



—Scientific Note—

University of Florida, Institute of Food and Agricultural Sciences Pilot Project for Industrial Hemp: On-Farm Trials with Extension

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Industrial hemp is the same species as marijuana (*Cannabis sativa*); however, industrial hemp is legally distinguished from marijuana by its total delta-9-Tetrahydrocannabinol (THC) level. Industrial hemp's total THC content does not exceed 0.3% dry weight, whereas *C. sativa* is categorized as marijuana at any higher percentage.

Hemp is used for fiber, seed, oil, non-THC cannabinoids, and various other derivatives. The plant historically has been cultivated as a fiber and grain crop. In addition to these, modern hemp crops could be used for building materials, forages to feed cattle, food products for people, and essential oil extraction for cannabidiol (CBD) and other cannabinoids. CBD is one of over 100 cannabinoid compounds found in *Cannabis* that is continuing to be explored for medicinal use for a variety of ailments.

Research scientists and extension educators are now tasked to “relearn” hemp for modern production and to prepare for industry development in Florida. Much of the production knowledge has been lost due to hemp being classified as a Schedule I controlled substance by the United States Drug Enforcement Agency until recent changes in law. In other countries where hemp has been legal since the early 1990s, research regarding production is available but not necessarily applicable to Florida's environmental conditions and agricultural systems.

Specialists and extension educators must fill knowledge gaps that include best cultivation practices, adapted varieties, control for insect and weed pests, profitability potential for Florida farmers, and invasion risk of hemp to other farm fields and natural areas. In order to generate information needed by growers, the University of Florida, Institute of Food and Agricultural Sciences (UF/IFAS) Industrial Hemp Pilot Project was launched. Ongoing years of research will validate the scientific findings and help provide producers and allied stakeholders with sound, reliable information. As more research is generated, extension personnel will eventually be able to make confident recommendations regarding the production of industrial hemp in Florida.

The UF/IFAS Industrial Hemp Pilot Project is working under the long-term goal to establish hemp variety and production rec-

ommendations, while also remaining environmentally conscious. During pilot project research, hemp varieties have been assessed for plant growth, production, and health. A 14-member advisory group selected to represent diverse backgrounds in agriculture, law, and medicine was established to help guide the project. Group members were also selected to act as public representatives for the diverse interests and stakeholder groups related to the hemp industry in Florida.

The pilot project seeks to identify hemp varieties with resilience to environmental, ecological, and economic threats that could arise in Florida. Each variety was evaluated for THC levels, to meet the regulatory threshold, as well as for CBD content, to establish candidates for oil production.

The next phase in the hemp pilot project was to use the information collected in the first phase of research to implement on-farm trials, in tandem with continued trials at various UF/IFAS research and education centers.

Extension agents worked with farmers to establish farm plots that represent environmental conditions in Florida's diverse climate across the various land, soil and cropping systems. Each farm planted hemp varieties with genetics that reflected current availability for production and represented different hemp types.

Both UF/IFAS and growers obtained permits allowing them to produce hemp for research through the Florida Department of Agriculture and Consumer Services (FDACS). Like the pilot project, on-farm trials also evaluated the effects of cultivation practices on the development of hemp, monitored potential pest and disease issues, and collected both management and economic information. In total, 18 farms were selected for the on-farm trials after the selection process that took place earlier in 2020.

As the local interest of industrial hemp topics has continued to surge from the onset of commercialization of hemp, the UF/IFAS Industrial Hemp Pilot Program research leader, Dr. Zachary Brym, initiated the development of a statewide extension team. Participating extension agents within the team are housed in locations across Florida with expertise that represents various agricultural systems. These agents have been trained to provide information to producers and the general public covering a range of basic hemp related topics, as well as preliminary research findings and extension resources.

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