

Cannabis Strain Research

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Abstract

Cannabis strains are genetic varieties and hybrids used by growers to produce marijuana buds. The genetic makeup of most strains on the consumer market are hybrid varieties, bred from crossbreeding two different cannabis plant varieties together. Over the years, hybrids have come to represent the bestselling popular marijuana strains that are grown and sold today.

Our research overviews the basics of cannabis strain analysis, including the plant traits, growth abilities, cannabinoid content and quality vs. yield of the finished product. Information was gathered over a 10 month study. The cannabis plants were recorded side-by-side and documented daily. The results of the study show the varying growth structures of indica dominant and sativa dominant cannabis strains.

1 Introduction to Cannabis Strain Genetics

Cannabis strains can be reproduced via seed or clone. Whether a cultivator chooses to grow from seed or clone largely depends on the needs of the grower. A clone is a genetically-identical propagation of the mother plant. Certain growers often prefer working with clones as the reliability of clones to produce identical marijuana creates a desirable advantage. Seeds can also be nearly genetically-identical, however this is not the case in many modern

hybrid strains. Hybridization creates a wide genetic pool which leads to the offspring (seeds) appearing different from each other.

Stable genetics in seed form can be found in IBL (in-bred line) genetic strains, heirloom genetic strains and other localized and landrace varieties that continue to breed amongst themselves.

2 Environmental Adaptation

The genetics of cannabis strains have shown time and time again their ability to adapt to the climates which they are grown in. This adaptation can be viewed first-hand by the grower, as evidenced by the rapid succession of indica-dominant strains into sativa-dominant varieties over the course of a few generations in Hawaii.

The explanation of why cannabis strains can adapt to climates lies in the history of cannabis. Marijuana has adapted to the native climates around the world where the plants are grown. For example, the marijuana plants in the Hindu Kush mountain range area tend to finish their flowering cycle quickly, in order to produce seeds in time before the harsh rains and winter approaches. Such a trait is not found in tropical cannabis strains, which leads us to the conclusion that environmental adaptation is a genetic process that the cannabis plant uses frequently.

3 Marijuana Seed Breeding

Understanding the goals of cannabis seed growers, breeders and smokers in creating unique and favorable marijuana strains depends primarily on the market demand. High THC and CBD cannabis strains are popular in the legal medical marijuana market. THC is the cannabinoid responsible for creating the "high" feeling that users refer to as "stoned". CBD is a cannabinoid that is currently front and center in the eyes of medical professionals.

Marijuana seed breeders often breed for a hobby. Much like other crop and seed collectors, not all marijuana seed breeders are solely focused on the outcome or appeal in selling buds. The rise in popularity of craft cannabis grown by organic and professional growers is evidence of a marketplace that demands quality.

4 Further Research

Additional research for this study is provided by Mold Resistant Strains, cannabis strain seed breeders that grow resilient sativa and indica strains for the next generation of marijuana growers.

4.1 Reference

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- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5968020/>
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