Summary
Khoa is produced by a continuous heating till a semi-solid substance is produced. At Jhansi most of the product comes from near by villages. The chemical composition and the degree of heat treatment were not been standardized. Therefore the product could not be kept on sound footings. Serious attempts should be made for its method of manufacture, chemical composition, microbial quality and shelf life. Fat, protein, moisture and dry matter are the major components. Today Khoa production is about 300 million kilograms worth 500 crores. Its largest amount is produced in Uttar Pradesh. Which produces 36% of the total Khoa production. At Jhansi three varieties of Khoa that is Desi, Agra and Shivpuri are available. It’s differing in quality, color and texture. Microbial studies are important to assess the standard of hygienic conditions during handling, transporting and storage. Moulds and yeasts are undesirable because they
produce discoloration and lipolytic effect. It's a perishable article which should be consumed within two days and therefore required serious investigations so that its shelf life could be increased. With this objective the present work has been undertaken. Through the following experiments.

1. **Physical and Sensory Characters**-

   Studies were conducted on the two varieties of Khoa available at Jhansi which is Danedar and Pindi variety. Danedar variety has white, soft, with granular texture, loose with sweet, smell in taste. Pindi variety was yellowish in color, hard, sticky in texture, dough, oily in smell and taste.

2. **Mineral Components** –

   In both the varieties data's were obtained for ash, calcium, magnesium, phosphorous, citrate, sodium, potassium, chloride, copper and iron contents in milligrams per hundred grams. The values obtained are given in Table - II. Calcium was 621 and 705, magnesium 3.65 and 65.03, sodium 162 and 176, potassium 336 and 342, phosphorous 373 and 368, citrate 535 and 503, chloride 327 and 321, copper 0.17 and 0.12, while iron 2.35 and 2.15 in Danedar and Pindi variety respectively. The difference might be due to the quality of milk used extent of desiccation and method of preparation.

3. **Vitamins Content** –

   The water soluble vitamins in buffalo milk, Danedar and Pindi Khoa was determined so that loss of vitamins could be analyzed.
Thiamine was 97.848 and 95.54, riboflavin 392.98 and 388.88, vitamin B₆ 72.495 and 70.49, follic acid 8.84 and 8.43, vitamin C 9.96 and 7.81 respectively in Danedar and Pindi variety. When compared to the content of milk the loss was of vitamin in Danedar and Pindi variety for thiamine was 30.2 and 33.5 for riboflavin 67.07 and 71.05, for vitamin B₆ 19.5 and 21.6, follic acid 4.23 and 4.67, vitamin C 1.4 and 3.6 μ gm per 100 gm respectively. The loss of vitamin B₆ and vitamin C may be due to the effect of the sunlight and fluorescent light. The loss in thiamine and riboflavin may be due to oxidation of these substances.

4. Physico-chemical properties-

Among the physico chemical properties pH, dry matter, protein, fat and ash percentage were obtained for Danedar and Pindi variety of Khoa and has been given in Table - I B. pH of both the variety were almost equal with 6.7 and 6.8, dry matter 59.7 and 70.5, moisture content 40.2 and 37 protein 31.5 and 29.0, fat 24.9 and 28.70, ash 1.89 and 2.81 in Danedar and Pindi variety respectively. The variations in both the varieties are due to the type of milk used and their amount of desiccation.

1. Biochemical group of Organisms –

Quantitive estimation of total count, acid producers, proteolytic, chromogenic, thermophilic, lipolytic, spore count, yeast and mould count, Coliform count and enterococcus counts in both Danedar and Pindi variety. Total counts were 24 and 41.71, acid producers 30.3 and 23.2, proteolytic 28.2 are 21.4, chromogenic 27.31 and 17.9, thermophilic 0.12 and 0.29, lipolytic 16.1 and 32.43, spore count 0.03 and 0.41, yeast and mould count 0.021 and 0.015, enterococcus 0.053 and 36.87. These results indicate that Danedar variety has more acid producers, proteolytic
count and chromogenic counts. It may be due to the fact that this variety is produced from milk which is slightly acidic. The Pindi variety had higher lipolytic counts because it has the high lipid content and the milk used for this variety has high fat content. The presence of yeast and moulds is objectionable since they produce discoloration and lipolytic objects. They develop due to post manufacture contamination.

Microbial Analysis

a. **Bacteria and moulds during storage**

In this experiment total count of bacteria, moulds and Coliform after 2, 4, and 8 days of storage. The results obtained clearly indicate that the number increased with the increase in days of storage. The numbers were higher of each organism in Pindi variety then in Danedar variety. The presence of moulds and Coliform organisms show the hygienic conditions during post manufacture conditions. The total count of Pindi variety ranged from $41 \times 10^3$ to $108 \times 10^3$ in Danedar variety it is $24 \times 10^3$ to $64 \times 10^3$, yeast and moulds were 37 to 83 and 21 to 68 in Pindi and Danedar variety respectively. The Coliform count ranged between 15 and 21 and 12 and 19 in Pindi and Danedar variety. This experiment was conducted for qualitative estimation of yeast and moulds together to the affect of sugar on the number of individual organisms. The organisms found in Pindi and Danedar variety were *Saccharomyces cerevisiae*, *Candida lipolytica*, *Rhodotorulla glutinis*, *Torolopsis sp.*, *Cryptococcus albidus*, *Aspergillus niger*, *Geotrichum candidum*, *Mucor mucido*, *Syncephalastrum racimosum*, *Fusarium sp.*, *Rhizopus nigricans* and *Cladosporium* are there. The dominant organisms were *Rhodotorula glutins*, *Saccharomyces cerevisiae*, *Candida lipolytica*, *Aspergillus niger*, *...*
Geotrichum candidum, Syncephalastrum racemosum. With the addition of sugar there was a mark reduction in a number of each organisms. It appears that bacterial organisms produced acidity which may have favorable environments for yeast and moulds. Their presence also shows the unhygienic conditions prevailing during manufacture and subsequent storage.

(b) Identification of Bacterial Isolates-

Organisms isolated from the two varieties of Khoa were collected and identified on morphological and biochemical characteristics. For morphological analysis Grams stain, shape, motility and spore formation was taken as criteria and for bio-chemical parameters for enzyme producing capabilities for lactose, catalase, gas forming, voges prouskar, citrate, indole, oxidase, H₂S and DNAase were observed. On these basis 6 organisms were identified these were E.coli, Klebsiella, Enterobacter, Citrobacter, Staphylococcus and Salmonella. The dominant organisms were E. coli and Klebsiella followed by Staphylococcus, Enterobacter, Citrobacter and least were Salmonella. The presence of Coliform, Salmonella and Staphylococcus again point towards unhygienic conditions during manufacture and storage.

(c) Total Viable Count of Bacteria and Staphylococcus-

This experiment is performed to have the total viable count and Staphylococcus so that their proportions to the total viable count could be estimated. The total bacterial count in Pindi and Danedar variety is 41x10³ respectively. The staphylococcal counts were 400 and 300 per gram respectively. This showed that the proportion was 0.9 to 1.5 as compared to the total number. This number is though very small but since
their toxin producing organisms hence their number should be reduced or they should be absent. As there presence may cause a serious health hazards. Their percentage occurrences were found to be 12.5 in Pindi variety and 6.2 in Danedar variety, which is not very safe.

(d) **Group of *Staphylococcus* at the Varying Temperature and Percentage Moisture for One to Two days.-**

The quantity of *Staphylococcus* organisms were observed at 35 and 5°C temperature for 24 and 48 hrs at moisture level 26 to 28%, 38 to 42%, and 35 to 48%. For this experiment Khoa was adjusted to the above moisture level and were inoculated with 4 x 10³, staphylococcal organisms isolated from Khoa. At 26 to 28% moisture the number increase to 5 x 10⁷, at 35°C temperature after 2 days. While at 5°C at the same moisture level they were 3 x 10⁴ with sugar at 35°C temperature their number reduce to 5 x 10⁶ and at 5°C temperature 3 x 10³ similarly at 38 to 42% moisture and 45 to 48% moisture the number observed at 35°C temperature was much higher then at 5°C temperature. Similarly when sugar was added the number was again reduced at both the temperature. This show that the low temperature as well as adding sugar work in the same manner. In both the cases the amount of available water is reduced. The above results were of Pindi variety Khoa.

(e) **Total Count of Bacteria and Moulds at the Varying Temperature -**

After 2, 4 and 8 days of storage the total counts were observed at 37, 30, 22 and 5°C temperature. The total bacterial counts and yeast and mould counts decreased with decrease in temperature. In Pindi variety the total count at 37°C temperature was 118 x 10³, which reduces to 18 x 10³
at 5°C temperature. This observation was after 8 days of storage. In Danedar variety at 37°C temperature after 8 days the total count was 70 x 10^3, which was reduce to 12 x 10^3 at 5°C temperature. Similarly yeast and mould at 37°C were 101 after 8 days and at 5°C the number reduced to 28. In Danedar variety their number was 60 after 8 days at storage at 37°C temperature this reduce to 15 after 8 days at 5°C temperature. This experiment shows that the rate of growth is more at high and slow at 5°C temperature. Therefore their storage during transport and disposal should be at 5°C temperature.

(f) Variations in Chemical Properties Under Long Term Storage Under Refrigeration-

The chemical properties worked out during this experiment were pH, dry matter, moisture content, protein, fat and ash percentage were considered after 3, 6, 21 and 30 days. During this experiment it was observed that the percentage of ash, fat, protein had not much difference pH also remained almost the same, dry matter slightly decreased while the moisture content increased. In Danedar Khoa but in Pindi variety its percentage decreased.

(g) Sugar Content Verses Microbial Population During Storage.-

This experiment was conducted for bacterial and moulds count at 30, 40 and 50% sugar concentration after 3, 6, 9 and 12 days. It was observed that increase in sugar concentration decrease the number of organisms per gram of Khoa for both bacterial mould and fungal count of Khoa. From the overall study it is clear that increase in sugar concentration has inhibitory effect on the growth of microorganisms and thus can be used for preserving Khoa and the results in Table - XVII. It
can be observed that during as the days of storage increased the growth of yeast and moulds increased more rapidly than bacterial organisms. This type of behavior could be related to the reduction of available water during storage since bacterial populations decreased. This reduced the competition of yeast and moulds which shows faster growth as they can fastest grow in reduced available water. The addition sugar at 15% concentration improves the keeping quality of Khoa four times and therefore it can be concluded that the addition of 30, 40 and 50% sugar reduced the available water significantly and increase the shelf life 3, 4 and 7 times respectively.

(h) **Effect of Antifungal Agents and Storage of Khoa**

In this experiment potassium sorbate 2%, 3%, Boric acid, 1% Gentamycin 2% and streptomycin 0.2% were studied at 30 and 5°C and their effect in storage at 21°C were studied and control measures side by side where no antifungal substances were added. In this experiment potassium sorbate at 0.3% concentration, Boric acid 1% and Gentamycin 0.2% shows good results which reduced the number of organisms belonging to both bacteria and fungi. From these studies it can be said that addition of these antifungal substances could increase the shelf life up to 12 days at 30°C and 21 days 5 to 6°C temperature and at the same time will reduce the production of toxin if any from these organisms.

(i) **Effect of Antimicrobial Agents and Chemical Constituents of Khoa**

This experiment was conducted to see the effect of these promising antimicrobial substances on the chemical constituents of Khoa up to 21 days of storage. The analysis for alteration in pH, dry matter, fat,
moisture, protein and ash percentage has done after every weak up to 21 days. The Data’s obtained it will be evidence that ash content remain almost the same pH, moisture and fat gradually reduced but not much while dry matter and protein slightly increase. The results as shown in Table - XIX indicate that by using these substances the chemical constituents are not markily effected as such they can be used for preservation.

(j) **Inhibitory Effect of Antibiotic on Bacterial Isolated** -

During this study antibiotic such as Penicillin, and streptomycin, chlorophanicol, gentamycin, erythromycin, tetracycline were screened against *E.coli, Klebsiella, Enterobacter, Staphylococcus, Salmonella*. The results as obtained in Table- XX shows that *Streptomycin*, chlorophanicol and gentamycin were found to have most promising results. Gentamycin was most effective followed by streptomycin, chlorophanicol. When again gentamycin was good as in the previous experiment. It can be used to inhibit the colifrom as well as enterotoxin production organisms.

(k) **MIC of Effective Antibiotics** –

In this experiment MIC concentration of streptomycin, chlorofanicol and gentamycin were evaluated against some bacterial isolates. In this study again gentamycin reproduced the least minimum concentration required for inhibition of microorganisms. Its concentration can be used in 0.5 it is clear that these antimicrobial substances could be used to increase the shelf life either singly or in combinations.
Sugar Content Verses Microbial Population During Storage—

This experiment was conducted to study the effect of sugar on the population of organisms during storage. The quantity of sugar added was 30%, 40% and 50% and the data's on bacterial count and yeast and mould count were obtained after fresh 3 days, 6 days, 9 days and 12 days. When fresh without sugar to controlled had 31.70 x 10^3, 41.70 x 10^3 bacterial organisms and 37 yeast and mould count. This increased in 30% sugar to 43.3 x 10^3 after 3 days, bacterial count was 45.36 x 10^3, after 9 days the count gradually increased to 47.03 x 10^3, after 12 days the number was 48.37 x 10^3 in 40% sugar concentration at the initial stage the number noted was 43.2 x 10^3. This shows that with the increase in concentration of sugar the number of bacterial count decreased. In 40% sugar after 12 days of storage the number of bacterial count gradually increased to 40.11 x 10^3 at 50% concentration on the initial population of 25.3 x 10^3 the count increased to 38.66 x 10^3 after 12 days. On every occasion that is after 3, 6, 9 and 12 days it was found that with the increase in concentration the total count gradually increased with increase in the days of storage. Similar was the trend found in yeast and moulds. The initial count of moulds were 37 per gm of Khoa, which in 30% concentration was 32.10 in 40% sugar the mould count was 23.36. These values after 12 days of storage were 78.56, 70.17 and 50.35 respectively. From the overall studies it appears that sugar increases the concentration of Khoa and therefore place and inhibitory role in the growth of microorganism and it can be used as a growth inhibitory substance for preserving Khoa. The results of the present investigation closely agreed with the result of Kumar et.al; (1975) from the Table results obtained indicate that after the storage of Khoa increases the growth of yeast and moulds increased more
rapidly then the growth of bacterial organisms. This type of behavior could be related due to the reduction in available water during storage. As the growth period increased available water decreased this restricted the growth of bacteria reducing the competition of yeast and moulds which then shows faster growth as they could grow at reduced available water. Beuchat (1983) indicated that water influences the activity of growth metabolisms and survival of yeasts and moulds and attributed the faster growth of fungi due to the fact that and produce available water competition from bacteria becomes less. We and Ray (1953) also reported that addition of sugar at 60% concentration improves the keeping quality of Khoa four times. In the present study 40 and 50% sugar was able to improve the keeping quality four times. It can be concluded addition of 30, 40 and 50% sugar in Khoa reduced the available water significantly and increase the shelf life 3, 4 and 5 times respectively. Vijaylakshmi et.al.; (2001) suggested majors for decreasing the microbiological quality for increasing the shelf life of Khoa. Sarkar et.al.; (2001) also give importance for sugar addition for storage. On the same line the work of Narwade (2007).

Role of Antifungal Agents On Storage of Khoa –

In this experiment four antifungal substances were used to study the effect on storage at 30 and 5°C storage. These were potassium sorbate (0.2%), potassium sorbate (0.3%), boric acid (1%), gentamycin (0.2%) and streptomycin (0.2%). The results obtained are given in the Table - XVIII. Controls were done without the use of any antifungal substance so that comparision could be made on the number of fungal organisms isolated during different days of storage. At 30°C storage was observed up to 21 days when 0.2% potassium sorbate was used. The numbers of
fungal organisms were found to be less of control at every stage of isolation. Both at 30\(^0\)C and 5\(^0\)C temperature. At 0.3% concentration the fungal organism were 27 which increased to 123 after 21 days in comparison to 250 of control. At 5\(^0\)C after 7 days the number was 18 which increased to 67 after 28 days of storage. In 1% Boric acid at 30\(^0\)C the initial number was 35 which gradually increased to 133 after 21 days and at 5\(^0\)C the number was 19 after 7 days and after 28 days it increased to 75. In 0.2% gentamycin the initial number was 35 which increased to 125 after 21 days of storage at 30\(^0\)C temperature. At 5\(^0\)C temperature the number was 20 which increased to 70 after 28 days. Streptomycin when used at 0.2% concentration showed an initial population of 34 which increased to 135 after 21 days at 30\(^0\)C temperature. At 5\(^0\)C the number was 25 which increased to 113 after 28 days. From the overall study 3 substances could be selected potassium sorbate 0.3%, boric acid 1% and gentamycin 0.2% which could be used for increasing the shelf life of Khoa by reducing the fungal population. It can be conclude from the above studies that addition of these antifungal agents of Khoa can be maintained the consumers acceptability up to 12 days at 30\(^0\)C and 21 days at 5\(^0\)C temperature. These substances at the same time help in reducing aflotoxin production of fungal organisms

**Effect of Antimicrobial Agents on Chemical Constituents**-

In this experiment three antifungal agents, which were found to have promising results during the previous experiment, were used to study their effect in chemical constituents during the days of storage up to 21 days. Analysis for alteration in pH, dry matter, moisture, fat, protein and ash percentage were done after every weak and the results obtained are shown in the Table - XIX from the data’s obtained it will be evident
that ash content remain almost the same during the course of analysis. pH, moisture and fat, gradually reduced during storage while the dry matter and protein slightly increased. pH was 6.7 was reduced to nearly 6, moisture from 42.8 gradually reduced to 39, 35, fat from 24.9 gradually reduced to 20 or 22% while the dry matter increased from 60 to 64%, protein from 29.3 increase to almost 30%. These results indicate by using these substances the chemical constituents are not markedly affected as such they can be used for preservation. Rajarajan et al.; (2006) studied the effect of antifungal agents keeping quality of Khoa. But there observations were restricted to proteolysis and lipolysis and evaluation were made on physical characters of Khoa.

**Inhibitory Effect of Antibiotic on Bacterial Organisms**

In this study antibiotics used were penicillin, ampicillin, streptomycin, chloropenicol, erythromycin, gentamycin and tetracycline. The organisms screened were *E. coli*, *Klebsiela pneumoniae*, *Enterobacter*, *Citrobacter*, *Staphylococcus* and *Salmonella*. From this study streptomycin, chloropenicol and gentamycin were found to have most promising results while against penicillin and erythromycin most of the organisms were resistant followed by ampicillin and tetracycline. In streptomycin the maximum inhibitory zone was 16 mm found against enterobacter and minimum 10 mm found against *E. Coli*. Against chloropenicol maximum inhibition of 18 mm was observed against *Klebsiella* and minimum of 10.5 against *Salmonella*. In gentamycin maximum inhibition of 22.2 was observed against *Klebsiella* and minimum of 11 mm against *Citrobacter*. The gradation of these substances could be gentamycin > chloropenicol > streptomycin. Gentamycin in the previous experiment was also found to be good in
preventing fungal growth and here against bacteria therefore will be a good option for using it in increasing the shelf life. Guha et.al.; (1983). Used some antibiotic against Coliform organisms and also found that most of the strains were resistant to penicillin and erythromycin end sensitive to streptomycin and chlorphenical. They have not used gentamycin our results inhibits the same trend.

M.I.C. of effective Antibiotic –

The MIC concentration of streptomycin, chlorophanicol and gentamycin were evaluated against the bacterial isolates from Khoa the results obtained have been given in the Table - XXI. In this study again gentamycin reproduced the least minimum concentration required for inhibition of the organism. Its concentration ranged from 0.5 to 3 μ gm per mm. While that of chlorofenicol was 1.7 to 7 and streptomycin it ranged from 2 to 5 from these studies the antibiotic substances could be used for preservation of microorganisms.

shelf life Ventakesh *et.al.*; (2005) used the effect of packing material on increasing the shelf life of Khoa. In accordance with the object of these workers the present work was done on the same lines to improve the shelf life of Khoa. In accordance with the object of these workers the present work was done on the same lines to improve the shelf life of Khoa. The use of packing to improve the shelf life of Khoa has been explained to another worker in the lab. While this work was restricted to other methods for increasing the shelf life.

**Microbiological Analysis**

**Bacteria and Moulds During Storage**

During this experiment data's on bacterial count, yeast and mould count and Coliform count for 2, 4 and 8 days were taken and have been shown in Table - V. From this table it will be evident that the number of organism increased, increased in the days of storage. The numbers of organism were higher in Pindi variety as compared to Danedar Khoa. In Pindi variety the total viable count and bacteria were $42 \times 10^3$, $92 \times 10^3$ and $108 \times 10^3$ after 2, 4 and 8 days respectively. These number are higher as compared to Danedar Khoa on each day of isolation. In Danedar variety the number was $24 \times 10^3$, $40 \times 10^3$ and $64 \times 10^3$ after 2, 4 and 8 days respectively. Yeast and Moulds were less in number as compared to the bacterial forms. In Pindi Khoa the number was 317, 48 and 83 after 2, 4 and 8 days. In Danedar variety its number was 21, 46 and 68 after the same days of isolation. *Coliform* counts were 15, 18 and 21 in Pindi variety after 2, 4 and 8 days. While in Danedar they were 12, 14 and 19 on the same days of isolation. Bacteriological quality is similar to those found by Anamika and Kalimuddin (2002). The distribution pattern has also been worked by Rajarajan *et.al.*; (2007). The trend present in their results was also similar to those found in our studies.
Sugar as a Limiting Agent on Mycoflora-

During the estimation of the types of fungal and yeast organisms in Khoa. It was thought to study the effect of sugar in reducing the quantity of mycoflora with this objective Khoa was analyzed for the occurrence of individual myco organisms with and without sugar. The data’s are given in Table - VI. From this study five organisms belonging to yeast were isolated comprising of Saccharomyces cerevisae, Candida lipolytica, Rhodotorula glutinis, Torulopsis and Cryptococcus albicus. In Pindi Khoa highest percentage occurrence was of Rhodotorula followed by Saccharomyces and then Candida lipolytica. Cryptococcus had the least number almost the same trend was found when Khoa was added but their was a mark deduction in a number of organisms. The same organisms of yeast were isolated in Danedar variety and almost with the similar trend. Where also there was a mark deduction in a number of organisms when sugar was added. About eight different genera of moulds were collected these include Penicillium nigricans, Aspergillus niger, Geotrichum candidum, Mucor mucedo, Syncephalastrum racemosum, Fusarium sp., Rhizopus nigricans and Cladosporium herbarium. The percentage occurrence of Danedar variety varied from 2.4% to 12.9% while in the presence of sugar their percentage occurrence varied from 2.4 to 17%. In Pindi variety the percentage occurrence varied from 2.1 to 12.6 with sugar it varied from 2.1 to 15.6. The numbers of individual species were very much reduced when sugar was added.

It appears that due to increase in the acidity produced by the growth of acid acidity produced by the growth of acid producing bacteria yeast and moulds find a favorable environment for the growth and
multiplication as a result of which the quality of these product get very much reduced. Detection of moulds in Khoa suggests contamination from external sources specially after processing. These organisms bring rapid discoloration accompanied by off flavour. Hence the presence of these organisms can be considered as on indication of unhygienic conditions prevailing during manufacture and subsequent storage. Our results are in accordance of results obtained by Ghodaker et.al.; (1980).

Identification of Bacterial Isolates –

The bacterial organisms isolated from Khoa were collected and identified on the basis of morphological and biochemical tests. On the morphological basis four types of organisms were found. Seven isolated out of the total sixteen were Gram negative, motile rods which do not produce spores. Four isolated were Gram negative, non-motile rods, 3 isolates were Gram positive, non-motile, spherical form, two were Gram negative, non motile spherical. Their isolate numbers with morphological characters have been observed in Table - VIII.

For chemical parameters tests were performed through which their enzyme producing capabilities were performed through which their enzyme producing capabilities were tested and on the basis of these tests six bacterial organisms were studied. The organisms show positive tests for lactose, catalase, gas forming, indole and negative tests for Vogus prausker, citrate, oxidase and H₂S test and hence identified as E.Coli.

The isolate number which gave positive test for lactose, catalase, gas forming, voges prausker and citrate test while showing negative tests for indole, oxidase and H₂S test were identified as Klebsiella pneumoniae.
The isolate no. 1 and 3 gave positive test for lactose, catalase, gas forming, voges prausker, citrate and oxidase but gave negative test for indole and H₂S test were identified as *Enterobacter*.

Isolate no. 2 and 7 gave positive test for lactose, gas forming, citrate and H₂S but gave negative test for Voges prauskar, indole and oxidase were identified as *Citrobacter*.

Those isolates numbered as 11, 13 and 14 give negative tests for lactose, gas forming, voges prausker, citrate and H₂S but give positive test for catalase and DNAase were identified as *Staphylococcus*.

The isolate no. 16 give positive test for gas forming, voges prausker, indole and H₂S but give negative test for lactose, citrate, catalase, indole and oxidase were identified as *Salmonella*. Data’s obtained on biochemical parameters are given in Table - IX

The identified organisms with their identified numbers have been entered in Table - X. The percentage occurrence of *E.Coli*. And *Klebsiella* was found to be highest with 25% percentage occurrence followed by *Staphylococcus* with 18.75-percentage occurrence then was *Enterobacter* and *Citrobacter* with percentage occurrence 12.5 while *Salmonella* showed the least percentage occurrence of 6.25 percent. *E.Coli*. were also reported from Soomoro et.al; (2002), from Pakistan. Varadaraj et.al; also found Staphylococcus aureus in large quantities in fresh Khoa. Grover (1984) collected them in Khoa samples in Ludhiana. Saxena *et.al.*; (1993) found *E.Coli, Salmonella, Staphylococcus* and *Coliform* in Khoa from Nagpur market. The presence of these *Coliform* organisms suggests the presence of unhygienic conditions during manufacturing and storage.