

The Phytochemistry of Cannabis, Hemp and its Uses

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Opinion Article

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DESCRIPTION

Cannabis and hemp are two plants that are known for their wide range of applications. They are members of the same plant family, *Cannabaceae* but differ in their chemical composition and uses. One of the most well-known and studied classes of compounds in cannabis and hemp are the cannabinoids. Cannabinoids are a group of over 100 chemical compounds that are unique to the cannabis and hemp plants. They are primarily produced in the trichome glands that cover the surface of the plants. The most well-known cannabinoid is delta-9-tetrahydrocannabinol, which is the primary psychoactive compound in cannabis. Tetrahydrocannabinol (THC) is responsible for the "high" associated with cannabis use. However, there are many other cannabinoids that have different effects and potential therapeutic benefits. Cannabinoids are classified into three main groups: Phytocannabinoids, Endocannabinoids, and Synthetic Cannabinoids. Phytocannabinoids are cannabinoids that are naturally occurring in the cannabis and hemp plants. Endocannabinoids are cannabinoids that are produced in the body, while synthetic cannabinoids are compounds that are created in the lab.

Phytocannabinoids make up the majority of the cannabinoids found in cannabis and hemp. They are responsible for most of the plant's therapeutic effects and are the focus of much of the research in this field. Some of the most well-known phytocannabinoids include Tetrahydrocannabinol (THC) and Cannabidiol (CBD). THC is the primary psychoactive compound in cannabis, while CBD has a range of potential therapeutic benefits but does not produce an intoxicating effect. Another important class of cannabinoids are the acidic cannabinoids. These are the precursors to the active cannabinoids and are produced in the plant in large quantities. When the plant is heated or undergoes decarboxylation, these acidic cannabinoids are converted into their active forms. The most well-known acidic cannabinoid is Tetrahydrocannabinolic Acid (THCA), which is converted into THC when heated. Cannabis and hemp also contain a range of other cannabinoids, including Cannabigerol (CBG), Cannabinol (CBN) and Cannabichromene (CBC). These cannabinoids have been found to have potential therapeutic benefits, and research is ongoing to determine their exact effects. The Endocannabinoid System (ECS) is a complex signaling system that the body uses to maintain homeostasis. The ECS is made up of two primary receptors, known as CB1 and CB2. Cannabis and hemp have a variety of potential uses, including medicine, recreation, industrial, and agricultural applications. One of the most well-known uses of cannabis is for its medicinal properties. The plant contains compounds called cannabinoids, such as THC and CBD, which have been shown to have a range of potential therapeutic effects. These include pain relief, reducing inflammation, alleviating anxiety and depression and improving sleep. Recreational use of cannabis is also popular in some parts of the world. The psychoactive properties of THC can produce feelings of euphoria, relaxation, and altered perception, which can be desirable effects for some individuals. Hemp, on the other hand, is commonly used for its industrial properties. The strong fibers of the plant can be used to make durable textiles, paper and rope. Additionally, hemp can be used as a source of biofuel, and its seeds are a nutritious food source. Furthermore, hemp and cannabis can be used in agriculture, as they are both effective at phytoremediation the process of using plants to remove pollutants from soil and water. Hemp, in particular, is known to absorb heavy metals and toxins from the soil. Cannabis and hemp have a wide range of potential uses, including medicine, recreation, industrial applications, and agricultural uses.