

Waste Water Characterisation of Milk Processing Industry

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Abstract: Contamination acknowledged by present day and dairy effluents is a genuine pressure all through the world (Braio and Granhem, 2007). Of every single mechanical improvement, the sustenance area has apparently the most astounding utilization of water and is perhaps the best maker of profluent per unit of creation regardless of conveying, other than to make a tremendous volume of seepage in like manner treatment (Ramjeawon, 2000). The dairy industry is an example of this segment. Dairy is an industry where milk is prepared and particular milk things are made. Dairy, in which the cleaning storerooms, tanks, heat exchangers, homogenizers, channels and other apparatus, prompts a lot of gushing with a high normal weight. This ordinary weight is commonly included by mil(raw material and dairy things), inorganic salts, synthetic substances, sanitizers utilized for washing mirroring a profluent with a great deal of mix oxygen request (COD), biochemical oxygen request (BOD), oils and oil, nitrogen and phosphorus than the fated farthest compasses of BIS.

Keywords : Dairy waste water, alkalinity, nitrates, water quality

I. INTRODUCTION

A. General

Water is an essential and one of the profitable regular resources of this planet, it is a prime prerequisite for human survival and mechanical improvement (Mc Arthur et.al. 2001) and it is fundamental for the nearness, survival and metabolic strategy of each living being. It is never unadulterated beside possibly in its vapors state (kiely, 2007, Mariappen et.al. 2005). The nature of water resources as a general rule depends upon its physical, substance and natural qualities (Buddhi et. al. 2004). Water quality expect a critical activity in the general water evening out of the earth [8],[10],[12]. With fast creating masses, industrialization and improved desires for ordinary solaces, the weight on water resources is extending (Kumar et .al. 2005). It was surveyed that in India the rate of sewage age was 120 liter/day in metropolitan urban networks and 60 liters/day per individual in urban territories .Water sometimes contains contaminating impacts; started from

both normal or conceivably anthropogenic is assigned "Contaminants"[13],[15],[17]. The effluents (wastewater) from industry, family unit,

Separated solids, suspended solids, chloride, sulfate, oil and oil, all things considered, endless supply of milk readied and sort of thing made. Waste water discharged from the milk getting ready unit is white in concealing, to some degree solvent in nature due to the stomach settling agents and chemicals used and become acidic due to the development of the milk sugar to lactic destructive. [19],[21],[23]. The ensuing low pH prompts the precipitation of casein

The suspended issue substance of milk waste is altogether a result of fine curd. The defilement effect of dairy wastes is credited to the brief and high oxygen demand. Rot of casein driving to the advancement of considerable dim filth's and strong butyric destructive fragrance portrays milkwaste pollution[5-10].

Dairy industry is one of the basic sustenance tries in India, and India positions first among the most phenomenal real milk passing on country (Tripathi and Upadhyay, 2003). Milk is the trademark sustenance for human and mammalian creature. It contains the hard and fast upgrade, for example, protein, supplement, starch and fat (Potter and Study of Waste Water Hotchkiss,1995). The milk is one of the most critical thing entering exchanges and it is required in typical regular nearness as an article of sustenance. Since milk is extraordinarily transient, real broad thriving and budgetary thought is necessitated that customer ought to be given the thing which is of good quality, unadulterated, free from pathogenic microorganisms [14],[16], [18].

- To assemble the model from dairy industry
- To separate and consider the wastewater exuding from Dairy Industry Milk Dairy Effluents

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3. In acknowledgment of our duty to the future ages to give contamination free condition.

II. RESULTS AND DISCUSSIONS

S.NO	PARAMETERS	STANDAR D VALUES	TESTED SAMPLE
1.	pH	6.5-8.5	6.53
2.	Total solids	2000mg/l	1900mg/l
3.	Total dissolved solids	2000mg/l	2100mg/l
4.	Alkalinity	600mg/l	1050mg/l
5.	Hardness	600mg/l	1200mg/l
6.	C.O.D	250mg/l	115mg/l
7.	B.O.D	190-763mg/l	665mg/l
8.	Ammonia	0.5mg/l	1mg/l
9.	Fluoride	1.5mg/l	1mg/l

Treatment Preventive Attitudes Wastewater Sources and Characteristics Clean water

A collection of "clean" water discharges are made by dairy taking care of exercises. These join storm water, cooling water[2],[4],[6], condensate (steam and evaporator), and immerses from layer channels. These "flawless" waters are regularly degraded to various degrees and may require treatment going before discharge or reuse. [32],[34]

B Preventive Attitudes

Cleaning by strategies for the Clean in Place (CIP) framework and the reuse and the reusing of water are events of techniques which reduction the volumetric coefficient. It obliged water use, in the greater part of the strategies; regardless, there were several exemptions, for example, a couple of trucks that were not adjusted with a "sprinkle bowl" for washing by the CIP framework. [31],[33] In addition, the shower dryer was worked physically rather than typically, which depleted a huge amount of water [10], [11]. The activity proposed in two exceptional ways:

- (1) A lessening in water use and
- (2) Minimization of the characteristic weight.

III. CONCLUSION

end it might be expressed that gushing treatment should be done predominantly because of this reason.

- 1. To maintain a strategic distance from the evil impact of released untreated gushing into nature.
- 2. To fulfill the statutory prerequisites of the state contamination control board and central pollution control board.

REFERENCES

1. Iyappan L., Dayakar P., Identification of landslide prone zone for coonoortalukusing spatial technology, International Journal of Applied Engineering Research, V-9, I-22, PP-5724-5732, Y-2014.
2. Kumar J., Sathish Kumar K., Dayakar P., Effect of microsilica on high strength concrete, International Journal of Applied Engineering Research, V-9, I-22, PP-5427-5432, Y-2014.
3. Dayakar P., Vijay Ruthrpathi G., Prakesh J., Management of bio-medical waste, International Journal of Applied Engineering Research, V-9, I-22, PP-5518-5526, Y-2014.
4. Swaminathan N., Dayakar P., Resource optimization in construction project, International Journal of Applied Engineering Research, V-9, I-22, PP-5546-5551, Y-2014.
5. Venkat Raman K., Dayakar P., Raju K.V.B., An experimental study on effect of cone diameters in penetration test on sandy soil, International Journal of Civil Engineering and Technology, V-8, I-8, PP-1581-1588, Y-2017.
6. Saritha B., Chockalingam M.P., Photodradation of malachite green DYE using TiO2/activated carbon composite, International Journal of Civil Engineering and Technology, V-8, I-8, PP-156-163, Y-2017
7. Shendge R.B., Chockalingam M.P., Saritha B., Ambica A., Swat modelling for sediment yield: A case study of Ujjani reservoir in Maharashtra, India, International Journal of Civil Engineering and Technology, V-9, I-1, PP-245-252, Y-2018
8. Chockalingam M.P., Balamurgan V., Modernisation of an existing urban road-sector in Chennai, a case study report, International Journal of Civil Engineering and Technology, V-8, I-8, PP-1457-1467, Y-2017
9. Saritha B., Chockalingam M.P., Adsorption study on removal of basic dye by modified coconut shell adsorbent, International Journal of Civil Engineering and Technology, V-8, I-8, PP-1370-1374, Y-2017
10. Saritha B., Chockalingam M.P., Adsorptive removal of heavy metal chromium from aqueous medium using modified natural adsorbent, International Journal of Civil Engineering and Technology, V-8, I-8, PP-1382-1387, Y-2017
11. Chockalingam M.P., Palanivelraja S., Retrospective analysis of a theoretical model used for forecasting future air quality near the north Chennai thermal power plant, International Journal of Civil Engineering and Technology, V-8, I-8, PP-1457-1467, Y-2017
12. Saritha B., Chockalingam M.P., Photodegradation of methylene blue dye in aqueous medium by Fe-AC/TiO2 Composite, Nature Environment and Pollution Technology, V-17, I-4, PP-1259-1265, Y-2018
13. Shendge R.B., Chockalingam M.P., Kaviya B., Ambica A., Estimates of potential evapotranspiration rates by three methods in upper Bhima Basin, In Maharashtra, India, International Journal of Civil Engineering and Technology, V-9, I-2, PP-475-480, Y-2018
14. Shendge R.B., Chockalingam M.P., The soil and water assessment tool for Ujjani Reservoir, International Journal of Mechanical Engineering and Technology, V-9, I-2, PP-354-359, Y-2018
15. Shendge R.B., Chockalingam M.P., A review on soil and water assessment tool, International Journal of Mechanical Engineering and Technology, V-9, I-2, PP-347-353, Y-2018
16. Sachithanandam P., Meikandaan T.P., Srividya T., Steel framed multi storey residential building analysis and design, International Journal of Applied Engineering Research, V-9, I-22, PP-5527-5529, Y-2014
17. Meikandaan T.P., Ramachandra Murthy A., Study of damaged RC beams repaired by bonding of CFRP laminates, International Journal of Civil Engineering and Technology, V-8, I-2, PP-470-486, Y-2017
18. Meikandaan T.P., Ramachandra Murthy A., Retrofitting of reinforced concrete beams using GFRP overlays, International Journal of Civil Engineering and Technology, V-8, I-2, PP-423-439, Y-2017
19. Meikandaan T.P., Ramachandra Murthy A., Flexural behaviour of RC beam wrapped with GFRP sheets, International Journal of Civil Engineering and Technology, V-8, I-2, PP-452-469, Y-2017
20. Meikandaan T.P., Murthy A.R., Experimental study on strengthening of rc beams using glass Fiber, International Journal of Civil Engineering and



Technology,V-9,I-11,PP-959-965,Y-2018

21. Meikandaan T.P., Hemapriya M.,Use of glass FRP sheets as external flexural reinforcement in RCC Beam,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1485-1501,Y-2017
22. Saraswathy R., Saritha B.,Planning of integrated satellite township at Thirumazhisai,International Journal of Applied Engineering Research,V-9,I-22,PP-5558-5560,Y-2014
23. Saritha B., Ilayaraja K., Eqyaabal Z.,Geo textiles and geo synthetics for soil reinforcement,International Journal of Applied Engineering Research,V-9,I-22,PP-5533-5536,Y-2014
24. Ambica A., Saritha B., Changring G., Singh N B., Rajen M., Salman Md.,Analysis of groundwater quality in and around Tambaram taluk, Kancheepuram district,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1362-1369,Y-2017
25. Arunya A., Sarayu K., Ramachandra Murthy A., Iyer N.R.,Enhancement of durability properties of bioconcrete incorporated with nano silica,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1388-1394,Y-2017
26. Ilayaraja K., Krishnamurthy R.R., Jayaprakash M., Velmurugan P.M., Muthuraj S.,Characterization of the 26 December 2004 tsunami deposits in Andaman Islands (Bay of Bengal, India),Environmental Earth Sciences,V-66,I-8,PP-2459-2476,Y-2012
27. Ilayaraja K.,Morphometric parameters of micro watershed in Paravanar sub-basin, Cuddalore District,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1444-1449,Y-2017
28. Ilayaraja K., Singh R.K., Rana N., Chauhan R., Sutradhar N.,Site suitability assessment for residential areas in south Chennai region using remote sensing and GIS techniques,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1468-1475,Y-2017
29. Ilayaraja K., Reza W., Kumar V., Paul S., Chowdhary R.,Estimation of land surface temperature of Chennai metropolitan area using Landsat images,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1450-1456,Y-2017
30. Chitra R.,Experimental study on beam using steel fiber and latex,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1395-1403,Y-2017
31. Chitra R.,Analysis of traffic and management at Kovilambakkam intersection,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1433-1443,Y-2017
32. Aswathy M.,Experimental study on light weight foamed concrete,International Journal of Civil Engineering and Technology,V-8,I-8,PP-1404-1412,Y-2017
33. Aswathy M.,Wastewater treatment using constructed wetland with water lettuce (Eichornia Crasipies),International Journal of Civil Engineering and Technology,V-8,I-8,PP-1413-1421,Y-2017
34. Kiruthiga K., Anandh K.S., Gunasekaran K, Assessment of influencing factors on improving effectiveness and productivity of construction engineers, 2015, International Journal of Applied Engineering Research, V - 10,I -17,p -13849-13854.

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