

The logo for aglaem features the word "aglaem" in a stylized, rounded font. The letters "a", "g", "l", and "e" are dark teal, while the letters "s" and "m" are bright yellow. Below the main text, the tagline "Helping Student Community" is written in a smaller, orange, sans-serif font.

aglaem  
Helping Student Community

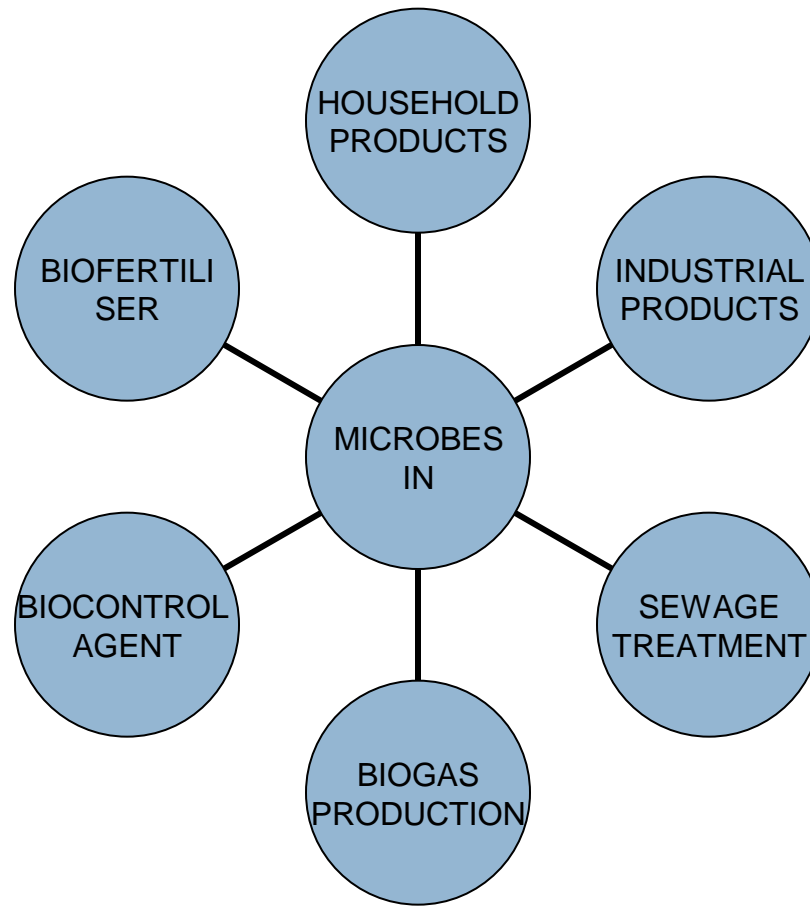
Microbes in Human Welfare

# MICROBES

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- Bacteria
- Fungi
- Protozoa
- Certain algae
- Viruses
- viroids

# USEFUL ASPECTS OF MICROBES



# MICROBES IN HOUSEHOLD PRODUCTS

- Production of curd from milk
- Check disease causing microbe in our stomach
- Fermentation of dough of idli, dosa and bread
- Fermentation of traditional drinks like 'toddy'
- Fermentation of fish, soyabean and bamboo shoots
- Production of different varieties of cheese like 'Swiss cheese', 'Roquefort cheese' etc.

# MICROBES IN HOUSEHOLD PRODUCTS

Sl.No	Name of microbes	Role
1	<i>Lactobacillus</i>	Convert milk into curd
2	LAB- lactic acid bacteria	Convert milk into curd Increase vitamin B <sub>12</sub> in milk Check growth of pathogens in stomach
3	<i>Saccharomyces cerevisiae</i>	fermentation
4	<i>Propionibacterium sharmanii</i>	Swiss cheese
5	A specific fungi	Roquefort cheese

# MICROBES IN INDUSTRIAL PRODUCTS

- Fermented beverages
- Antibiotics
- Chemicals
- Enzymes
- Bioactive molecules

# FERMENTED BEVERAGES (YEAST)

- Fermentation of fruit juices and malted cereals into ethanol.
- Alcoholic drinks-
  - (a) with distillation- whisky, rum, brandy
  - (b) without distillation- wine, beer

# ANTIBIOTICS

- Chemical substances, produced by some microbes and can kill or retard the growth of other disease causing microbes.
- E.g. Penicillin obtained from fungus *Penicillium notatum*.



# CHEMICALS (Organic Acids & Alcohol)

SL. NO.	Chemicals	Microbes
1	Citric acid	<i>Aspergillus niger</i> (fungus)
2	Acetic acid	<i>Acetobacter aceti</i> (bacterium)
3	Butyric acid	<i>Clostridium butylicum</i> bacterium)
4	Lactic acid	<i>Lactobacillus delbrueckii</i> bacterium)
5	ethanol	<i>Saccharomyces cereviseae</i> (fungus)

# ENZYMES

Sl. No.	Enzymes	Role
1	lipases	Remove oily stain from laundry
2	Pectinases & proteases	Clear fruit juices during bottling
3	streptokinase	<b>'clot buster'</b> remove blood clots from patients

# BIOACTIVE MOLECULES

<u>Chemicals</u>	<u>Microbes</u>	<u>Role</u>
Cyclosporin A	<i>Trichoderma polysporum</i> (fungus)	Immuno suppressive agent
statins	<i>Monascus purpureus</i> (yeast)	Lowers blood cholesterol levels

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