
Email : dairy.pcsl@gmail.com | info@pixie.co.in
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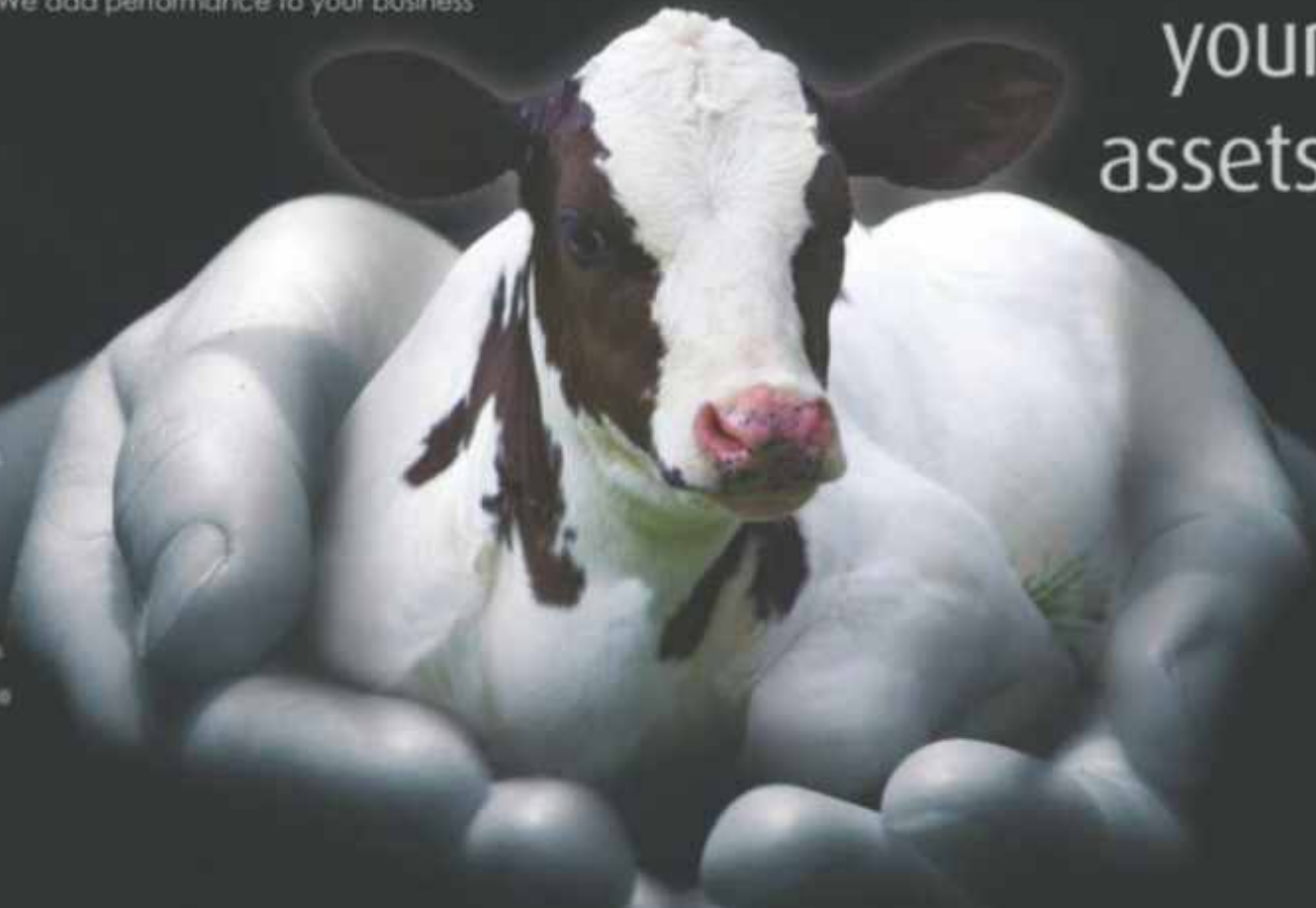
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Probiotics as a Tool to Prevent Diseases in The Dairy Cattle Herd

Bruno Ieda Cappellozza

¹Bruno Cappellozza, Ph. D., is the Global Technical Product Manager for Probiotics in Beef & Dairy Cattle for Chr. Hansen.

²Oscar Queiroz, Ph. D., is the Global Product Manager for Probiotics in Beef & Dairy Cattle at Chr. Hansen.

Introduction

Beneficial bacteria are an integral part of the gastrointestinal tract (GIT) of all species, including humans and ruminants, being known as 'gut microbiome'. This complex group of microorganisms presents key roles to the maintenance of the GIT, such as immunity, and consequently, impacting directly the health of this organ and the welfare of the herd. Nonetheless, some periods or specific situations within the productive stage of a ruminant animal might lead to a disturbance in the balance of this group of bacteria and in the GIT, such as environmental contamination and ingestion of pathogenic microorganisms, abrupt dietary changes with no adaptation or an adequate preparation of the rumen environment, restriction of water and food for a period of time, uncontrolled



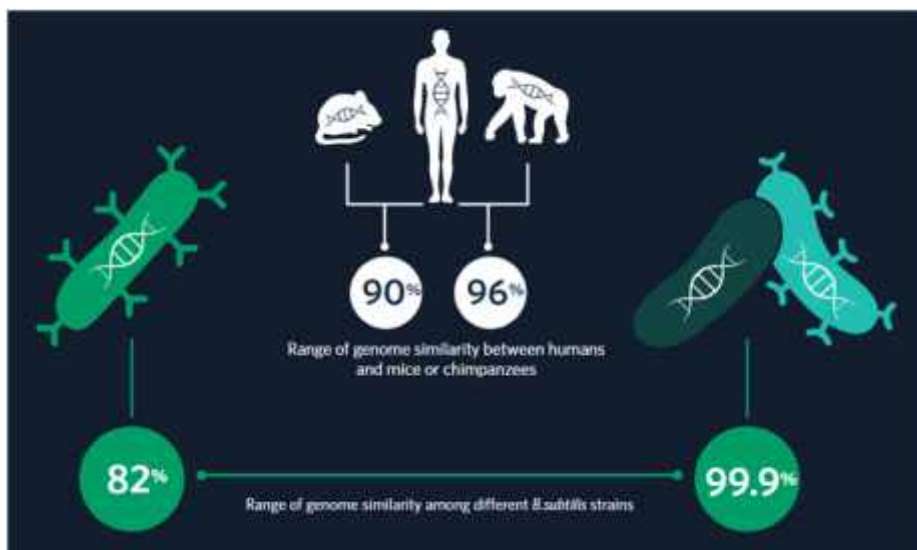
use of antibiotics, which in turn, might lead to the occurrence of diseases, such as diarrhea and leaky gut. This scenario becomes even more important when we think about the newborn dairy calf, which is facing a completely new environment and still is in the process of 'creating' its immunity against the pathogens that might face later in life. Part of this immunity problem can be counteracted by the provision of an adequate amount and quality of

colostrum, as colostrum immunity is an essential part of enteric disease management, and all calves should receive high-quality colostrum (greater than 50 milligrams IgG per milliliter) within the first few hours of birth (4 – 12 hours). While colostrum is one of the most critical management practices, we need to look at other management practices that help keep calves healthy throughout the pre-weaning and weaning period.

One of these management practices includes the daily use of research-proven probiotics, which has increased in popularity among dairy producers to improve digestive function and health, as well as an alternative therapy that helps to reduce the use of antibiotics through prevention of illness and, thus, reducing the emergence and spread of antibiotic-resistant bacteria and residual antibiotics in milk that the human population will consume. But, before we start, it is important to define the term probiotics and how they can benefit the host.

Definition and attributes of probiotics

Generally speaking, probiotics are



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defined as 'live microorganisms that, when consumed in adequate amounts, confer a health benefit to the host'. Besides this definition, a practical one would be that 'probiotics are a tool to improve health and performance of the livestock through the inhibition of pathogens and improvement of feed digestion'. The World Health Organization and Food Agricultural Organization also identified a set of features that a strain must contain to be considered a probiotic:

- (i) To reach its proposed site of action, surviving the physiological challenges and conditions often faced in the GIT, including pH ranges, presence of bile salts, and digestive enzymes,
- (ii) To prove its benefits with an absence of risk for the host, and
- (iii) To maintain its physiological properties and remain stable during the feed/supplement manufacturing process, being paramount and dictating the strain type to be used and included in the dairy calves' supplements.

Probiotics: Mode of Action

Several modes of action have been proposed to probiotics, stabilizing and promoting an adequate function of the GIT, thereby improving nutrient

absorption, performance, and overall health and welfare of the ruminant animals. Modes of action include:

- a. Some strains can block the entry of pathogens into the epithelial cells by providing a physical barrier against these pathogenic microorganisms, in which is referred as colonization resistance.
- b. Probiotics can stimulate the release of mucus from goblet cells in the GIT and, consequently, the mucus barrier that prevents the interaction of the pathogen and the intestinal epithelial lining.
- c. Production of antimicrobial compounds (i.e., enterocin and lichenysin) that can kill pathogenic organisms in a direct manner.
- d. Competition for substrates that could (potentially) be used by pathogenic bacteria or protozoa for growth and replication.
- e. Support of the tight junctions in the intestinal cells, preventing the occurrence of leaky gut caused by toxins, pathogenic bacteria/ protozoa, or undigested food.
- f. Signaling to dendritic cells that will support local (gut) innate immunity.
- g. Prevention or triggering of an innate immune response by interacting with

specialized cells that are associated with the digestive tract.

- h. Some probiotic strains are able to produce enzymes that increase nutrient degradation in the GIT, which in turn will benefit the host and also the bacteria that can use such nutrients for growth and replication.

Altogether, these modes of action help reduce the presence and potential damage that pathogenic microorganisms can cause in the host, strengthening and hastening the immune system response when such challenges are faced, and ultimately, improving the health and performance of the herd.

Bacillus spp.: A novel combination of strains to promote the health of the dairy cattle herd

Among the most well-known and research-proven bacterial probiotic strains, Lactobacillus spp., Enterococcus faecium, and Propionibacterium spp. deserve to be highlighted. However, other strains have been evaluated and proven to be effective as probiotics, supporting even additional modes of action that will benefit the host. Among these newly-researched strains are the Bacillus spp. and, more specifically, Bacillus licheniformis and Bacillus subtilis. Bacilli are ubiquitous soil bacteria that perform a variety of functions in the natural world, being included into the monogastric segment for over 25 years with tremendous benefits to the health and productivity of swine and poultry. The main reasons Bacillus-based probiotics have been extensively used for monogastrics is due to their spore-forming characteristic and thermo-resistance ability, making it a feasible strain to be included into pelleted feeds, milk replacers, mineral-vitamin mix, and any other liquid or solid supplement type.

Additionally, several experiments in ruminants also support the utilization of Bacillus spp. as probiotic sources for these animals. European researchers demonstrated that B. subtilis and B. licheniformis supplementation during

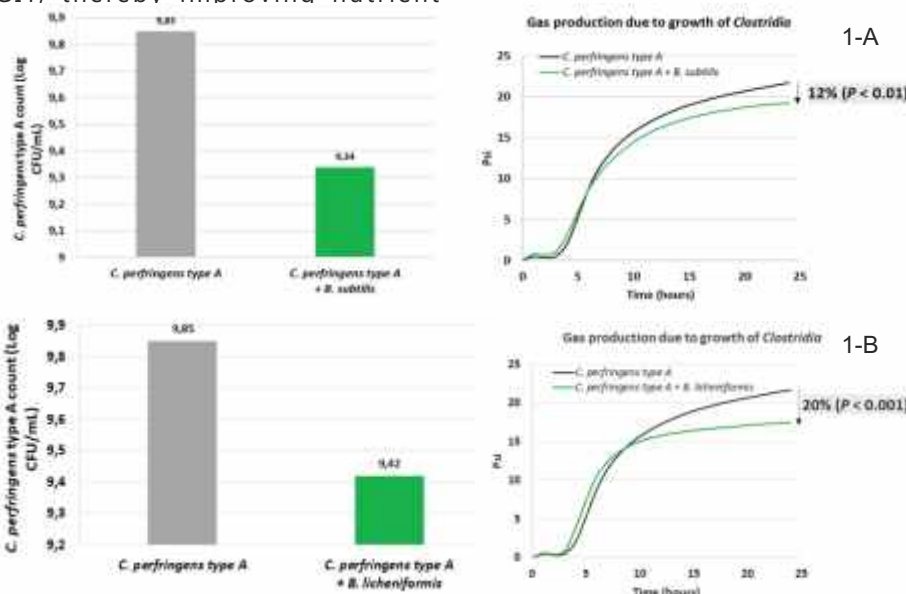


Figure 1. Inhibitory effects of B. subtilis (1-A) and B. licheniformis (1-B) on C. perfringens type A counts and gas production. A reduction of up to 69 and 20% were observed on counts (colony forming units per mL) and gas production (psi), respectively. Trial conducted internally by Chr. Hansen (Horshoelm, Denmark).

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the pre-weaning period yielded a greater average daily gain (+ 50 g) and daily starter intake (+ 130 g) during this period, as well as heavier calves at weaning (+ 2.9 kg). These benefits of *Bacillus* supplementation could be a combination of (i) a greater health in the GIT during the early trial period, where milk is the main calf feed and the gut is the site where all the nutrients and pathogens are detected and (ii) a greater rumen development, leading to a more efficient nutrient absorption and health.

Research trials conducted by Chr. Hansen evaluated the effects of *B. subtilis* and *B. licheniformis* on in vitro growth and gas production of *Clostridium perfringens* type A, a well-known pathogen causing important health and performance losses to the dairy calves. Counts (colony forming units per mL) and gas production (psi) of *C. perfringens* type A were reduced by up to 69 and 20% when *Bacillus* strains were incubated with the pathogen (Figures 1-A and 1-B). A subsequent in vivo trial with pre-weaning Holstein calves also evaluated the effects of both *Bacillus* strains against *C. perfringens* type A. Supplementing a combination of *B. subtilis* and *B. licheniformis* yielded a greater proportion of animals with a normal diarrhea score and a greater survival rate vs. untreated calves (Figures

2-A and 2-B), demonstrating the direct inhibitory effects of these *Bacillus* strains against *C. perfringens* type A. Moreover, the encounter of a specific pathogen might only be the entry door of other pathogens to start damaging the intestinal and overall health of the dairy calf. In this sense, possible inhibitory effects of *B. subtilis* and *B. licheniformis* were also evaluated in an in vitro trial against pathogenic *Escherichia coli* O157. *Bacillus subtilis* reduced the binding of *E. coli* in the intestinal cell by 49%, whereas the reduction was in the order of 76% when *B. licheniformis* was evaluated, corroborating to the modes of action of probiotics against varied pathogens.

It is extremely important to reduce the prevalence of GIT infections in young calves because when animals are sick at this stage, their subsequent growth is impaired, thus affecting their future productivity. Research from Cornell University estimates that pre-weaned calves treated with antibiotics produce around 500 kg less milk in their first lactation as compared to healthy calves. A separate study from Cornell University reported that the average treatment cost (medicine only) for diarrhea per calf was \$1.12 (approximately 85 Indian Rupiah) and a trial from Brazil reported a cost of

\$1.51 (approximately 115 Indian Rupiah). This information confirms that calthood illness during the pre-weaning period is expensive and has a long-lasting impact on the profitability of the dairy operation.

Lastly, the *Bacillus* spp. are able to synthesize and release a wide array of enzymes that will improve fiber and starch digestibility, for example. An in vitro trial conducted at the University of São Paulo (Brazil) demonstrated that 48-h neutral detergent fiber digestibility increased by 22%, whereas 12-h starch digestibility of corn and sorghum increased by 11% when *B. subtilis* and *B. licheniformis* were inoculated into the substrate, demonstrating the ability of these strains to produce enzymes that favor nutrient digestibility and performance of the dairy cattle herd.

Following all these results and the benefits of *Bacillus* spp. in promoting the health and performance of dairy calves, Chr. Hansen launched Bovacillus™, a unique *Bacillus*-based probiotic containing a mixture of *B. subtilis* and *B. licheniformis*, that can be fed to calves and cows in all types of supplements, ranging from a total mixed ration and up to a milk replacer and pelleted supplement.

Strains Matter and the value of research

Commercial products are not the same across all brands and companies select their own strains of bacteria for specific purposes and targets. In this sense, two companies might use bacteria that fall into the same classification and have the same scientific name, and yet, each strain will have its traits and uniqueness related to the selection criteria made by the company.

Ultimately, the value of any probiotic is the research demonstrating its efficacy across various scenarios and challenges. When deciding on adopting a probiotic technology, it is essential to do it based on the available research for the specific product.

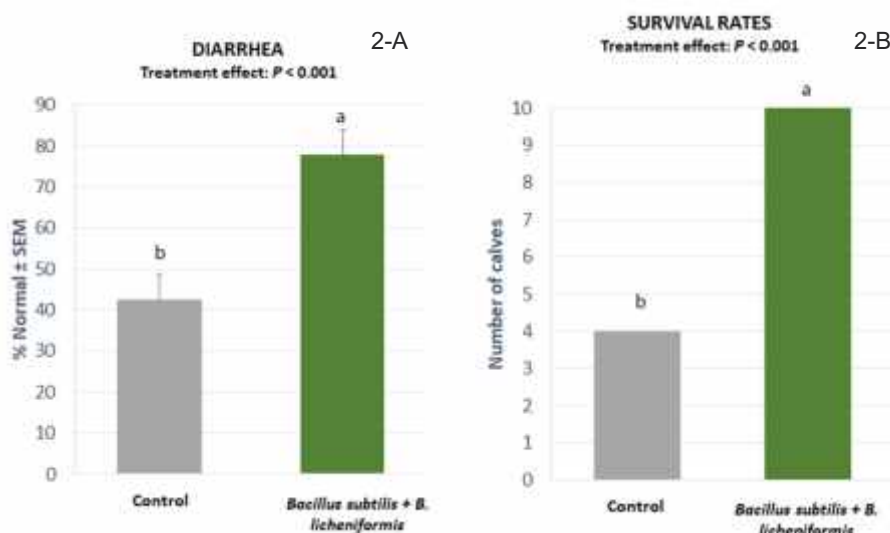


Figure 2. Effects of feeding a combination of *Bacillus subtilis* and *B. licheniformis* to pre-weaning Holstein calves on diarrhea occurrence (2-A) and survival rates (2-B) caused by *C. perfringens* type A.



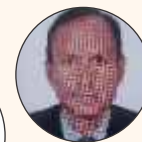
Methods of Heat Detection in Bovines

Mohit Mahajan¹, Shiv Prasad² and Gaurav Tevatia³

¹PhD Scholar, Department of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, GBPUAT, Pantnagar, Uttarakhand 263145, ²Professor, Department of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, GBPUAT, Pantnagar, Uttarakhand 263145, ³MVSc Scholar, Department of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, GBPUAT, Pantnagar, Uttarakhand 263145
*Corresponding author- mohitmahajan108@gmail.com



Mohit Mahajan



Shiv Prasad



Gaurav Tevatia

Introduction

For successful economic return in the dairy and meat industry, breeding of the productive stock is paramount and thus dependent on effective heat detection in large animals where artificial insemination is widely practiced; it is one of the most important limiting factors for better reproductive efficiency. It is a very critical to recognise that each missed heat is equivalent to 21 days loss and production. As it is a labor-intensive and time-consuming method, success depends on the abilities, skill, approach, and attitude of dairy farmworkers. The overall reproductive efficiency of the farm depends on, how soon after calving, the cow come into heat and success of first or subsequent insemination as the ultimate goal of heat detection is to predict actual time of ovulation so that an accurate time of insemination is planned for better conception rate. Heat detection directly affects calving interval and milk production thus; it can significantly increase the profit of a dairy farm. The traditional method has been based on visual observation of the animals but over the year's many advancements came into the field which has added to the basic knowledge of effective heat detection that led to significant improvement in conception rate especially in large animals after artificial insemination. There are various techniques for heat detection in farm animals

Observation Visually

It is the most common method of heat detection in large animals which is dependent on observable signs exhibited by individual animal like frequent urination, separation from herd, chin resting, back rubbing, nervousness,

restlessness, walking along fences, bawling, aggression, bellowing arching back, loss of appetite and sudden drop in milk production, licking, sniffing, head lift up, lip curling and flehman's reaction after touching the genitalia, tumefaction of the vulva, reddening of vulva, mucus discharge, closeness in animals coming into heat usually Congregates and form small groups of three to five animals called sexually active groups, postural alteration facilitates mating called sexual presentation for several seconds. Each observation period must be sufficiently long usually 30 minutes to be effective.

Teaser bull

The bull whose internal reproductive tract has been altered with a specific purpose i.e. the bull should be able to detect the animals in the heat but cannot deposit the semen into the reproductive tract or female; this can be done either by vasectomy or caudal epididymectomy. They are commonly known as vasectomised bulls used to aid in heat detection where heat detection rates are as high as 84 percent.

Ferning pattern

Cervical mucus secreted during estrus is collected and smeared on the slide, after drying if it shows more branching, it is considered appropriate for breeding.

Expected Heat and records

Heat expectancy charts are prepared on the basis of the last heat so that the expected next date may be calculated and particular animals are viewed closely for the exhibition of any heat symptom. It is simple managerial tool helping in detection of heat in bovines.

Identification using paints

Oil or water-based paints are applied on to the back of a cow's spine were most often rubbed by the brisket of the mounting companion cow.

Chin-ball markers

Bulls are used as marker animals and they are fitted with ball marking devices when such bull mounts on animals in estrus the chin presses down on the back or rump of the cow then spring in the device is pressed and the marker fluid is released and the mark can be seen on the rump or back of the animal.

Pedometers

The activity of the individual animal is monitored and recorded through a devise and data is analyzed. The animal experiencing the estrous cycle will show more activity compared to herd mates during the same period. Animals showing more activities are separated and confirmed for true heat.

Heat mount detector

It is a device that senses mounting activity and sends these signals to the receiver for further analysis. A cow is declared to be in heat if she shows mounting 3 times within 4 hours.

Per rectal examination of the genitalia

During estrus, the tonicity of the uterine horns increase significantly which remains different than pregnancy. Cervix become loose under the influence of estrogen hormone secreted in large quantities during estrus. After proper detection of heat, the standard AM/PM rule is followed for insemination which gives satisfactory results under field conditions.

Factors Affecting Quality and Quantity of Milk

Manoj Baghel¹ and Vandita Mishra²

¹Livestock Production & Management Section, ICAR – Indian Veterinary Research Institute, Izatnagar, Bareilly, U.P. – 243122

²Livestock Products Technology section, ICAR – Indian Veterinary Research Institute, Izatnagar, Bareilly, U.P. – 243122

Introduction

Milk is whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy milch animals, except that obtained within 15 days before or 5 days after parturition or such periods as may be necessary to make the milk practically Colostrum-free and containing the minimum prescribed percentages of milk fat and solids-not-fat. Chemically, milk is a colloidal suspension of fat, lactose and protein. At present, India ranks first in milk production all over the world. According to the National Dairy Development Board, Government of India, the total milk production in India is about 187.7 million tonnes per annum, of which Uttar Pradesh state has the highest share, which produces about 18 percent of the total country's milk production. Exotic animal contributes more to milk production with 7.95 kg/day/animal while indigenous animal have a yield of 3.01kg/day which are usually reared in the rural panorama. The daily milk consumption in the country also rose with high rate of 411gram/day per person which is far greater than the ICMR recommendation of 280gram/day per person. Uttar Pradesh is the state which is contribution highest to the milk production i.e. 16.3% followed by Rajasthan, Madhya Pradesh with



the milk production of 12.6% and 8.5%. Here we will have a glance regarding the factors affecting the quality as well as quantity of the milk.

Important factors affecting the quality and quantity of milk

Animal Species

The total livestock population in the country is 536.76 million and mostly cattle and buffalo are reared for milk production which contributes 48%, 49% respectively and rest 3% is procured from goat. In India, mainly milk is produced by buffaloes and cows; buffalo milk has a higher fat percentage than cow's milk. Cow's milk is more yellow in color than buffalo's milk, mainly due to the beta-carotene present in it.

Animal Breed

According to the National Bureau of Animal Genetic Resources, 50 breeds of cows and 19 breeds of

buffaloes are registered in India. Among Indian breeds, the milk production of Sahiwal, Gir, Red-Sindhi and Deoni breeds of cows is higher than that of other Indian breeds. Among the 19 breeds of buffalo, highest milk production is found in Murrah breed and highest fat percentage in milk is found in the milk of Bhadavari breed buffalo. And among the 34 registered breeds of goat in the country, mainly the milk production of Jamunapari breed is more than other Indian breeds.

Individual & genetic characteristics of animals

Differences in heredity or pedigree can lead to differences in the quantity and quality of milk production of two animals of the same species and of the same breed. The condition of udder and milk vein also makes a lot of difference in the milk production of the animals, in the animals having more milk yield, the udder is



uniform and larger in size and the milk vein is long and curved.

Lactating stage

There is a change in the quantity and quality of milk throughout the milking period of the animal. For example, the cow, whose milking period is of 305 days, the maximum milk production is found in about 60-90 days after the onset of milking period.

Parity of cattle

The parity of cattle has a great influence on milk production. The milk production of cow in the second-third parity is much more than any other parity in her whole production life.

Animal age and weight

The milk production of animals varies according to the age and weight of the animal, the milk production of very young and old animals is very less. And only after attaining a proper weight, the animal manifests its maximum milk producing capacity.

Animal health status

The milk production of the sick animal is the lowest among the entire herd of productive animals. Sometimes milk production becomes zero in the condition of some diseases. Examples of some of the main diseases affecting milk production of cattle are Mastitis, milk fever and ketosis disease etc.

Environmental Conditions

According to the change in the season, the quantity and quality of milk production of the animals also changes. During summer season the quantity of milk is less and the fat percentage in milk increases. On the contrary, during winter season, the percentage of fat in milk is on average less and the quantity of milk increases on average.

Quantity and quality of animal feed

The quantity and quality of animal feed has a profound effect on the quantity and quality of milk production of the animal.

If there is a decrease in the quantity and quality of animal feed per day, there is a direct reduction in the milk production of the animal.

Milking methods and time gap between two consecutive milking

Adopting the wrong process and method of milking (Knuckling) can reduce milk production of animals and worsen the health condition. The best method of milking by hand is the full hand milking method. For best milk production, a time gap of at least 10-12 hours should be kept between two consecutive milking.

Conclusion

The amount of milk a cow produces depends largely on the environment it's in. It's mainly related with comfort, and results in higher productivity. For maximum milk production from the animals, completely healthy, second-third parity of cattle should be selected from the breeds like Sahiwal, Gir, Red-Sindhi and for buffalo Murrah, Nili-Ravi, Surti and Mehsana etc. breeds should be reared. For proper milk production management, good quality grain and green fodder should be fed daily in optimum quantities and for proper management of animal diseases, the process of deworming and vaccination should be adopted at regular intervals and for milking of animals full hand method or machine method of milking should be done at about 10-12 hours time interval.





Common Farm Management Practices in a Dairy Farm: A quick review



Deepandita Barman

Dr. Deepandita Barman¹ and Dr. Arunoday Das²

¹Assistant Professor, Department of LPM, LCVSC, Assam Agricultural University

²Assistant Professor, Department of ARGO, LCVSC, Assam Agricultural University

In any farm the first and foremost criteria is to approach, handling and control of animals in a farm for which the necessities are shortlisted step by step and helpful for easy running of dairy farm.

A. Common appliances used are

Anticow kicker fitted on the Achilles tendon of hind legs for milking and udder examination. Bull nose ring attached to nasal septum, made of non-corrosive aluminium, copper or alloy is helpful to control the large animals and attach the lead ropes or bull leader/Bull pole of 1.5 m long. Bull holder can also be inserted in nostrils. Drinkwater's Gag can be used to keep the jaw open from right-left side made of aluminium to examine mouth whereas, the wooden gag made of flat wood with a hole is used to pass probe or stomach tube. The ropes are of two types such as cotton rope (a) For large animals: 2.5-3cm thick & 8 m long (b) For small animals: 1-1.5 cm thick & 2 m long (apply on feet & horn). Farmers are preferred to use Muzzle which is a basket like structure to prevent from biting. Trevis/Crush/stocks made of wood/metal tubing are

used for examination purpose and to restrain the animal for various purposes.

B. Approaching & Handling

Try to call/speak before touching. Approach from behind, left side, head and neck regions first. Best time is during milking. Use lasso/rope for insemination, injection, wound dressing, etc. Casting that is throwing animals on ground. Reuffs method (best) for large animals or alternative method, for sheep, Lintons gag or portable sheep stock used for restraining whereas for pigs, pig catcher or casting with ropes are usually preferred.

C. Identification of animals

Branding are used for cattle which includes two methods such as hot iron or chemicals. Numbers from 0-9 or letters from A-Z are used by maintaining the distance between two figures = 2.5 cm. The four quarters of the year are described as 1 (Jan, Feb, March), 2 (April, May, June), 3 (July, Aug, Sept), 4 (Oct, Nov, Dec). In the left thigh, month & year of birth whereas in the right thigh, herd symbol are used for identification. Tattooing are done on skin inside of ears. Black vegetable pigment insert into

tissues. For calves, sheep & goat, and pigs, tagging are preferred in which the tags/labels made of metal or strong plastic with numbers stamped on it. Ear notching were used before in pigs. Photographing is also used to get side view/ profile, rear & hind views.

D. General Management Practices

- **Exercising:** for normal metabolic process & maintenance of good health. Esply. breeding bulls: 120 square metre/bull or can use bull exerciser.
- **Grooming:** Brushing the hair coat. For cleanliness, massage & stimulate cutaneous blood and lymph circulation.
- Remove skin secretions, scurf, loose hairs, lice and skin parasites.
- Can use dandy brush, body brush or boiled damp cloth.
- **Bedding:** Keep animals clean and comfortable. Wheat straw, sugarcane bagasse, chopped grass or crop residues. Thickness: 10-15 cm
- **Dehorning:**
- **Chemical method:** Caustic potash (KOH)/ Caustic soda (Na₂OH)

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Mix "Nesure bypass protein" thoroughly with other feed ingredients.
Mix "Nesure Bypass Protein" thoroughly with other feed ingredients (i.e. Homogeneous mixing) more than 7% for better results depends upon animal capacity of milk. The best way is to consult with your Nutritionist.

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- ◆ Need for medium and high lactating and growing animals mainly in early lactation .
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- ◆ Reduce milk production cost .
- ◆ Low Methane emission .
- ◆ Decrease ammonia level in faces which improve health of animal & eco friendly as pollution point of view .
- ◆ Better cell synthesis after broken cells .
- ◆ Stabilization stress of animals during ration processed in stomach of animal .
- ◆ An increase in growth rate by 30 % to 40 % .
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- ◆ Better resistance against diseases .
- ◆ Help to control salmonella and reduce mould growth when used with cattle feed .
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- Hot Iron Method: Electric dehorning iron, used in any season, only for young calves.
- Dehorning saw and Clippers: Saw used in mature cattle
- **Elastrator:** Rubber ring, painful method if horns 5-10 cm long.
- Smaller horn fall off 3-6 weeks
- Larger horns fall off 2 months

E. Castration

It is the removal of testicles of male calves at 1 year age, during cold season. Burdizzo's castrator used for cattle/ Buffalo by pinching spermatic cord. Small burdizzo's castrator used for sheep & goat. Castrator knife has been used in sheep and goat and also in pigs is a surgical method

F. Disinfection

One should always swept passages (Dung Channel) regularly twice a day & Feed & water trough daily once and keeping the foot bath of 100 mm in depth, clean to avoid transfer of disease organisms.

Physical Disinfectants

Heat kills microorganisms by destroying cellular protein through oxidation. Use of flame guns (300°C) on floor, wall & surfaces can also be included in farm. It has been considered that the UV radiations from sunlight 4-5 hrs kill brucella organisms. Filtration with ions helps to reduce the microbes from air,

water and biological materials. Also, dessication method are useful to remove moisture has drying effect to kill.

Chemical Disinfectants

Acids and Alkalies such as 4% Boric acid, NaOH (1,2 & 5 %), CaOH (lime, slaked lime), Citric acid against FMD, Lactic acid can be used in slaughter houses. Aldehydes includes formaldehydes 5-10% for washing floor, Glutaraldehyde 2% used for instrument sterilization. Halogens such as gaseous chlorine, hydrochlorines, organic chloramines and Calcium hypochlorite (bleaching powder) with 25 litre of water, 5 % Phenol for floors, Iodine compounds are effective for teat dips. Phenols such as cresol (3-5 %), Lysol (3-5%), Thymol and hexachlorophene can be used against gram + and -ve bacteria. Detergent & Soaps can also be used.

G. Fumigation: Formaldehyde solution (Formalin) + KMnO₄ @ 15-20°C & RH 70-90%. To make 1 L formaldehyde solution + 650 gm KMnO₄ = 25 cubic metre area of building

H. Quarantine:

Separation/ segregation of new arrival apparently healthy animals being bought into the herd for 1st time, which have been exposed to the risk of infection, is called quarantine. The idea is to give sufficient time

for any contagious disease to show its active state and obvious, if the animal having. Quarantine period depends upon Incubation period of diseases (generally 30 days). Deworming during quarantine is a must on 24th/25th day subjected to dipping or spraying to remove ectoparasites. Quarantine for rabies is 6 months

I. Isolation

Arrival of new animals/Return of own animals from elsewhere. Separation of already stayed sick animals to protect the healthy animals is called isolation. It allows sick animals to rest and recover and prevents diseases spreading around pen, group or wider farm

J. Disposal of Carcass

It has basically two methods commonly practiced in farm are: Burial method: The pit should be dug that the highest part of carcass must be at least 1.5 m below the level of surrounding. Bedding used for disposal are excreta, feed left over and top 5 cm soil where the dead animal was lying. The burial place should be an area where the general water level is at least 2.5 m below the ground. Burning method: Burn preferably closely to death site without dragging or use trolley. Trench should be 0.5 m deep. First fill with wood, some iron bars across and then carcass

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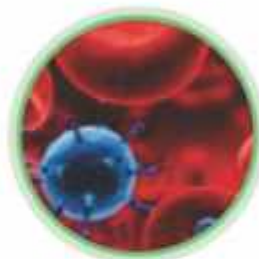
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New Age Technologies: A Boom to the Dairy Industry

Sachin Dongare¹, S. K. Singh², Chaitali Dongare³, Mohit Bharadwaj⁴, Sumit Gangwar⁵ and Manoj Kumar Singh⁶



Sachin Dongare



S.K. Singh

^{1,5} Ph.D. Scholar, Department of Livestock Production Management, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand

² Professor, Department of Livestock Production Management, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand

³ Assistant Professor, Department of Animal Husbandry and Dairy Science, Lokmangal Agriculture College, Wadala, M. P. K. V. Rahuri, M.H

⁴ Ph.D. Scholar, Department of Animal Nutrition, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand

⁶ Assistant Professor, Department of Livestock Production management, SVP UA&T, Meerut, U.P

Corresponding Author Email id- sachindongare12345@gmail.com

Introduction

The dairy industry in India works largely on procurement play. With an average of two cows each, dairy farmers have been the sole suppliers of milk to larger cooperatives and milk brands. In fact, most of the large brands we see are only processors and not producers of milk themselves. With businesses now setting up their own large-scale farms and owning cattle to become producers, the industry as a whole is going through major changes. By adopting the role of both supplier and producers, they are gaining an edge as they have complete control over the milk production, quality and efficiency. Since these boutique farms already have the cattle and the capital, the only thing required to make it a profitable business is the implementation of technology. It is amply clear that the demand already exists. There are certain aspects of farm management which if handled through technology can reduce costs and make operations efficient. A few of them are:

The Health of the Cattle

Getting a high yield from cattle depends entirely on their health. While tracking the health of a larger number of cattle at a farm can get tough, there are trackers in the market that work the way smart watches work. These trackers monitor the heart rate and other vital signs of the cow and analyzes its health. Some of these can

also track the heat period, and other aspects, just by analyzing their movement patterns. An overview of such health reports is available with the vets who help in quick response and action.

Anomalies in Milk Production

Near Field Communication, Radio Frequency Identification (RFID) and Bluetooth Low Energy (BLE) are technologies that have been in use for a long time to track the health of cows. Systems today provide animals with a unique identification number which helps track the animal's production and understands their health patterns. Using these existing technologies, hardware installed at farms, such as milking parlors, are able to ID the cow or buffalo. Once identified, its milk production is then matched with standard patterns and production history in order to understand and identify anomalies. Identification of such anomalies can help dairies reduce losses and increase production efficiency.

Field to Yield Impact

Fodder plays a very important role in milk production, as it has a direct impact on the quality and taste of milk. The feed constitutes the major cost of a dairy's operation. Hence, it is very important that the feed is of the best quality, to ensure a greater yield in terms of both quantity and quality. Milk processors in India pay the producers based on the fat level -

higher the fat content, higher the payout. These different aspects of the feed and the yield have to be documented by the dairy farms in order to get the required information and a better understanding of the feed to yield impact. This is possible only via a collective effort by the dairies, which can happen over a period of time when more and more dairy farms become digitized. It is something that we can hope to see in the near future.

Product Lifecycle Tracking

Since the margins for milk processors are higher in case of value-added products, tracking the lifecycle of milk, to the market and the quantity that comes back - within expiry range - can make a big difference. Milk that gets returned from the market while still within the expiry range can further be converted to products like, ghee, paneer, buttermilk, curd, etc. which reduces the losses significantly and also adds to the margin. Enabling tracking of the product lifecycle, like tracking the retailers who are carrying products which are about to reach expiry and collecting them in a timely manner, through an alert system can make great difference.

Last Mile Delivery

Since the milk producers and processors both play the scale game with low margins, saving costs on every front and increasing efficiency are very important factors. Last mile delivery includes dropping off milk



either to the retailer or to the household (in case of B2C). Both B2B and B2C deliveries require management of cold chain to avoid spoiled products and also to maintain quality. Tracking of logistics and route optimization along with temperature reporting are some simple options to do the same. In many cases, the pouches develop leaks, while the bottles and the crates used get damaged, leading to losses. These losses are not entirely avoidable, but understanding the root cause or identifying the problem areas can help in corrective measures being taken. The first step to solving a problem is recognizing that there is one.

Tech innovations for dairy operation

Gone are the days of low-tech livestock operations. From parlor monitoring systems to detection of hidden mastitis in your herd, companies are introducing technology that improves not only herd health but also your bottom line.

SCR heatime pro system

Power up your cow-monitoring capabilities with SCR Heatime Pro System. The PC-based system for real-time heat detection and health monitoring eliminates the guesswork and inconsistency of evaluating reproductive health, nutrition and well-being of every cow.



Milk Maven

Combining advanced hardware and software, Milk Maven uses sensors to continuously check pulsator health, milk, wash, glycol temperature and the vacuum pump. If Milk Maven detects any issues, a notification is sent to a computer or mobile device with a web browser, offering suggestions on the possible source of the problem. The cloud-based application, which is a division of Farm Maven, also lets you perform diagnostics of the milking phase ratios with the click of a button.

Cost is dependent upon size of parlor.



Rt10 SCC

With the RT10 SCC and iPhone app, you can easily identify high SCC or subclinical mastitis cows and make better decisions to lower your overall SCC. This SCC readings can be determined in seconds - without the expense and time of sending samples off to the lab.

- The device not only provides a cow's SCC but also indicates the type of bacteria most likely to have caused the high SCC, which can help in determining proper treatment.
- This tool allows you to export data into a spreadsheet or email a file to share with trusted advisers.

QSCOUT FARM LAB

- Undetectable to the naked eye, sub-clinical mastitis is often missed. Yet, it diminishes milk production and threatens herd

health. Annually, mastitis costs the U.S. dairy industry \$2 billion, or about \$200 per cow.

- It's time to challenge mastitis with a new breed of on-farm diagnostics: QScout Farm Lab. This portable diagnostic analyzer identifies and differentiates leukocytes (white blood cells) in milk. Each of the three blood cell types - macrophage, neutrophil, and lymphocyte - plays a role in fighting infection and each has a different function.
- Understanding their roles and ratios allows for more accurate detection of subclinical mastitis.



Farm to Table - Integrated Supply Chain Solutions by Mr. Milkman



India the largest producer of dairy in the world consumes 60% of its processed milk in the fluid form. With the market value of INR 11,357 Bn in 2020 it is expected to grow at a CAGR of 15.4% to reach INR 23,243 by 2026. Apart from state-owned or co-operative very few players have succeeded in breaking in the Indian markets.

In 2021, America's leading dairy technology, services, and intelligence provider - Dairy.com marked their entry into the Indian industry by acquiring 100% stake in Mr. Milkman to strengthen its integrated supply chain solution offerings for dairies worldwide.

Founded in 2017, Gurugram-based Mr. Milkman is a state-of-the-art SaaS based supply chain platform that helps dairy companies in managing production and other operations. It empowers dairies to manage customer subscriptions and deliveries. From dairy farms to the customers' glass, Mr. Milkman digitizes and optimizes the production with its tech-enabled, end-to-end solutions.

Mr. Milkman works with over 60+ Indian dairy brands, namely - Akshayakalpa, Mr Milk, Whyte Farms, Abis Dairy, Carnival Group, Fortune Dairy, Binsar Farms, Nutrimoo, Healthways, and many others in India and helps them manage different aspects of dairy distribution, supply chain, customer subscription, and delivery requests through an integrated platform.

For Samarth Setia, CEO, Mr. Milkman, it started as a mobile application – a solution to help his local milkman organize his delivery operations and customer accounts and produce automated bills. This led to many milkmen using the app and a consumer-facing application for customers to place orders with these



milkmen was launched by Samarth.

From serving the small milkmen they moved to large milk brands by building a full-fledged SaaS (Software as a Service) platform that not only organized and automated the customer management for large and small-scale dairies but also helped various dairies keep track of their operational processes by reporting sales anomalies and providing extensive reports. Regular upgrades in technology based on customer feedback ensure seamless milk and dairy product delivery from farm to the table.

Due to its sheer volume Danone has been the most

recent to shut shop here. Unlike Danone, Dairy.com plans to work with Indian dairy industry partners and help them with quality and supply chain management, manufacturing execution systems, dairy firm analytics etc with information technology services and intelligence.

For future the plan is to optimize and digitize several areas of the agriculture supply chain in India, North America, and Europe. Dairy.com has extensive experience in multiple agribusiness areas and sectors, including first mile, plant operations, payments, quality control, risk management, and transportation, and employs over 200 people

worldwide. Their presence in over five continents has allowed Mr. Milkman to expand and reach out to all of their clients and new clients in all those locations.

Dairy.com plans to continue operations under the same name; with an expansion of its current team. Dairy.com and Mr. Milkman together are well-positioned to thrive in India. Their solutions are ideally suited to successfully support the country's exponential rise of eCommerce and its increasing consumer demand for convenience, value, food safety, ease of payment, and product variety from the industry. They are capable of offering the best of solutions from both worlds.

Dairy.com was founded 20 years ago. Well over half the milk in the United States, in some way, shape or form, is accounted for and tracked using their systems. The animals never stop making milk. With their India operation, they would have people on this side of the world at all times; it would be like a normal working day.



Management of Dairy Cattle in Winter Season

Dr. Sanjay K Latkar

Alembic Pharmaceuticals Ltd Mumbai
www.alembic-india.com Email: - sanjay.latkar@alembic.co.in

In India in few state there is extreme weather condition were found, Temperature go's down the far below than normal in such metrological condition animal as well as human can't perform his normal physiological functions smoothly. During December – January month such condition is on peak. In such adverse climatic condition proper management of livestock is a great challenge we have to take care of animals spically lactating and pregnant one. Following parameters we need to consider for proper farm management in winter.

Factors Affecting Milk Quantity

➤ Under normal situations, milk production increases during the first six weeks of lactation and then gradually decreases

➤ The actual amount of milk produced during the lactation period is affected by several factors:

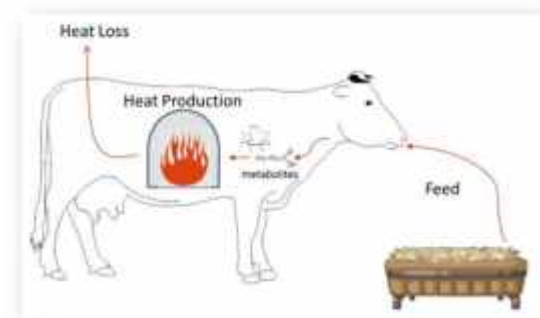
Physiological factors	Environmental factors
1. Species	1. Feed and water supply
2. Breed	2. Milling interval
3. Individuality of animal	3. Milling frequency
4. Dry period	4. Stress
5. Parity/age and body weight	5. Growth hormones
6. Lactation number	
7. Pregnancy	
8. Season of calving	
9. Temperature & Humidity	
10. Disease	

.Berseem is the most easily available green fodder which contain high protein and water which support and help for lactating as well as growing animals. Concentrate cake are also options for optimum energy production subject to economic conditions. If green grasses is not available than 20-30 kg of leguminous fodder can be used with 10 kg of wheat bhusa for feeding large animals. Apart from above 3 kg of concentrate mixture will be helpful to maintain the body temperature. Good quality 40-50 kg green fodder also provide the required energy to the animals which ensure up to 10 lit of milk production .

D. Prevention : In this season need to take care of Nitrate toxicity and blot conditions for this leguminous fodder should be mixed with either non leguminous or wheat bhusa etc. adding of 2% mineral mixture like Alvite M chelated and 1% salt in concentrate feeding is helpful. Product like KHURAK, SHARKOFERROL-VET and ALVITE –M chelated mineral mixture is highly beneficial to maintain the animal health during this adverse climatic condition. Clean fresh lukewarm water should be given to the animals for proper physiological health.

Regular deworming is beneficial to reduce the worm load MINTHAL bolus and MECTIN Inj is best remedy to keep control over Endoparasites.

For other best alternative remedies vet advice is preferable.



A. Shelter Management : Shelter management is a key factor to overcome on the adverse climatic conditions . Cartons must be used if you are keeping animals in the loose housing system to stop the flow of cold wind at animal level . It is possible with readily available materials like Bamboo ,Tadpatri , dry grasses ,paddy straw guinea bags ,jute bags etc.

Sunlight is the best medium to keep farm free from infection access of direct sunlight inside the shade will allow to keep farm free from infectious agents and it is readily available source but in case of winter sunlight availability go's less day is short and most of the time its cloudy and fog is there . We have to think for another alternative. It is also advisable that animals should be exposed to direct sunlight most important things is floor should not remain wet, drainage system should be standard and ask labor to clean the shed 3 times a day to maintain hygienic conditions .In this season various diseases like Pneumonia ,Fever diarrhea is common. If we not put proper attention than there is possibility of death also .

B. Bedding Management : Suitable bedding

is the one of the important factor to keep animals warm in cold climatic conditions 4-6 inches depth bedding is advisable for large animals and 2 inches for small animals. Direct contact with floor lead to more loss of body temperature so it advisable to keep away. Paddy straw dry grass wheat busa etc should be used for bedding purpose now a days commercial material is also available to keep animals warm which also protect from adverse climatic conditions .Good ventilation is also important factor to keep farm hygienic which also help to expel ammonia gasses from shed .

C. Personal Hygiene&Nutrition : animals must cleaned regularly with clean and soft material or brush . Hair should not be clipped during this season .bathing with cold water should be avoided .

Always try to provide good quality nutrition and balanced diet .During winter climate temperature go's down up to 100 C to 50 C for proper physiological function body temperature should be maintain at 1010 C to 1020 C to keep body warm above the environmental temperature. Body require extra supplementation of protein & Energy

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WHITEPAPER

Intra Repiderma: The new green standard for navel care of newborn calves

Daisy Rooijackers, Marc Spackler and Robbert van Berkel



Daisy Rooijackers,
MSc



Marc Spackler,
MSc



Robbert van Berkel,
MSc

A navel string/umbilical cord is the highway into a calf's bloodstream and is an open connection with the outside world after birth (Fig. 1). Bacteria like *Streptococcus sp.* and *E. coli* can easily enter the bloodstream through the navel to cause systemic disease. Studies have shown that 29% of illness in calves was attributed to navel associated issues. Although most calves survive these navel infections, their bodyweight gain is reduced in the first 3 months of life. In the worst cases it can result in a mortality rate around 2%.

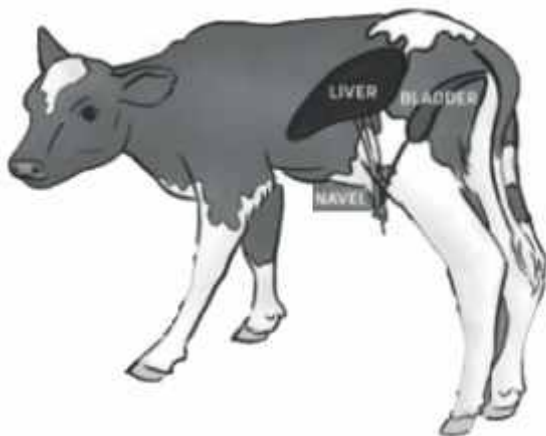


Figure 1. Schematic representation of the blood vessels from the aorta, liver, and bladder, all ending in the navel, providing a potentially open connection with the outside world.

Which treatments are out there?

Proper management of the navel right after birth can give calves a jump start. In the past an antibiotic spray was often used, but the use of antibiotics has major drawbacks such as the development of resistant pathogens and the inhalation of antibiotics by the user.

Iodine applied in a navel dip cup has also been widely used, although it can be questioned if it is the most hygienic and practical solution, since the navel cups should be (but rarely are) cleaned and refreshed between each use. Each application requires around 35 ml of iodine solution and left-overs often end up in the manure pit. The FDA in the US has recently moved iodine to a list 1 chemical. In concentrated form, iodine is dangerous by inhalation and can irritate skin and eyes. In rare cases, contact may cause allergic skin reactions.



Intra Repiderma, a skin protection product supplied as pressurized aerosol spray, has all the potential to become the new green standard for navel care, since every application is fresh, no reilling is necessary, it sprays well upside down on the navel and all product is sprayed directly on the target spot (no wastage).

Comparison in the field

A field study was performed to investigate if the use of Intra Repiderma results in improved navel conditions in comparison to the use of Iodine.

The study was performed at a professional dairy farm in France with 850 dairy cows. The trial began in December 2019 and lasted 3 months. In total, 200 calves were included from 7 different breeds, which were evenly divided into 2 groups: either a single application with 4% iodine (navel dip) or a single application of Intra Repiderma (aerosol spray). Calves born in week 1 were sorted into the iodine group, calves from the next week in the Intra Repiderma group, and so on. Eventually, both groups consisted of 100 calves. The independent trial was executed under the full supervision of Dr. F. Dufresne, Clique Vétérinaire, Oisemont; Dr. C Engel, HLVT Conseil, Lécousse and S. Clech, Synthèse Elevage, Pleumeleuc, and presented at the GTV congress, October 2020.



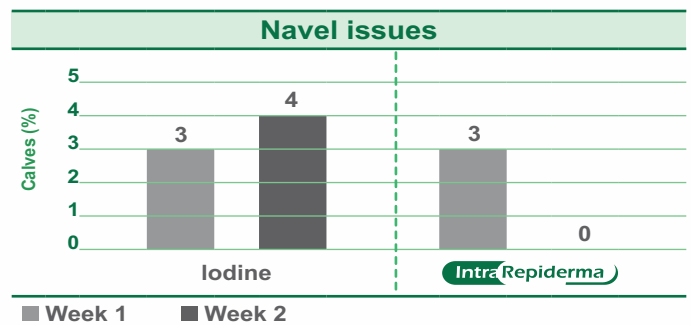
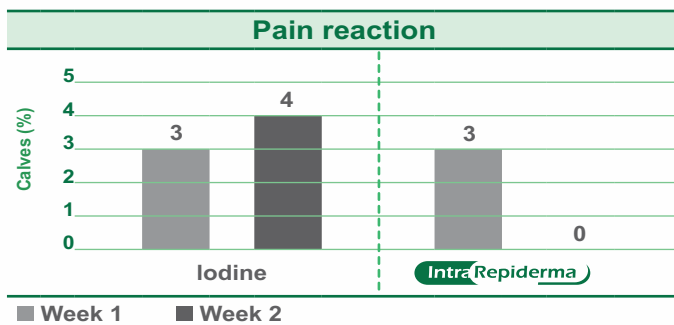
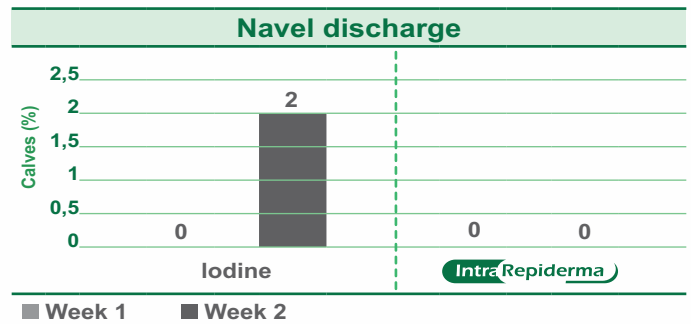
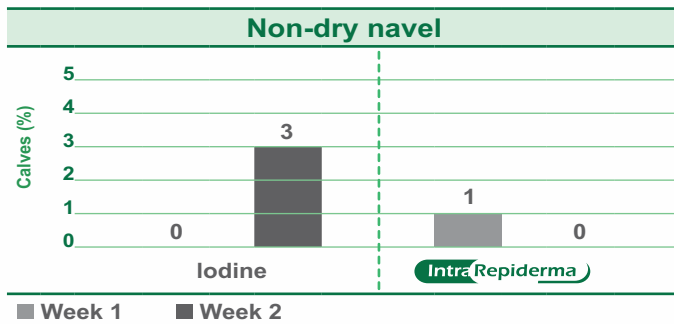
Picture 1. Application of Intra Repiderma.



Picture 2. Evaluation of the navel by farm veterinarian.

Intra Repiderma results in 100% navel care

The charts below give insight into the several parameters which were evaluated by the farm veterinarian: dry/wet navel; navel discharge yes/no; pain reaction yes/no and the total amount of calves having one or more navel issues:



The charts show

- The iodine group: Measurements for all parameters deteriorated towards the 2nd week. In the 2nd week, 4 of the 100 calves (4%) had one or more navel issues.
- The Intra Repiderma group: Measurements for all parameters improved. In the 2nd week, none of the calves had a navel issue.

Although the results were not significant (for significance, a bigger calf population would be needed), a clear difference can be observed in favour of Intra Repiderma application.

Clear benefits for the use of Intra Repiderma

Besides optimal navel care with Intra Repiderma, the following benefits have been noted:

- Iodine is 25% more expensive per application as Intra Repiderma (according to this trial)
- The use of iodine product per application is 35 ml, while only 10 ml Intra Repiderma is required per application
- With Intra Repiderma every treatment is “easy, fresh and hygienic”
- Intra Repiderma is sprayed directly onto the navel so no product is wasted

Intra Repiderma gives calves a jump start and farmers the insurance of proper navel care!



Tom Schiettecat Becomes The New Director of Milk & Farms at Milcobel



Tom Schiettecat will take up the position of Director Milk & Farms at the dairy cooperative Milcobel on 1 January 2022. Tom brings extensive experience in membership and community building and a strong network within the business and political world.

Tom takes over from Robert Taks, who temporarily filled this role after his assignment as Plant Manager of Schoten.

He started his career as a national staff member at KLJ-Groene Kring vzw, and then built up a career of more than 23 years in various socially-oriented organizations, including his current assignment as Director Members, Partners & Events at CD&V, where he has been active since 2013. is.

With his experience, Tom is the perfect bridge-builder between company and cooperative, and he will also provide great added value for stimulating member activities. With his down-to-earth no-nonsense approach and willingness to listen, he builds up strong contacts with the grassroots. He is a good advocate and strongly connected to civil society. In addition, Tom is a team player who has the necessary capabilities to collaborate

with all actors and facets of the organization to arrive at a strong policy.

About milcobel

Milcobel is the most important dairy cooperative in Belgium, representing 40% of Belgian dairy farmers. In 2020,

Milcobel processed 1.7 billion liters of milk from more than 2400 members. The company produces high-quality dairy products such as cheese, butter, cream, milk powder, ice cream and whey at 6 production sites in Belgium and France.





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Applying Science, Enriching Life.

PRYAAS : Project Requiring Your Assistance and Support - A Tasty Dairy initiative

Tasty Dairy Specialties Ltd under its CSR activity decided to carry on its service activities in a planned and methodical way and this gave birth to Pryaas Foundation.



Tasty Dairy Specialties LTD.

Pryaas Foundation is a name of effort for society welfare focused on improved quality of life through



improvement of health, education, women empowerment, environmental sanitation and other required activities.

Main aim of their CSR activity is the sustainable development of all segments of our society and helping the downtrodden section of our society for overall upliftment of their living standards.

In this project, during summers they send their dedicated water tankers full with potable drinking water in the needy areas free of cost. As they have dairy industry, they have to dispose thousands of liters of water every day and they not only avoid water pollution but also deliver water to draught prone areas in summer for irrigation purpose.

More than this they have provided drinking water support in social events, marriage ceremonies and devotional events held in nearby villages. Throughout the year, 6 lacs 50 thousand liters of water have been distributed to more than 2500 families in the villages of District Ramabai nager.

Pryaas can be a source of encouragement for others to replicate, thus resulting in an increased thrust towards service to humanity.





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Trouw Nutrition Enters Nutritional Partnership to Drive Stellapps' Game-Changer Solution for Indian Dairy Farmers



15 December 2021

Trouw Nutrition, the animal nutrition business line of Nutreco, has today announced a long-term nutritional partnership with India's leading dairy-tech start-up Stellapps.

Stellapps is a farm-to-consumer dairy digitisation service provider, improving productivity, quality and ensuring end-to-end traceability across the dairy supply chain. Nearly three million smallholder farmers using Stellapps' technology in 36,000 villages across India will now gain access to Trouw Nutrition's high-quality feed products, including premixes and feed additives to support animal health, productivity, and milk yield.

The mutually-beneficial partnership commits both parties to a close cooperation to find innovative ways of Feeding the Future, Nutreco's purpose. It follows an announcement in October which confirmed that Stellapps had completed its first close towards its pre-series C round, led by Nutreco, alongside other investors.

In addition to high-quality feed products, today's nutritional partnership will see Stellapps benefit from Trouw Nutrition's 90 years of experience; its innovative tools and farm management expertise.

The partnership follows a successful 10-month pilot with 5,500 farmers across Uttar Pradesh and Kolar, Karnataka, which saw the use of Trouw Nutrition products, alongside mentoring and training, and resulted in improved farm outputs, such as milk yield and profitability.

"I have been feeding Trouw Min to my cows from February 2021", says Sanjay Yadav, a farmer from Chandauli, Uttar Pradesh. He said he has noticed an



Indian dairy farmers benefit from the partnership between Trouw Nutrition and Stellapps

immense improvement in the quality of the milk and the health of his cows since he started using the product. "Milk fat and SNF has improved, my cows are healthy and their coats have a good sheen," remarks Sanjay.

Both parties will now work together to build a strong advisory system that ensures small-holding dairy farmers in India increase their productivity and profitability. This is an important factor at a time when the Indian government is pursuing the target of doubling farmers' incomes by 2022. Today's announcement will accelerate this goal.

Trouw Nutrition CEO Saskia Korink says, "The new Stellapps end-to-end digitised model is a game-changer for Indian dairy farmers, and it is a shining example of innovation within our sector, helping us move towards feeding the future sustainably. "By partnering with Stellapps we can expand our reach in India and offer solutions to help to increase milk quality and yield for dairy farmers. I am thrilled that Trouw Nutrition will play an important role in supporting Stellapps' customers by providing its nutritional health solutions."

In India, farmers with smaller herd sizes often face barriers when seeking to grow their businesses sustainably, including challenges such as financial support, accessing high-quality products and services, and expanding their customer base.

Yet despite this, there are huge opportunities for India's small-holding community. India is the world's largest dairy market; approximately 570 million litres of milk are produced daily, and recent research indicates that the country's dairy market is set to increase by 6% between 2021 and 2026.

Stellapps Co-founder and CEO Ranjith Mukundan remarks, "We are thrilled to work with Nutreco and its animal nutrition business line Trouw Nutrition. This partnership will allow us to provide international quality cattle nutrition solutions to smallholder farmers in a retail fashion. We are confident that Trouw Nutrition products, with their proven record, will improve animal productivity, animal health & milk quality and as a result help boost smallholder farmer income significantly."



Editorial Calendar 2022

No.	Publishing Month	Article Deadline	Advertising Deadline	Focus
1	January	30-Dec-21	3-Jan-22	Disease Prevention
2	February	30-Jan-22	3-Feb-22	Herd Management
3	March	30- Feb- 22	3-Mar-22	Heat Stress
4	April	30-Mar-22	3-Apr-22	Cold Chain Management
5	May	30-Apr-22	3-May-22	Nutrition
6	June	30-May-22	3-Jun-22	Environmental Control System
7	July	30-Jun-22	3-Jul-22	Calf & Heifer Management
8	August	30-Jul-22	3-Aug-22	Mastitis
9	September	30-Aug-22	3-Sep-22	Milking Practices
10	October	30-Sep-22	3-Oct-22	Feed & Fodder Management
11	November	30-Oct-22	3-Nov-22	Winter Management
12	December	30-Nov-22	3-Dec-22	Methane Emission



The Company Dellait – Animal Nutrition & Health Continues to Grow With The Opening of A New Subsidiary in Spain

Dellait, the rising leader in Animal Nutrition & Health, has announced the launch of its first subsidiary in the European Union (EU), Dellait España, SL, to service the dairy cattle business in the area.

In recent years, the volume of milk production has constantly been growing in the EU, which indicates the increasing importance of this agri-food sector. The EU has shown an ever-increasing demand for dairy cattle nutrition solutions being a major player in the world dairy market. Thus, Dellait has chosen to continue its international growth and develop its operations there. This new expansion will strengthen Dellait's position as a strong international player in the embedded dairy cattle industry.

Headquartered in South Dakota, Dellait is a global nutrition company that provides services and solutions

to the livestock industry. Dellait has a global network of animal nutrition experts that take a collaborative approach to address challenges in the dairy cattle industry. They help dairy farms around the world improve profits by bringing innovative nutritional solutions, multi-disciplinary expertise, and extensive industry knowledge.

Dellait's purpose is to evolve the dairy industry focused on efficiency, cow welfare, and environmental sustainability. "Our team delivers transformational impact for dairy farms by helping them optimize production performance and animal health, maximize income over feed costs, and proactively prepare for shifts in commodity markets through precise nutrition, leading-edge management practices, advanced analytics, and operational effectiveness",

said Fernando Diaz, Dellait's CEO.

Using a science-based strategy and applied research, Dellait – Animal Nutrition & Health has developed nutrition technologies for dairy animals from growing heifers through lactating and dry cows. They rely on their decades of expertise to develop and implement nutrition solutions that deliver the best results.

About dellait:

Dellait is a global Animal Nutrition and Health company that provides services and solutions to the livestock industry. Their multi-talented team of consultants, scientists, and data analysts combines deep industry knowledge with specialized expertise in dairy cattle nutrition and health, milk quality, dairy farm management, and business intelligence.

Amul to invest Rs 500 cr in Telangana

Telangana Industries Minister KT Rama Rao has announced that the Amul Corporation is going to set up a state-of-the-art plant in the state. "The plant is going to be the largest in southern India and will provide direct employment to more than 500 persons and opportunities to several ancillary industries," the minister said.

The plant, which will have an initial capacity of five lakh litres a day, would be located in a special food processing zone in the State.

Telangana's IT and Industries Secretary Jayesh Ranjan and Sabar Dairy Managing Director Babubhai M Patel have signed a memorandum of understanding in this regard.

Food processing Director, Akhil Gawar & Sr. officials from the Dept were also present in the meeting.

The plant will come up in a special food processing zone in Telangana with an investment of about Rs 300 Crores in Phase 1 & Rs 200 Crore in Phase-2. The plant will provide direct employment to more than 500 people.

In addition to the plant, Amul will also set up its bakery production division in Telangana with a range of products such as bread, biscuits, traditional sweets, and baked snacks. KTR thanked the leadership team of Amul for deciding to set up their largest plant in Telangana state.

NEOGEN Acquires Delf (UK) Ltd.

NEOGEN Corporation (NASDAQ: NEOG) has announced that it has acquired Delf (UK) Ltd., a United Kingdom-based manufacturer and supplier of animal hygiene and industrial cleaning products.

Since Delf's founding in 1928, the

company has grown from one of the main soap manufacturers in Liverpool to offer a wide range of animal hygiene and specialty chemical products. Delf is a select member of the Iodine Registration Group (IRG), allowing it to supply Article 95 PVP-iodine and iodine-based biocidal products to the UK and European Union animal hygiene markets.

"We are very pleased to have Delf join NEOGEN," said Dr. Jason Lilly, NEOGEN's Vice President of International Business. "We believe that Delf's more than 40 years of experience in the UK dairy hygiene market will be of great benefit to NEOGEN as we look to expand our offerings of performance dairy chemicals. Delf's products synergistically complement our Quat-Chem disinfectant and cleaner offerings, enhancing our portfolio and helping to keep people and animals around the world safe and healthy."

"Joining NEOGEN is an exciting opportunity for us," says Chris Jones, Managing Director at Delf (UK). "Over the years, we have put a lot of effort into our range of specialty chemicals and dairy hygiene products, and we are excited to see how those offerings continue to grow with the expertise and backing of the NEOGEN team."

Terms of the agreement were not disclosed.

NEOGEN Corporation develops and markets comprehensive solutions dedicated to food and animal safety. The company's Food Safety segment markets dehydrated culture media and diagnostic test kits to detect foodborne bacteria, natural toxins, food allergens, drug residues, plant diseases, and sanitation concerns. NEOGEN's Animal Safety segment is a leader in the development of genomic solutions along with the manufacturing and distribution of a variety of animal healthcare products,

including diagnostics, pharmaceuticals, veterinary instruments, wound care, and disinfectants, as well as rodent and insect control solutions.

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PM launches multiple projects in Varanasi



The Prime Minister, Shri Narendra Modi laid the foundation stone of 'Banas Dairy Sankul' at the UP State Industrial Development Authority Food Park, Karkhiyaon, Varanasi.

Spread across 30 acres of land, the Dairy will be built at a cost of about Rs 475 crores and will have a facility for processing 5 lakh litre of milk per day. The Prime Minister also digitally transferred about Rs 35 crore bonus to the bank accounts of more than 1.7 lakh milk producers associated with Banas Dairy.

The Prime Minister also laid the foundation stone for the Biogas based Electricity generation plant for the Milk Producers Cooperative Union Plant, Ramnagar, Varanasi.

Prime Minister launched a Portal and Logo dedicated to the Conformity Assessment Scheme of milk products, developed by the Bureau of Indian Standards (BIS) with the help of National Dairy Development Board (NDDB).

The Prime Minister underlined the importance of livestock. He said "talking about cows can be a crime for

some people, cows are revered as mothers by us. People who make fun of cow-buffalo forget that the livelihood of 8 crore families of the country is run by such livestock." He also talked about the nationwide immunisation programme for foot and mouth disease among cattles.

Sapins unveils a new corporate identity, launches new products in new packaging design



Dairy manufacturers Sapins has set a target of sales to cross Rs 100 crores in 2022-23 and has launched a variety of new products in a new packaging design

Sapins, Kerala's leading dairy manufacturers, has unveiled a new corporate identity by launching its new products by cine artist Anu Sithara, the brand ambassador of sapins, at a function held in Kochi. Gigi Thomas, Managing Director, Sapins Dairy said, "the new products are introduced in line with the market's evolving requirement. Milk in recyclable glass bottles is our big leap towards a clean environment while set curd is launched to cater to the growing demand from the new generation, he added.

With these new products already in the market, the company is targeting to achieve a sales figure of Rs.100 crores in 2022-23. The other products planned for 2022 include flavoured yoghurts, dairy beverages and ice creams.

Along with the new products and new corporate identity, the brand has also launched social and environmental initiatives. The company has increased the number of women employees at all levels. Even earlier, our ratio was in favour of women at 60:40 and currently, it has even crossed 70:30 with more recruitment across production, sales, customer care, admin and HR." Gigi Thomas said. "As a part of protecting the environment, we have launched insulated electric vehicles for our last mile distribution. We want to replace majority of our vehicles used for last mile distribution with electric vehicles by 2022," Siby Varghese, Director Sapins said.

Considering all these, the brand has come out with a new slogan 'Fresh is the new healthy' reflecting its core values and quality initiatives.

Last year, sapins was in the news for performing well even during the pandemic by shifting its focus to retail from corporate sales and that too reversing the ratio of 85:15. As covid recedes, Sapins looks up to rapid growth both on retail and B2B fronts as its products cater to essential requirements. Sapins Dairy has been operational since 2010. The company set up its major plant at Kizha-kambalam, 15 kms from here, in 2014 with a capacity to process 50,000 litres of milk every day. The unit has the most-modern production lines with separate capacities for curd (10,000 litres pd) ghee (1500 litres pd), paneer and butter (2 to 3 tons pd) and four variants of milk. To source its additional requirement of milk, Sapins has also adopted a cluster of villages around Tenkasi in Tamil Nadu. The company is also regularly engaged in various ground level initiatives to enhance the quality of milk produced.

Milky Mist plans Rs. 1000 crores expansion in the next three years



Milky Mist Dairy Foods Pvt Ltd, a leading dairy based in Erode in western Tamil Nadu, has chalked out 1,000 crore expansion plan in the next three years to double the plant's capacity and foray into new products like dark chocolate and ice cream.

The company, which had already invested ₹550 crore in its existing plant, will fund the expansion through a combination of debt and equity. "We want to raise Private Equity investment by March, and thereafter kickstart work to come out with an IPO in the next 20 months," said T Sathishkumar, Founder and Managing Director, Milky Mist.

In November, the company had signed an MoU with the Tamil Nadu government at the Investors Conference held in Coimbatore for an investment of ₹600 crore. "We have decided to add another ₹400 crore to that," he told BusinessLine at the company's plant.

"We are a 100 per cent product company and the only dairy in India to convert all the milk procured into value-added products. We have developed the dairy plant where 150+ SKUs of Milky Mist products are processed across 25 categories," he said.

With a revenue of just ₹42 crore in 2012, the company is expected to close the year with around ₹1,200 crore.



CM Jagan Mohan Reddy launches Amul Project in Krishna district

The latest initiative was floated to financially boost the dairy farmers of 264 villages in the district

Chief Minister YS Jagan Mohan Reddy has launched the Jagananna Palavelluva- AP Amul project in Krishna district.

The latest initiative of Andhra Pradesh government's was floated to financially boost the dairy farmers of 264 villages in the Krishna district. "With the aim of price stabilization on milk, the state government came forward to market the product effectively and ensured remunerative returns are made by the farmers", said an official.

According to the Government, Amul started working with the state in November 2020. Later it has spread to more than 500 villages in the state. So far, 1.67 crore litres of buffalo milk and 73,96,857 litres of cow milk have been collected from 1,79,248 farmers of 1,906 villages through 1,093 RBKs. An average of 75,000 litres of milk is collected from 30,640 farmers.

The Andhra Pradesh Amul project is already successfully in YSR Kadapa, Prakasam, Chittoor, Guntur, and West Godavari districts.

Speaking at the launch, the Chief Minister stated that during his Padayatra he came across several dairy farmers who were facing financial issues. "The dairy farmers told me that they compared their milk rates to that of mineral water, saying while the price of one-litre mineral water was Rs 20, they don't even get that for a litre of milk", said the chief minister.

As per state data, the dairy farmers in Andhra Pradesh have made an

additional profit of 10.7 crores after the MOU was signed with AMUL, paying a maximum of Rs 74.78 per litre for buffalo milk and Rs 35.36 per litre for cow's milk.

The Chief Minister said that "When there are multiple sellers and only one buyer, a Bias Monopoly is created leading to sellers coming to terms with the price decided by the buyers, making the financial gain of dairy farmers limited to local milk vendors pricing. The state government is determined to change this system for the benefit of the dairy farmers. The MOU with Amul has brought significant change in the system. The company is the 8th largest Milk processor and isn't looking to make profits from the state. The dairy farmers are now the stakeholders in this company, they are the ones who are supplying, benefiting, and making profits from this MOU."

Hon'ble Union Minister of Fisheries, Animal Husbandry & Dairying presents Gopal Ratna Award on National Milk Day at NDDDB, Anand

Anand, November 26, 2021: The Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying, Govt of India, National Dairy Development Board (NDDDB) and other institutions - GCMMF Ltd, Kaira Milk Union (Amul Dairy), NCDFI Ltd, IRMA, Mother Dairy Fruit & Vegetable Pvt Ltd, IDMC Ltd, Indian Immunologicals Ltd, NDDDB Dairy Services and Anandalaya jointly celebrated (NDDDB) "National Milk Day" to commemorate the birth centenary of Dr Verghese Kurien on 26 November 2021 at NDDDB's TK Patel Auditorium.

During the ceremony, Shri Parshottam Rupala, Hon'ble Union Minister of Animal Husbandry & Dairying conferred the Gopal Ratna Award to the winners of the Best Dairy Farmer rearing indigenous cattle/buffalo breeds, Best Artificial Insemination Technician and Best Dairy Cooperative Society (DCS)/ Milk Producer Company/ Dairy Farmer Producer Organisation in the country. Besides felicitation of the winners, Shri Rupala inaugurated IVF Lab at Dhamrod, Gujarat and Hessergatta, Karnataka and Start-up Grand Challenge 2.0. He flagged off Milkobikes (jointly developed by NDDDB and IDMC Ltd) - motorcycles with milking machines for encouraging self-employment. He also launched NDDDB-developed web

NATIONAL GOPAL RATNA AWARD 2020-21

CATEGORIES

- Best dairy farmer rearing indigenous cattle breed
- Best Artificial Insemination Technician
- Best Dairy Cooperative/Milk Producer Company/ Dairy Farmer Producer Organisation

For rules, regulations and further details refer www.dahd.nic.in / www.mha.gov.in

portal for breed multiplication scheme and urban kit organic manure on the occasion. The Hon'ble Union Minister also released a book authored by Ms Nirmala Kurien, daughter of Dr Verghese Kurien, on his life. A remake of the iconic TVC of 1990s - Doodh Doodh Piyo Glass Full and a tribute film on Dr Kurien were also showcased during the ceremony.

Hon'ble Union Ministers of State for Fisheries, Animal Husbandry & Dairying, Dr Sanjeev Kumar Balyan and Dr L Murugan, Shri Mitesh Patel, Hon'ble Member of Parliament (Loksabha), Shri Atul Chaturvedi, Secretary, Dept of Animal Husbandry & Dairying, Shri Meenesh Shah, Chairman, NDDDB, Ms Varsha Joshi, Joint Secretary, DAHD, Govt of India, Dr RS Sodhi, Managing Director, GCMMF and Ms Nirmala Kurien also graced the occasion.

Shri Rupala said that Gopal Ratna Award will set benchmarks and help adopt best practices and innovation. He said Dr Kurien was a firm believer of vocal for local ideology. The cooperative model of Amul has instilled a sense of confidence and self-belief among the farmers. He appreciated NDDDB for organising National Milk Day at Anand to commemorate Dr Kurien's birth centenary.

Dr Balyan said a proud nation remembers Dr Kurien - as we all know

how the milk cooperatives have played a vital role in the progress of the dairy industry. Dr Kurien was an institution himself. He stressed a lot on innovation and the legacy is being carried to new heights by NDDDB.

Dr Murugan said that Dr Kurien was a visionary and thanked him for uplifting farmers of the country and providing nutrition to millions of children.

Shri Chaturvedi said that Dr Kurien's extraordinary leadership qualities and commitment changed the lives of millions of milk producers. He further said that the beauty of dairy cooperatives is that they return 70-80 % of the consumer rupee back to the dairy farmers. He reiterated Hon'ble PM's call for Sabka Saaath, Sabka Vikas, Sabka Vishwas and Sabka Praayas.

Chairman, NDDDB said that Dr Kurien had been a great institution builder and we are celebrating the achievements of this great visionary, who gave dairy farmers control over their resources they create. He said that NDDDB is continuously looking for innovative and commercially viable solutions to solve the problem of the dairy industry.

Ms Varsha Joshi said Dr Kurien always believed that cooperation is the preferred form of enterprise. Today we are proudly following his footsteps.

Dr RS Sodhi said that what Dr Kurien

taught and preached years back is becoming more and more relevant today. Amul was the product of his vocal for local approach. His commitment for the value system has inspired all.

Earlier, the celebration of 100th birth anniversary of Dr Kurien started with a Walkathon – KadamForKurien – with the idea of reaching 200 million footsteps to honour the founder Chairman of NDDDB. During the Walkathon, people walked from Amul Dairy up to NDDDB campus via GCMMF, Institute of Rural Management Anand (IRMA), Anandalaya School & NCDFI. The footsteps of people from all walks of life were recorded through KadamForKurien app. The Walkathon culminated with the formation of a human portrait of Dr Kurien.

The Hon'ble Union Minister presented awards to winners of poetry, essay, poster, quiz competitions organised by NDDDB in memory of Dr Kurien. Winner and runner-up of Dr Kurien Centenary Cricket Tournament organised by GCMMF Ltd also received awards from Shri Rupala.

Shri Arun Maira, Chairman HelpAge International delivered the Dr Kurien Memorial Lecture organised by IRMA. A special talk by Shri Satish Marathe, Board Member, RBI & Shri Vijay Kumar T, Executive Vice Chairman, Andhra Pradesh Rythu Sadhikara Samstha was also organised.



Team Pixie wishes you a
very **HAPPY NEW YEAR**

2022
HAPPY NEW YEAR



January 2022

1. DairyTech

Dates: January 25- 27, 2022

Venue: Crocus Expo International Exhibition Center

City: Moscow - Russia

Website: www.dairytech-expo.ru

February 2022

1. Agro expo

Dates: February 2- 6, 2022

City: Izmir

Country: Turkey

Website: www.en.agroexpo.com.tr

March 2022

1. Eurotier Middle East

Dates: March 21- 23, 2022

Venue: Abu Dhabi, National Exhibition Centre (ADNEC),
Vereinigte Arabische Emirate

Email: s.karaoglan@dlg.org

Website: www.eurotiermiddleeast.com

April 2022

1. Anuga Food Tec

Dates: April 26 -29, 2022

Venue: Cologne Trade Fair Center

City: Cologne

Country: Germany

Website: www.anugafoodtec.com

August 2022

1. ILDEX Vietnam 2022

Dates: August 3-5, 2022

Venue: SECC, HCM, Vietnam

Email: panadda@vnusiapacific.com

Website: www.ildexvietnam.com

2. Livestock Malaysia

Dates: August 10 - 12, 2022

Venue: MITC Complex

City: Melaka - Malaysia

Email: livestockmalaysiamy@informa.com

Website: www.livestockmalaysia.com

3. Livestock Philippines 2022

Dates: August 23 - 25, 2022

Venue: World Trade Center Metro Manila, Pasay City,
Philippines

Email: rita.lau@informa.com

Website: www.livestockphilippines.com

September 2022

1. Victam Asia 2022

Dates: September 7 - 9, 2022

Venue: IMPACT Exhibition Center

City: Bangkok

Country: Thailand

Website: www.victamasia.com

October 2022

1. World Dairy Expo

Dates: October 2 - 7, 2022

Venue: Alliant Energy Center

City: Madison, Wisconsin

Country: United States

Website: www.worlddairyexpo.com

2. Sommet-elevage, France

Dates: October 4 - 7, 2022

Venue: Grande Halle Showgrounds

City: Ferrand

Country: France

Website: www.sommet-elevage.fr

3. VIETSTOCK 2022

Dates: October 12 - 14, 2022

Venue: Saigon Exhibition & Convention Center (SECC)

City: Ho Chi Minh City

Country: Vietnam

Website: www.vietstock.org/en-us

November 2022

1. EuroTier

Dates: November 15 - 18, 2022

Venue: Deutsche Messe AG

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