



GLOBALLY COMPETITIVE & ECONOMICALLY VIABLE ETHICAL DAIRY BUSINESS PLAN FOR INDIA

(Scientifically logical answers of pertinent questions and innovative solutions of core issues relating to economic viability of ethical dairy business in India)

Copy of email addressed to premier dairy institutions & Government of India:

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Respected excellences

Kindly refer to our last email communication dated October 6, 2023 and Mission presentation on the link below:

<https://www.linkedin.com/pulse/pertinent-questions-relating-economic-viability-dairy-jaswant-singh/>

Dairy business entrepreneur and foreign investor interested in establishing value added agro based dairy foods business in India as a joint venture with Indian counterpart conducted S.W.O.T. analysis of dairy business and approached our Mission associate to get professionally logical answers of pertinent questions directly related to three prime beneficiaries of dairy business in India.

We requested our professional friends and dairy experts working with premier dairy institutions of India, to share with us scientifically logical answers and practically feasible solutions of correlated problems before 31.10.23. Our Mission associate also made an offer of a complementary prize of Rs. One Lac to honourable dairy expert who would share with us best practically feasible techno-commercial solutions of problems directly linked with all those questions.

Unfortunately we did not get any response from our professional friends, reputed dairy experts and consultants. We can safely presume, they agree with us that these complex questions relate to age old unresolved problems of dairy business entrepreneurs in India. These core issues, therefore, need our prompt attention and collective professional wisdom to evolve practically viable solutions with the resources available with Government/premier dairy institutions mentioned above.

As a voluntary organisation established in 1989 by N.R.I dairy professionals, we requested our associates supporting our Mission activities for India to generously share with us their valuable research findings and proposed solutions. Professional input provided by them may help us in

protecting genuine interests of needy milk producers, health conscious milk consumers and ethical dairy business entrepreneurs. We, therefore, consider it as our proud privilege to reproduce those answers and solutions shared by them with us as under:-

Section I Milk producers:

Q.No.1. Commercial dairy farmer: If I supply 100% pure Buffalo milk or cow milk (without intermixing cow milk with buffalo milk) to existing milk cooperatives or private sector dairy plants, why do I not get the payment even to cover up my actual cost of milk production?

Q.No.2. Commercial dairy farmer: If I supply mixed milk (diluted with added water and manipulating natural S.N.F.: Fat ratio of C.M. & B.M.) containing 4.60 % Fat, 5.00% Fat 5.55% fat or 5.855% fat declaring that as mixed milk (63.33333% C.M.+36.6667% B.M.), (50% C.M.+50% B.M).(31.66666% C.M.+68.33334% B.M.), (21.5% C.M.+78.5% B.M) respectively, I get about 20% more payment by converting added water as additional milk. Can any dairy management expert/ consultant advising commercial /cooperative dairy plants in India especially those specialised in milk procurement explain to us why it is so?

Answer: Q.No1 & 2 It is only a myth that 60:40 two axis formulae was evolved for purchasing buffalo milk or cow milk. In fact it is a simple arithmetical formula based on per Kg. market value of ghee (Fat) and skimmed milk powder (S.N.F.) besides S.N.F: FAT ratio and corresponding C.L.R. that indicates exact % of added water in raw mixed milk.

Undiluted natural buffalo milk containing 6.50 Kg. Fat, 8.84 kg. S.N.F., 15.34 Kg total milk solids, 84.66 Kg assumed natural water that comes out from the udder of a buffalo having S.N.F: Fat ratio (8.84/6.50=1.36) corresponding to 29 C.L.R. is treated as bench mark for all milk purchase transactions irrespective of the fact that Fat and S.N.F. in milk comes out from cow or buffalo milk.

When this formula was evolved during pre- independence era, market value of ghee and skimmed milk powder might be in the ratio of 60:40 so the formula was designated as 60:40 two axis formulae.

Standard bench mark composition of natural cow milk (3.50Kg Fat, 8.50Kg. S.N.F. 12.00 Kg. total milk solids, 88 Kg. assumed natural water that comes out from the udder of a cow having S.N.F: Fat ratio (8.50/3.50=2.4285714) corresponding to 30 C.L.R. was considered as a second axis bench mark for the purpose of milk evaluation of mixed milk of any permutation or combination of butter fat and S.N.F. in liquid form. Common factor between the two axis is that assumed natural water content in raw milk would be treated as having zero value in monetary terms. Since natural S.N.F.: Fat ratio of B.M. and C.M. is significantly different from each other so S.N.F. in raw milk must be calculated accurately for each milk purchase transaction (without exception) using original two axis formula as follows:

$$S.N.F.=C.L.R./4+0.2xFat=C.L.R./100$$

Cross check for standard buffalo milk:

$$S.N.F.=29/4+0.2x6.5+29/100=8.84\%$$

Similarly cross check for standard cow milk:

$$\text{S.N.F.} = 30/4 + 0.2 \times 3.50 + 30/100 = 8.50\%$$

Milk purchasers used to declare Per Kg fat rate for standard buffalo milk as bench mark price say Rs. 700 Kg Fat. So 100 Kg buffalo milk in liquid form containing 6.50 Kg Fat would be paid Rs. $6.50 \times 700 =$ Rs. 4550 subject to the condition that $6.50 \times 1.36 = 8.84$ Kg. S.N.F. would also be available in that milk to provide 15.34 Kg total milk solids. For calculation purpose total amount was divided in the ratio of 60:40 i.e. $(4550 \times 60/100)/6.50/100 =$ Rs 420/Kg Fat, $(4550 \times 40/100) / 8.84/100 =$ Rs 205.88235/Kg. S.N.F., Rs. 2.9661016 /Kg milk solids and Rs. 45.50 /Kg for standard buffalo milk. $(45.50/6.50) \times 100 =$ Rs 700/Kg Fat)

Now these values for Fat and S.N.F. would remain constant irrespective of the fact that butter fat in mixed milk comes from buffalo milk or cow milk or any other permutation or combination of two categories of milk.

Similarly value of 100 Kg milk containing 3.50 Kg Fat , 8.50kg S.N.,F , 12.00 Kg total milk solids , 88 Kg assumed water corresponding to 30 C.L.R. would be = Rs $(3.50 \times 420 + 8.50 \times 205.88235) =$ Rs. $(1470 + 1750) =$ Rs 3220 or Rs 32.20/Kg for standard cow milk ($\text{Rs} 32.20/3.50 \times 100 =$ Rs. 920/kg Fat) or 552/Kg Fat , 151.522941/Kg S.N.F. and Rs. 2.6833333/Kg total milk solids.

Cross check with 60 40 two axis formula:-

$$\text{S.N.F.} = (30/4 + 0.2 \times 3.50 + 30/100) = 8.50\%$$

However for the same amount i.e. Rs. 3220, milk purchaser can also purchase buffalo milk of following composition:

100 Kg diluted buffalo milk 4.60 Kg Fat, 6.256 Kg S.N.F. 10.856Kg total milk solids containing 41.30434 Kg added water as diluent. $(4.60 \times 420 + 6.256 \times 205.88235) =$ Rs. 3220 or Rs. 32.20/Kg corresponding to 20.52307 C.L.R. $(29/141.30434) \times 100 = 20.52307$

Cross check with 60 40 two axis formula:-

$$\text{S.N.F.} = 20.52307/4 + 0.2 \times 4.60 + 20.52307/100 = 6.256\% \text{ S.N.F.}$$

Documentary evidence and more information on this subject is available on our Mission presentation on social media link below:

<https://www.linkedin.com/pulse/how-dairy-plants-india-suffering-loss-billions-rupees-jaswant-singh/>

Q. No.3 How start up dairy business entrepreneurs producing A2 organic milk of native breeds of buffaloes (Murah) or desi cows like Sahiwal/Gir etc. in their commercial dairy farms around cities like Chandigarh are marketing raw /chilled milk in temper proof glass bottles directly to urban consumers at a price more than double the rate they will get if they supply that as raw milk to organised sector dairy plants?

Video evidence is available on a YouTube links below:

<https://www.youtube.com/watch?v=PfswOMOued8>

<https://www.youtube.com/watch?v=RwaBv7vTSHE&t=18s>

Answer: Nutritional value and health benefits of consuming organic milk produced by natural native breeds of desi cows, buffaloes and goats etc. is very high as compared with conventional milk produced by genetically modified high yielding dairy animals. In fact besides nutritional value, this milk is a valuable health care tonic and cure for many human ailments. In western countries organic milk is being marketed at a price four times the price of conventional milk. Ethical Indian dairy business entrepreneurs, therefore, have a golden opportunity to produce pasteurized/U.H.T. milk and value-added organic dairy foods out of such milk, strictly conforming to international quality specifications and market the same worldwide at globally competitive/highly remunerative price.

Documentary evidence is available on link below:

<https://www.facebook.com/photo?fbid=6671106142970573&set=a.1068549396559637>

Section II Milk consumers

Q. No.1. Advanced dairy countries do not allow marketing of raw milk directly to any milk consumer but how pure /microbiologically safe pasteurized /U.H.T. Milk strictly conforming to international quality specifications having a shelf life of two/three weeks for pasteurized milk and more than three months for U.H.T milk is available in the market everywhere in those countries?

Answer: Unlike in India, advanced dairy countries have mass production of milk through commercial dairy farms each producing more than thousands of litres of milk per day. I had the opportunity to personally visit an organic dairy farm in Pennsylvania U.S.A. producing more than 50000 litres /day. Organised sector in India would need infrastructure to procure this quantity of raw milk from more than 10/20 thousand small/marginal dairy farmers in their milk shed area. We need not literally follow advanced dairy countries and establish ultramodern hi-tech liquid milk plants investing crores of rupees for supplying pasteurized milk to consumers in India.

Video link: Kreider organic dairy farm in Pennsylvania U.S.A.

<https://youtu.be/SfXiDbxWOxU>

Proposed Solution of the problem under Indian conditions: Commercial dairy farms producing more than 500 litres of milk /day must be encouraged to become start up dairy business entrepreneurs. They can pasteurize raw whole buffalo or cow milk (without intermixing or dilution with added water) at their farm itself using innovative milk pasteurizer (designed by our Mission associate Improvement Innovations Unlimited Incorporated Canada and manufactured in India), recyclable temper proof glass bottles and environment friendly solar /biogas energy. They can easily produce pasteurized milk strictly conforming to international quality parameters relating to purity of contents, microbiological safety, and shelf life of two/three weeks (under refrigeration) besides ensuring perfect traceability from cow/buffalo to consumer.

Marketing Pasteurized milk conforming to international quality parameters under their own brand name duly approved by F.S.S.A.I., directly to consumers through informal consumer cooperatives in the nearby urban locations (without any middlemen in the marketing value chain) would be quite

feasible proposition and immensely helpful for them to improve profitability and sustainability of their existing dairy business here in India.

Please browse through or Mission presentation on the link below:

<https://www.facebook.com/photo?fbid=6671217909626063&set=a.1068549396559637>

<https://www.facebook.com/photo/?fbid=6682260758521778&set=a.1068549396559637>

Question A. Why does pasteurized milk available in the market in India have only limited shelf life and also needs boiling before consumption? Literally total milk handling cost on pasteurization thus goes waste from consumer's point of view because he cannot consume that milk safely without boiling.

(B) Why do the majority of health conscious urban milk consumers now prefer to purchase pure raw cow milk/buffalo milk from an ethical source and pasteurize that milk before consumption using home pasteurization method in their own kitchen. ?

Answer: A& B. since organised dairy sector in India could not successfully procure, process, and market microbiologically safe pasteurized milk strictly conforming to international quality specifications having a shelf life of two/three weeks for pasteurized milk so we could not legally ban supply of raw milk to consumer in our country .

Raw mixed milk (B.M +C.M.) being purchased by organised sectors in India containing unsafe added water, post pasteurisation contamination and distribution of processed milk in unrefrigerated vehicles is responsible for this problem. Milk actually reaching the consumers on their doorstep cannot be safely consumed as such without boiling.

Answer3. Milk consumers can be educated, trained and empowered to test purity of raw milk (five simple platform tests) before acceptance and pasteurize that pure milk in their own kitchen. Milk pasteurization is not a rocket science, so pure raw or chilled milk purchased from an ethical source (organised or unorganised sector) after proper testing can easily be pasteurized in our kitchen using home pasteurisation method so many educated milk consumers now prefer to follow this practice. Majority of our home makers have the knowledge and skill to convert such milk at home into commonly used value added products like Paneer, curd, butter, buttermilk, ghee, sweetmeats etc.

Health conscious urban consumers may please find some time out of their busy schedule to browse through our Mission video presentation "Solar powered milk plant in every home at Chandigarh" on the link below:

<https://www.youtube.com/watch?v=4yOq02S5kUs&t=8s> (Part-1)

<https://www.youtube.com/watch?v=T5itwZPcKS4> (Part-2)

<https://www.youtube.com/watch?v=tvHs6ILbw28&t=210s> (part-3)

Section III Dairy business entrepreneurs:

Q.No.1 we purchase raw mixed milk from milk producers/suppliers using conventional two axis formulae but why total milk solids in mixed milk do not tally with % of C.M & B.M. indicated on milk

bills and actual % of C.M. & B.M. corresponding to composite Fat % of mixed milk actually being received in our dairy plants?. Besides it, why do we need additional butter fat or skimmed milk powder to standardise that raw mixed milk as toned milk, standardised milk or Whole milk?

Q.No.2 Why even most modern milk processing plants managed by competent professional dairy experts in our country are not in position to supply pasteurized milk strictly conforming to international quality specifications relating purity of contents, microbiological safety and shelf life of two/three weeks when stored under refrigeration.?

Q.No.3. There is a clear visible profit margin of more than 20% especially for cooperative dairy plants purchasing raw milk directly from milk producers and marketing pasteurized milk in nearby urban markets. Why are most of these dairy plants either in loss or surviving with subsidy from respective state governments?

Q.No.4. Why have many iconic business entrepreneurs in India successful in every business other than dairy have in the recent past walked out of the dairy business after suffering heavy losses?

Answer Q.No.1 There is no instrument or technique available with any dairy plant/institution in India to know the true net worth of raw milk in liquid form based on exact% B.M, C.M. and added water in mixed milk actually reaching their dairy plant.

Proposed Solution of the problem: Software solution based on digital hydro analysis technique evolved by our Mission associate "Improvement Innovations Unlimited Incorporated Canada" can accurately analyse net worth of raw mixed milk based on exact% of cow milk, buffalo milk and added water. Our Mission would be willing to help ethical commercial/cooperative dairy plants to get digital hydro analysis of their monthly milk purchase transactions records from our Mission associate(free of cost) to eliminate undetected hidden loss due to manipulation of S.N.F: Fat ratio and dilution with added water. (Assuming no other adulteration except added water in raw mixed Milk)

Answer Q.No.2. Only a gold smith who knows how to purchase 100% pure gold, (24 ct.) can successfully produce and market gold /diamond jewellery meeting international quality standards. Similarly treating Fat as gold, S.N.F. As silver and water as priceless diluent, ethical dairy business entrepreneurs can learn the technique to procure on commercial scale 100% pure milk strictly conforming to international quality parameters. They can by upgrading milk processing / packing /marketing operations for eliminating post pasteurization contamination, delivering properly pasteurized milk in refrigerated vehicles on the door step of consumers thus empowering our dairy plants to confidently face emerging cut throat global competition.

Proposed solution of the problem: Our Mission with generous professional support of our Mission associates would be willing to help ethical commercial /cooperative dairy plants in India by providing online advisory services and training to professionally competent General Managers of their milk processing plants (free of cost) enabling them to implement " APNI DAIRY" transparent milk procurement system for procuring 100% pure raw milk without M.A.D. (Manipulation, Adulteration or Dilution) and produce pasteurized milk/value added dairy products strictly conforming to international quality requirements.

Answer Q.No.3. As per S.W.O.T. in an analysis of dairy business in India and digital hydro analysis of Milk purchase transactions of premier dairy institutions, we find that about 20% of the business profit opportunity is lost before raw mixed milk is received in the majority of the dairy plants in our country. Conventional/obsolete milk procurement system and faulty software based on empirical formulae for releasing milk payments to milk producers/suppliers is responsible for this easily controllable hidden loss, improving quality of raw milk and also bottom line financial results..

Proposed solution of the problem: Our Mission with generous support of financial experts(chartered accountants) supporting our Mission activities in Punjab/India, would be willing to provide online advisory services and training (free of cost) to professionally competent General Managers of ethical milk processing plants enabling them to implement Marwari concept “Partha system” for internal audit, performance budgeting, management by objectives and introducing result oriented performance evaluation system for all management executives working as departmental heads in their organisation.

Answer Q.No.4. Based on actual case studies of few private /cooperative / joint sector/corporate dairy plants in India we find prime reason for abnormally high loss in dairy business to these organisations has been purchase/ procurement of diluted/manipulated raw milk and conversion of added water as cow milk in mixed milk actually reaching their dairy plants (by manipulating natural S.N.F: Fat ratio of raw mixed milk in milk purchase transaction records)

Proposed solution of the problem: Before investing crores of rupees on establishing new mega dairy plant in India, these companies may select and appoint a dairy professional expert as C.E.O. of the company on probation or trial basis and hand over to him one loss making mini dairy plant asking him to improve its performance with his professional expertise and run that plant profitably.

Please browse through our Mission Presentation video on the link below:

Ethical dairy business plan for India to double the income of dairy farmers:

<https://www.youtube.com/watch?v=eU8y1bDaus> (Part-1)

https://www.youtube.com/watch?v=_nE7pCYZM6Y (Part-2)

Professional feedback, critical comments or suggestions on our Mission presentation received by us on email address iihumber@gmail.com would be highly appreciated and gratefully acknowledged.

We would once again, most humbly request all heads of premier dairy institutions of India to critically cross examine all our claims and contentions stated in this presentation and kindly submit their valuable recommendations directly to Honourable Prime Minister of India and all chief ministers of states in our country for protecting long term genuine interests of prime beneficiaries of dairy business and helping our motherland to win gold in dairy Olympics.

Wishing good health for milk consumers, wealth for needy milk producers and prosperity for ethical dairy business entrepreneurs.

Mission Director
International Improvement Mission