ANALYSIS OF MILK QUALITY AND DISPLAY RESULT ON WEBPAGE

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***Abstract*: The milk is the dietary fluid secreted by the mammary gland of mammals. The high quality milk must have better density and is free from the adulterants. Milk is most commercially sold commodity both by local vendor's as well super markets. However in local areas there is increase in the yield certain adulterants are added which may affect the nutritional quality of milk. Milk adulteration is a social problem. Consumption of adulterated milk causes serious problems to human health and a great concern to the food industry. The Country milk producers and consumers facing problem to find the quality of milk, accept the fair of price and consumption. So it is necessary to ensure the quality of milk by measuring type and amount of adulterants that are added to the milk. This is performed by using combined electronic sensory instrumental system such as electronic nose (enose), electronic tongue (e-tongue) and PH electrodes.This project is implemented using PIC18F4520 microcontroller. All the sensors are combined to form compact and flexible system which analyze the Quality of Milk and classify it into different grades and display it to them on LCD screen. Problem faced in small diaries and by the individuals can be prevented by detecting the quality of milk, and also prevent from causing the hazardous diseases by detecting the adulteration of milk After identifying the quality of the milk creation of the [Data-Base] of particular milk man and milk vendor according to its Quality so if the dairy receives adultered milk ,milk procuring stations it will identify it through this and will get an idea of the milk collected into them as per the reading will upload on database is will be connected to the webpage which would be even helpful to the vendor to knw their Quality of milk.**

1 INTRODUCTION

Milk is a pale liquid produced by the mammary glands of mammals. It is the primary source of nutrition for infant mammals before they are able to digest other types of food. Early lactation milk contains colostrums, which carries the mother's antibodies to its young and can reduce the risk of many diseases. The principal constituents of milk constitutes of carbohydrate, fat, protein, vitamins and minerals, enzymes etc. The composition of milk varies considerably with the breed of cow, stage of lactation, feed, season of the year, and many other factors. However, some relationships between constituents are very stable and can be used to indicate whether any tampering with the milk composition has occurred. The pH of milk ranges from 6.5 to 6.8 and it changes over time. Milk from other bovines and non-bovine mammals varies in composition, but has a similar pH.

Like composition, fat globules vary in size from less than 0.2 to about 15 micrometers in diameter between different species. Diameter may also vary between animals within a species and at different times within a milking of a single animal. In un homogenized cow's milk, the fat globules have an average diameter of two to four micrometers and with homogenization, average around 0.4 micrometers. The fatsoluble vitamins A, D, E, and K along with essential fatty acids such as linoleic and linolenic acid are found within the milk fat portion of the milk. And this grading will be display on web page with its particular milk vendor [id].

II. AIMS/OBJECTIVES

The main objectives, to work on this project are,

- User-friendly system.
- Responsive design**.**
- Give results of milk.
- Analyzie the qaulity of milk
- Helps to over come problem of identifing milk

Moduls of project:-

Module 1: Circuit diagram and design of milk anaylising instrument.

In the module 1 we will design the hardware of milk analysing tester to test the quality of the milk.

- pH Electrod
- pH Sensor
- lacto Meter

- Temperature Sensor(DS18B20)

Module 2: Interfacing and Coding

After the completion of milk testing circuit on bread board.We will check that is connected to microcontroller.And than we will see in this model coding for all the sensor is done in software of **Arduinuo IDE.**

- The microcontroller used here is PIC18F4520.
- Programming is done using embedded C.

Module 3: Connecting with database

After testing the milk the values of milk like pH and temperature and lacto Meter this values are send to PHP my admin and created add data.

Module 4: Data display on webpage

- **Administration login**
- **Customer logs.**
- **Create new login of customers.**
- **Display readings of registered customer**

Result/Decleration

- Display sensors data in MS-Excel sheet.
- **Technical Feasibility-** Store sensors data into database.
- **Economic Feasibility-** Building low-cost smart Milk quality testing.

Table: Materials used

Name of Equipment	Specification	Cost	Available
Laptop / Desktop	i3 processor, 4 GB RAM, Kbd, Mouse, 540 GB HDD	Rs 35000	Yes
Operating System	Windows 10 proper setup	-	Yes
Visual studio code	17.0	Free	Yes
Wampp server	3.2.3.0	Free	Yes
Proper PHP setup	Proper setup in vs code	Free	Yes
Firefox/Chrome	Latest version	Free	Yes
Localhost	80 or 3306 port	Free	Yes
pH sensor	BNC SL-31	Rs 800	Yes
pH sensor board.	-	Rs700	Yes
Liquid Temperature sensor	DS18B20	Rs 250	Yes
Voltage Regulator	7805	Rs 100	Yes
Breadboard	mal	Rs 100	Yes
Database	MS-Excel		-
Total		**Rs 37895**	

PLACE OF WORK:

- For designing software:
  - Sanjay Bhokare Group Of Institute's software Lab

- For developing hardware.
    - Sanjay Bhokare Group Of Institute's Electronics Lab

Conclusion

This Project is implemented using the PIC IC
PIC 18F4520. All the sensors Are combined to form compact and flexible system which analyse and classify the quality of the milk salmples into grades and display it on webpage

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