AUTOMATIC MILK COLLECTION SYSTEM

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ABSTRACT

Nowadays the world is more faster. In daily life requirements of milk is also increasing So this proposed system will change indian farmers lifestyle . Agriculture is strength of country and The main joint business of indian farmer's is dairy farming. Dairies are collected milk from farmer everyday and payments are made on the basis of rate per liter. The rate's are depend on different parameter like weight, FAT, adulteration . More be the fats, more be the price. For this reason there is a huge level of corruption in milk collection center. Milk collection center gives daily receipt of milk information so there is wastage of paper also .It is also observed that if milk collection center gives more facility to the farmers, farmers takes more interest in it. So for that reason. So that in our system we have given option to the farmer, so that they can order cattle feed.

Here we use concept of adhar card for identification of each farmer. Our system will measure these parameters correctly and calculation is also done automatically. In our system there is a direct communication between dairy and farmer. Automated corruption free milk parameter monitoring and collection with paperless receipt is main aim of our project.

***Keywords*—FAT, weight, Adulteration, Milk collection center, cash counter**

I.INTRODUCTION

In dairy plants all farmers bring milk for selling it to dairy Lets consider an example,

suppose dairy gives rate 7Rs/ltr to milk having fat 3,
10 Rs/Ltr for fat 4,
12 Rs/ltr for fat 5,
15 Rs/ltr for fat 6,
& 18 Rs/ltr for fat 7.

Employees of the dairy checks the fat contents and decides the appropriate rate for the milk.
Suppose one farmer daily brings 500 litre milk to dairy and suppose that milk has fat 4 only so he should get rate of 10 Rs/ltr but if he gives bribe of 1000 Rs to the
employee of dairy and force him to consider fat contents to be fat 6 then the milk rate will be 15 Rs/ltr.
In this way instead of getting 5000 Rs farmer gets 7500 Rs by giving bribe to the employee, so the loss of dairy is 2500Rs from single farmer daily and 75000 Rs loss monthly. there are so many farmers gives milk to dairy on daily basis. In this process there is a profit of one farmer but there is a loss of many farmers and dairy. Also for our profit some farmer's and middleman added adulterant content such as urea ,detergent which is harmful to human health. So this is huge loss of dairy due to corruption in the system. This is the main reason for dairy plants to become bankrupt.
Thus to avoid the corruption in dairy plant and improve the quality and service of dairy plant we develop this system. This system also gives all detail information of each farmer including amount of milk with fat content through GUI on pc monitor, this information is also send to the chairman of dairy plant through GSM.

Instead of using the method of centrifugal pump we used principle of optical scattering for measuring fat content of the milk. For measuring adulteration in the milk we have use the principle of PH sensor instead of chemical method. Instead of giving receipt to each farmer about milk information we uploaded this information on the web and also the message will be send to the farmer. For identification we have used adhar card instead of giving unique number to each farmer.

II .MOTIVATION OF PROJECT

The main joint business of indian farmer is dairy farming. Shortage of feed, lack of marketing facilities, middleman eat all the profits are some of the problems of indian farmers. In our country many milk collection centers do not have the milk parameter measuring equipments so the sample of milk for testing is stored in bottles& tested only after milk collection process is over, so there is a loss of farmers. In milk collection systems after testing of milk the data is written in book but using pen and this may introduce some human errors in it. Hence a request from the farmer to reduce above manual work & increase the measuring speed The motivation of our project is to get more profit to the farmer.

III.LITERATURE SURVEY

Existing methods for detection of adulteration

A]Chemical method

(a)Qualitative estimation- Urea is one of the natural constituent of milk and is present to an extent of 70 mg per 100 ml (700 ppm). TCA is added to precipitate the proteins in the milk. For the estimation of urea in milk, a test based on the use of DMAB is performed .This method is based on the principle that urea forms a yellow complex with DMAB in a low acidic solution at room temperature. It is a preliminary test Also, other drawbacks being wastage of chemicals and possibility of human contact with harmful reactants.[1]

B]Working principle:

In solution H+ ion concentration is measured by PH sensor. Temperature sensor, reference electrodes and measuring electrode are three main components for PH measurement sensor .At certain amplitude preamplifier amplifies the mill volt signal at electrode. The positive terminal is measuring electrode and negative is reference electrode. Measuring electrode is sensitive to hydrogen ion and develop voltage directly to hydrogen ion concentration at solution .reference electrode provides stable potential. When immersed in solution the reference electrode make contact with solution and measuring electrode through junction.[1]

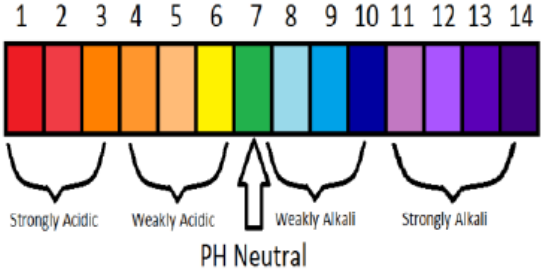


Fig1.PH probe

Existing method for Fat Measurement:

A] Gerber method

Chemical method is used for measuring fat contents in milk. In this method we use acid for measuring fat. In butyrometer we take10ml of H2SO4, 10.75ml milk & 1ml Isoamyl alcohol. Then the butyrometer tube is placed in the centrifuge instrument, and after 5min we will get the fat contents in the milk. This method is called as Gerber method. For this method proper mixture of acid should be maintained to get proper results.[2]

B] Centrifugal Pump Method

The centrifuge is device in which centrifugal motor and on the shaft a provision is made for connecting the ten tubes. The motor is run at its rated speed for near about 5 minutes. After this process we will get the fat contents floating on the topside of sample.[2]

C]Working Principle

In Fat sensor we are using the principal of the optical scattering when optical light passes over fat then it scatters & this passed light intensity we are measuring using LDR(Light Dependent Resistor).[2]

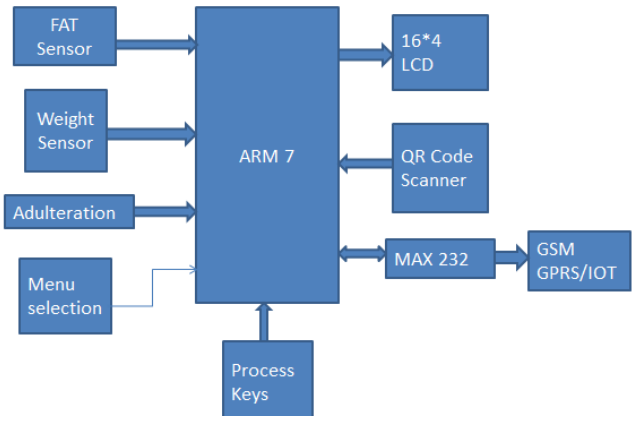
Weight measurement

A]Electronic method for weight measurement

For measuring weight of the milk we are using load cell to calculate weight of the milk .Actually we are using strain gauge to calculate weight when milk is put on the load cell

it generate the appropriate voltage at the output and weight is calculated.[2]

IV. PROPOSED BLOCK DIAGRAM



Block diagram description:

1] Sensor : There are three types of sensor which are FAT, weight ,adulteration sensor.

2]QR code scanner**:** In the present age, identification becomes easier using Aadhar card. hence we identify each farmer by his Aadhar card proof, and register into the microcontroller his identification.

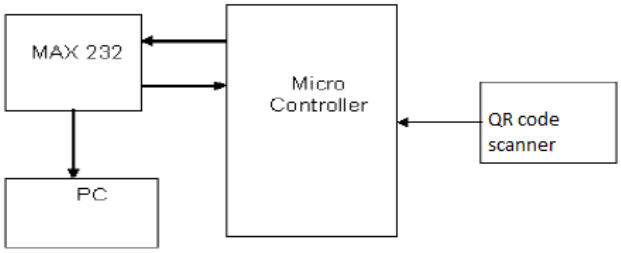
3]Menu selection: The microcontroller provides client various options from which client can select his choice and proceed for further operation. Microcontroller provides options that the milk brought by the farmer is cow's or buffalow's milk .Another option that microcontroller provides is the ordering of cattle feed. It allows farmer to buy the feed desired.

4] LPC2148: ARM controller collect data from fat sensor and weight sensor process on it and the total amount to be paid to the farmer is also calculated. ARM is used for high speed purpose. Also in ARM we can interface two serial devices .Power consumption of ARM is 0.06mw/MHZ.

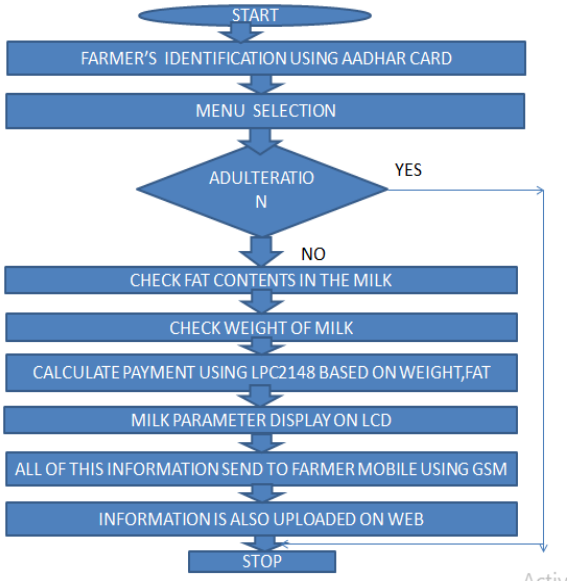
5] LCD**:** Here we use 16*4 LCD. It is used for user interface purpose. LCD will display amount along with weight , fat ,adulteration contents. It also display process is completed and user is valid or not.[9]

6]GSM: The various factors such as fat ,weight and adulteration will be calculated by the microcontroller and through GSM system transfer to the main dairy. GSM also send message on the farmer's mobile about milk information.[10]

Milk collection center:



FLOWCHART



V.ADVANTAGES:

1.Saves time: The calculation of milk parameter like weight, fat is done within 50 seconds. So it saves time.

2.Increase accuracy: The measurement is done with the help of electronic techniques. So accuracy will increase.

3.Eliminate paperwork: System will measure the parameters and calculate the payment automatically .So paperwork will be eliminate.

4.On time delivery: Farmer can order cattle feed any time .So on time delivery will be possible.

VI.RESULTS

AADHAR NO	123456789
NAME	STUDENT
ADULTERTION	NO
WEIGHT	30
FAT	9

VII.CONCLUSION

1.Our proposed system comprises to increase accuracy eliminate paper work, save time, on time delivery of the cattle feed .
2.There is direct communication between main dairy and farmers.

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