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Popular Article

Biological stain and its importance in laboratory of biological science

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Abstract

The stain which are produced from nature resources like Henna, Hibicus spp., red rose, red beet root, termeric, purple colour cabbage, some insects etc., are known as biological stain. It is non toxic , non hazardious and eco friendly to the environment. It is also cost effective.

Introduction

Stains are generally used to add color to animal tissues, plant tissues, microbes and spores to make them optically distinct and technique is known as staining. Most stains in current use are chemically synthesized from cheap petroleum sources, shows superior fastness properties, are widely available at an economical price and produce wide variety of color. However, they cause skin allergies and other harms to human body on exposure and produce toxic waste, also reduce soil fertility. But the biolocal stain are produced from natural resources like Henna leaves, Hibicus spp flowers, somce insects , red rose etc.They are non-allergic, non-toxic, and eco-friendly. These biological stains has become a matter of significant importance due to the increased environmental awareness in order to avoid some hazardous synthetic ones.

Body of the article

Biological stains are used for the medical and biological industries to aid in detection of structures within tissues. This biological stain the animal tissue sample, bacteria, fungi, paramecium and plant tissue. For example, the biological stain produced from Henna leaves is utilize against the Eosin synthetic dye in routine Hematoxylin and Eosin stain. The Eosin is very costly and hazardous to the environment. Biological stain produced from *Hibiscus spp.* can also be use as an alternative of Hematoxylin in routine Hematoxylin and Eosin stain. Hematoxylin is

costly dye whereas Hibiscus is easily available in nature. These biological stains are used for detection of abnormalities, but is not limited to that. The stains are used to define and examine cell populations within the tissues, to mark cells, or to flag proteins. Now a days, the majority of the stains which are used in laboratory of biological science are synthetic organic dyes. The textile industry modified or borrowed these synthetic organic dyes. Synthetic dyes were developed in the mid -19th century. The synthetic dyes produce a variety of color and very costly, and easily available. These dyes are toxic and hazardous to the human health. But biological stains are cost effective, easily available, non- toxic and non-hazardous to the environment, hence production of biological stain and their application is necessary in laboratory of biological science for protection of environment and to save the economy of country. Despite the biotechnological advance in medical science today, biological stains are vital in laboratory diagnosis and different staining methods remains an important simple diagnostic tool in diagnostic and research laboratories. Extracts obtained from natural sources such as animal and vegetable sources, plants, insects and soil hold promise as a potential source of cheaper stains. Over 2000 dyes are synthesized from various parts of more than 500 dye-yielding plant species, of which only about 150 have been commercially exploited. Although numbers of biological stain are produced in other state but in agro-climatic condition of Assam, till now biological stain is not produced and their application is not studied thoroughly. Study is necessary for production and application of biological stain in fungal, bacteria, plant tissue, paramecium and histological staining for laboratory of biological science which are cheap and cost effective as well as easily available.

Conclusion

The biological stain is easily available, cost effective, nonhazardous, nontoxic to the environment. It can be used as an alternative to synthetic dye in laboratory of biological science. The synthetic dye is costly and hazardous to the environment.

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