



DEPARTMENT OF BOTANY

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MYCOLOGY AND PHYTOPATHOLOGY

ECONOMIC IMPORTANCE OF FUNGI

THE FIRST ACQUAINTANCE OF HUMAN BEINGS WITH FUNGI STARTED KNOWINGLY OR UNKNOWINGLY FROM THEIR BENEFICIAL AS WELL AS HARMFUL CHARACTERS.THERE ARE NUMEROUS WAY IN DAILY LIFE THAT PEOPLE ARE DIRECTLY OR INDIRECTLY CONCERNED WITH FUNGI.

THE FUNGI LACK THE CHLOROPHYLL PIGMENT FOR INDEPENDENT EXISTENCE , HENCE THEY MUST GET THEIR FOOD FROM OTHER LIVING ORGANISM OR FROM DEAD OR DECAYING ORGANIC MATTER.SOME OF FUNGI CAUSE SERIOUS

DISEASES OF HUMAN BEINGS AND OF OTHER ANIMALS AND PLANTS.MANY ARE OF GREAT BENEFIT TO MANKIND AND GREEN PLANTS.THUS, MUSHROOMS , MORELS TRUFFLES , ETC. ARE USED AS FOOD , YEASTS ARE HIGHLY IMPORTANT IN THE BAKING , BREWING AND OTHER INDUSTRIES.MANY SOIL FUNGI ARE IMPORTANT IN CROP PRODUCTION , ANTIBIOTIC SUBSTANCE AS LIKE PENICILLIN IS OBTAINED FROM FUNGI.CERTAIN ALKALOIDS EXTRACTED FROM FUNGI WHICH IS EXTREMELY IMPORTANT IN MEDICINE.SOME FUNGI ARE RESPONSIBLE FOR MUCH OF THE DISINTEGRATION OF ORGANIC MATTER AS THEY DESTROY FOOD FABRICS AND LEATHERS.

FOLLOWING ARE SOME OF THE ECONOMIC ASPECTS OF FUNGI:-

1.USEFUL FOR THE MAINTENANCE OF SOIL FERTILITY :

THE MAJORITY OF THE KNOWN FUNGI ALONG WITH BACTERIA LIVE ON DEAD ORGANIC MATTERS , DECOMPOSE THEM PERFORMING A VERY USEFUL SERVICE IN RETURNING TO THE SOIL THE NUTRIENTS ORIGINALLY EXTRACTED BY THE PLANTS AND ALSO PREVENT MANY INORGANIC SUBSTANCES FROM BEING LOST BY LEACHING.

2.ESSENTIAL FOR VARIOUS INDUSTRIES : THE FUNGI

FORM THE MOST USEFUL BASIS IN INDUSTRIES LIKE : BAKING AND BREWING (SACCHAROMYCES CEREVISIAE) , PREPARATION OF CHEESE (PENICILLIUM ROQUEFORTI and P. CAMEMBERTI) , COMMERCIAL PRODUCTION OF ORGANIC ACID-CITRIC ACID WITH THE HELP OF ASPERGILLUS NIGER AND OF SOME VITAMIN PREPARATIONS.

3.UTILIZATION OF ANTIBIOTIC SUBSTANCE AND ALKALOIDS : THE FUNGI PRODUCE A VARIETY OF SUBSTANCES AS THEIR METABOLIC PRODUCTS WHICH INCLUDE ENZYMES , ALKALOIDS , TOXINS , ORGANIC COMPOUNDS AND SIMILAR OTHER SUBSTANCES.MOST OF THESE SUBSTANCES ARE OF GREAT ECONOMIC IMPORTANCE.

(A) ANTIBIOTIC SUBSTANCES : THE METABOLIC PRODUCTS PRODUCED BY CERTAIN FUNGI WHICH INHIBIT THE GROWTH OF OR DESTROY BACTERIA AND OTHER MICRO-ORGANISMS ARE CALLED ANTIBIOTICS.HENCE THESE ARE ANTIBACTERIAL , ANTIFUNGAL AND TO SOME EXTENT ANTIVIRAL SUBSTANCES.

(i)USED AS DRUGS : MENTION MAY BE MADE OF THE WONDER DRUG PENICILLIN , A BOON TO THE SUFFERERS , IS AN ANTIBIOTIC SUBSTANCE EXTRACTED FROM THE

FUNGUS PENICILLIUM NOTATUM

(ii) USED FOR OTHER PURPOSES : NON-THERPEUTIC USES OF ANTIBIOTICS ARE GROWING INTO IMPORTANCE DAY BY DAY. RECENT DEVELOPMENTS HAVE TAKEN PLACE IN THEIR STIMULATORY EFFECTS ON THE GROWTH OF YOUNG ANIMALS. MANY OF THESE ANTIBIOTICS , WHEN FED IN LOW CONCENTRATION TO CHICKS , PIGS , AND CALVES INCREASE GROWTH RATE AND DECREASE INFANT MORTALITY OF THESE YOUNG ANIMALS.

(B) ALKALOIDS : THE SCLEROTIA OF THE FUNGUS CLAVICEPS PURPUREA CONTAIN A NUMBER OF ALKALOIDS WHICH ARE UTILIZED IN MEDICINE FOR THE PREPARATION OF ABORTIFACIENTS AND ARE ALSO USEFUL IN CONTROLLING HAEMORRHAGE DURING CHILD-BIRTH.

4. USED AS FOOD : CERTAIN FUNGI LIKE , MUSHROOMS , MORELS , AND TRUFFLES ARE EAGERLY USED , PARTICULARLY IN THE WESTERN COUNTRIES , AS FOOD. MUSHROOMS HAVE BEEN USED BY MAN AS FOOD SINCE ANCIENT TIMES , BUT NOT UNTIL THE SEVENTH CENTURY THEY WERE CULTIVATED AS A CROP AND THEN NOT EXTENSIVELY.

5. INDUCE DISEASES OF ANIMALS AND HUMAN BEINGS :

IT IS WIDELY KNOWN THAT FUNGI (SPECIES OF ASPERGILLUS , CERCOSPORA , CRYPTOCOCCUS , AND OTHERS) INFEST ANIMAL AND HUMAN BODIES AND THEREBY CAUSE A DISEASE KNOWN AS MYCOSIS (PL. MYCOSES). DEPENDING ON THE FUNGI CAUSING THE DISEASE AND THE HOST INFECTED MYCOSES MAY AFFECT ONLY THE SKIN OR MAY CAUSE GENERALIZED INFECTION OF A MORE SERIOUS NATURE . EXAMPLES OF WHICH ARE BODY RINGWORM , ASPERGILLOSIS , CRYPTOCOCCOSIS , ETC.

6.INDUCE DISEASES OF PLANTS : FUNGI HAVE GREAT ECONOMIC IMPORTANCE AS THEY CAUSE THE MAJORITY OF KNOWN PLANT DISEASES.OF ALL PARASITIC DISEASES OF PLANTS , THESE CAUSED BY FUNGI ARE MOST COMMON.THE DISEASES IN PLANTS HAVE BEEN RECOGNISED SINCE THE TIME OF ARISTOTLE , THEOPHRASTUS , AND OTHERS.BUT DURING THAT TIME NO CLEAR EXPLANATION WAS PUT FORWARD FOR THE INCIDENCE OF THE DISEASES.

7.CAUSE LOSS OF FOOD AND OTHER ESSENTIAL COMMODITIES : THE FUNGI CAUSE SPOILAGE OF FRUITS , VEGETABLES , ALL KINDS OF FOODSTUFF AND OTHER CONSUMERS' GOODS , DESTRUCTION OF FABRICS , LEATHER , PAPER , OPTICAL EQUIPMENT , AND CAUSE

