

Microbial Nutrition in Primary and Secondary metabolites

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ABSTRACT

Microorganisms are of great importance to environment and essential to all life forms, and are primary source of nutrients and act as leading recycler in environment. Microorganisms are present in exceedingly large sphere of environment and develop from abyssal zone to stratosphere (at heights up to 60 km) and in a wide range of temperatures varying from arctic ice to boiling volcanoes.

Keywords: Environment, Micro Organisms.

INTRODUCTION

Microscopic organisms are used in the preparation of diversity of foods and also used as a origin of food and feed supplements. Primary metabolites involve amino acids, nucleotides, and fermentation end products such as ethanol and organic acids, which are considered requisite for proper growth of microorganisms.

Secondary metabolites are organic compounds that configure at the end or near the stationary phase of growth, and are not directly corresponded with growth, development, and reproduction of microorganisms. These products are to a great extent are involved in healthcare enterprises as antimicrobial agents, antiparasitic agents, antitumor, enzyme inhibitors and immunosuppressive etc. Secondary metabolites with enterprises as plant growth stimulants, herbicides and insecticides have also been reported. Some metabolites, like Adriamycin, bleomycin, daunomycin, and mithramycin were used as antitumor compounds.

Amino acids

The amino acids are building chunks of protein molecules and hence used in dietary and feed accessories of human and animals, respectively (Mahmood 2015). These organic molecules have numerous roles, such as animal feed supplements (lysine, methionine, threonine), flavor enhancers (aspartic acid,

monosodium glutamate, serine), antioxidants (cysteine, L-tryptophan and L-histidine), as sweeteners (aspartame assembled from aspartic acid and phenylalanine), and additives in cosmetic and medicinal products.

Vitamins

Vitamins are necessary micronutrients required in trace amount to preserve normal physiological function of the body. These vital nutrients are not incorporated by mammals, and therefore, dietary supplement is required from external sources to preserve the balanced metabolism in all living organisms. Catalytic activities of microbes have been used since ancient times for production of bread, wine, and beer.

Organic acids

Organic acids are among the most flexible ingredients in food, beverages, pharmaceuticals, solvents, petrochemicals, textile, detergents, detergents, pharmaceuticals, rubber, perfumes.

Lactic acid

Lactic acid is used extensively in food and beverages, polymer, pharmaceutical, personal care products. The poly lactic acid polymer is biodegradable and biocompatible, and utilized in pharmaceutical industry for the fusion of prosthetic devices, sutures and internal drug dosing.

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