The Effect of Non-Pathogenic Organisms in Milk :-

-The fermentation of milk :-

If we place an ordinary sample of milk immediately after milking in shallow dish at room temperature (21-27 C) a rather consistent series of changes usually will take plase in this milk , These sequences of events is some times called the :-

-Normal fermentation of milk :-

It may be divided into four phase as follows :-

1-Germicidal phase (Antimicrobial systems in milk) .

2-Souring phase (Growth of *Lactic acid bacteria*) .

3-Neutralization phase (Growth of yeast & molds).

4-Putrefactive phase (Decomposing bacterial flora).

The Effect of Pathogenic Organisms in Milk :-

-Abnormal Changes (Taints) in milk :-

1-Carbohydrate Degradation

2-Acid & Gas Fermentation

3-Lipolysis

4-Proteolysis

5-Sweet Curdling

6-Ropy (slimy) milk

7-Alkali Production

8-Alcohol Fermentaion

9-Flavor Changes

10-Colored Changes

8- *Pathogenic of Raw Milk* (2 h.)

Milk-Borne Diseases :-

Infections , Intoxications & Toxi-infections .

Contamination of food with pathogenic m.o.s. & growth & multiplication of this m.o.s in that food will lead to infection to the consumer (Salmonellosis) .

While growth & multiplication of m.o.s. in the food & production of toxin in this food , this is called (Food intoxicatin) & the toxion affecting the gastro-intestinal tract are called (Enterotoxins).

There are yet other types of organisms which can infect intestine when ingested alone with the food & produce toxins in sites to bring about symptoms of poisoning , this situation is called (Toxi-infection).

The pathogenic organism may be introduced into milk from :-

1-Dairy animals (Cows).

2-Milk handlers .

3-Environment .

-Major Diseases of Animal Origin:-

1. Brucellosis (*Br.abortus*,*Br.melitensis*)
2. Bovine Tuberculosis (*Mycobacterium bovis*)
3. Salmonellosis
4. Q-Fever (*Coxiela burnetii* Rickettsia)
5. Campylobacteriosis (*C.jejuni*,*C.fetus*,*C.coli*)

-Occasinal Diseases of Animal Origin: -

1.Leptospirosis (*L.canicola,L.hardjo,L.pomona*)

2.Listeriosis (*L.monocytogenes*)

3.Yersiniosis (*Y.pseudotuberculosis,Y.enterocolitica*)

4.Anthrax (*Bacillus anthracis*)

5.(*Streptococcus agalactiae*) infection

6.Foot&Mouth disease (*Aphthovirus,Picornaviridae*)

7.Cow pox (*Cow pox virus*)

8.Rabies (*Rhabdovirus*)

-Fungal Diseases:-

Actinomycosis (*A.bovis*)

-Bacterial Diseases of Human Origin: -

1. Typhoid Fever (*Salmonella typhi*)
2. Paratyphoid Fever (*Salmonella paratyphi*)
3. Cholera (*Vibrio cholera*)
4. Dysentery Shigellosis
5. Diphtheria (*Corynebacterium diphtheriae*)
6. Septic Sore Throat & Scarlet fever (*Streptococcus pyogenes*)
7. Staphylococcul Enterotoxaemia
8. Human Tuberculosis (*Mycobacterium homin*

-Viral Diseases of Human Origin :-

1.Poliomyelitis (*Poliovirus* (RNA)

2.Viral Hepatitis (*Enterovirus*)

a-Hepatitis A virus(HAV) b-Hepatitis B virus(HBV) c-Hepatitis C virus(HCV) d-Hepatitis D virus(HDV)

e-Hepatitis E virus(HEV) g-Hepatitis G virus(HGV)