

University of Mississippi

eGrove

---

Annual Poster Session 2020

Annual Poster Session

---

10-23-2020

## D02. NCNPR Activities at Coy Waller Complex

Mahmoud A. ElSohly

*University of Mississippi*

Suman Chandra

*University of Mississippi*

Mohamed M. Radwan

*University of Mississippi, mradwan@olemiss.edu*

Hemant Lata

*University of Mississippi*

Amira Wanas

*University of Mississippi*

*See next page for additional authors*

Follow this and additional works at: [https://egrove.olemiss.edu/pharm\\_annual\\_posters](https://egrove.olemiss.edu/pharm_annual_posters)



Part of the [Pharmacy and Pharmaceutical Sciences Commons](#)

---

### Recommended Citation

ElSohly, Mahmoud A.; Chandra, Suman; Radwan, Mohamed M.; Lata, Hemant; Wanas, Amira; and Majumdar, Chandrani G., "D02. NCNPR Activities at Coy Waller Complex" (2020). *Annual Poster Session 2020*. 25.

[https://egrove.olemiss.edu/pharm\\_annual\\_posters/25](https://egrove.olemiss.edu/pharm_annual_posters/25)

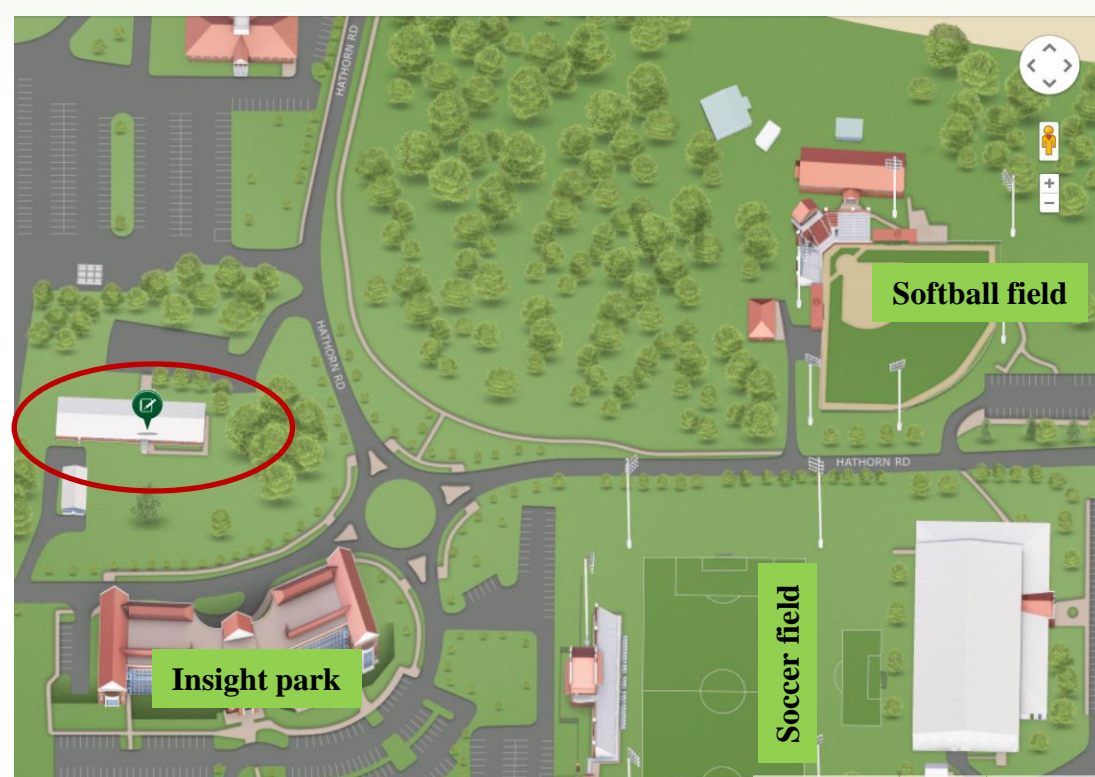
This Book is brought to you for free and open access by the Annual Poster Session at eGrove. It has been accepted for inclusion in Annual Poster Session 2020 by an authorized administrator of eGrove. For more information, please contact [egrove@olemiss.edu](mailto:egrove@olemiss.edu).

---

**Authors**

Mahmoud A. ElSohly, Suman Chandra, Mohamed M. Radwan, Hemant Lata, Amira Wanas, and Chandrani G. Majumdar

## COY WALLER COMPLEX



Coy Waller Laboratory Complex is located on the southwestern corner of the Ole Miss campus. It consists of offices and research laboratories, and the marijuana growing facilities. It is part of the NCNPR, School of Pharmacy and RIPS. Coy Waller Laboratory includes:

- 1-Indoor growing facility.
- 2-Outdoor growing facility.
- 3-Laboratories (7 laboratories).
- 4-Vaults (2 vaults to keep the dried marijuana plant, extracts and cannabinoids with low temperature storage capability (-20 °C).
- 5-Offices (9)

It is the home of the marijuana project which has been at Ole Miss since 1968.

## Marijuana Project Aims

- Grow, harvest & process cannabis
- Provide cannabis products such as extracts and individual cannabinoids for NIDA'S Drug Supply Program.
- Manufacture & distribute cannabis cigarettes for research.
- Production of cannabinoids
- Cannabis phytochemistry
- Confiscated cannabis analysis

## Outdoor growing

We have the ability to cultivate and produce many varieties of *C. sativa* from seeds or cuttings (1.5 acres to 12 acres).



## Indoor growing



## Processing of plant material



## Gamma Irradiation

To minimize the Microbial count (TAMC & TYMC)

TAMC = Total Aerobic Microbial Count  
TYMC = Total yeast and Mold Count

10-30 kGy

Plant Material

## Cannabis Extraction & Distillation

Distillate

Plant material 1 kg  
• 10.0% Δ<sup>9</sup>-THC

Extract 102.6 g  
• 57.8 % Δ<sup>9</sup>-THC

Distillate 68.8 g  
76.0 % Δ<sup>9</sup>-THC

Thin Film Distillation

## Coy Waller's Lab. Team

Dr. Suman Chandra  
Project Co-Director  
Production Manager

Prof. Mahmoud A. ElSohly  
Project Director

Dr. Mohamed M. Radwan  
Project Co-Director  
QC-Manager

Dr. Hemant Lata  
Sr. Research Scientist  
(Plant Biotechnologist)

Mrs. Chandrani G. Majumdar  
Lab. Supervisor  
Sr. R&D Chemist

Dr. Amira A. Wanas  
Research Scientist  
(Nat. Prod. Chemist)

Mrs. Magen Sealy  
Project Coordinator

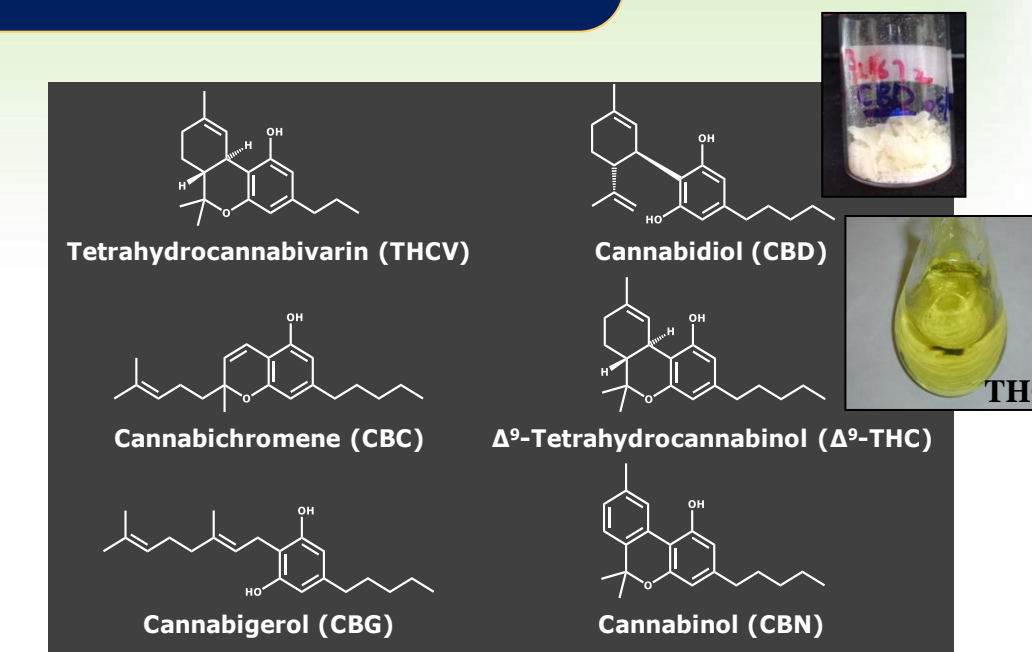
Ms. Lauren Cook  
Administrative  
Coordinator I

Mrs. Myranda Bennett  
Associate R&D Chemist

Mr. Harold Sneed  
Field Operations  
Coordinator

## Cannabinoids isolation

Cannabinoids with purity more than **95%** were prepared from cannabis distillate by using many chromatographic techniques.



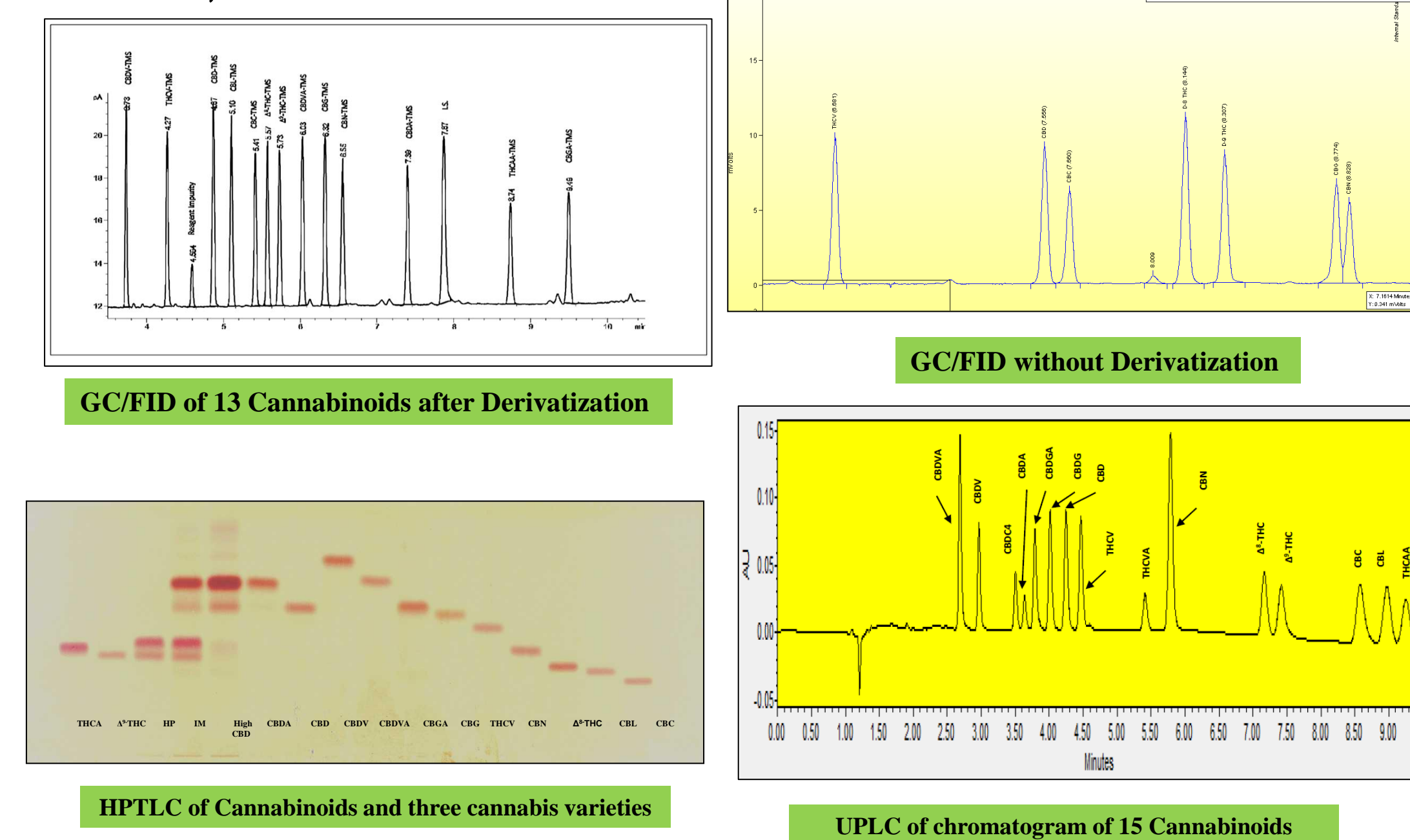
CBD produced with purity > **99%**

The amount produced in 2020:

In 2020 we produced 190 g THC and 500 g of CBD and 51 kg extract

## Testing analytical laboratory for Cannabis samples

Marijuana and products such as, extracts, hashish, hash oil and edible products which are confiscated by DEA and law enforcement agencies are analyzed in the Coy Waller Lab. using GC/FID. Each year more than 2000 samples of domestic or non-domestic origin are analyzed for different major cannabinoids. All samples from different growing stages of cannabis production as well as during the extraction and isolation of cannabinoids were also analyzed by GC/FID, GC/MS, HPLC, UPLC and HPTLC.



## Tissue Culture

In our laboratory, an *in vitro* clonal propagation protocol has been used for the production and maintenance of high yielding elite clones. The process allows us to develop a secure and stable *in vitro* clonal repository of *C. sativa* and maintain essential genetic materials for future production needs.

Indirect Organogenesis

Synthetic Seed

Propagation of *C. sativa* through encapsulated nodal segments containing axillary buds. A: Calcium alginate encapsulated nodal segments of B & C; Rupturing of synthetic seeds showing proliferation of encapsulated nodal segments, D: Conversion- showing sprouting and rooting E: Regenerated plant established in fertiome, F: Fully grown hardened micropropagated plant on 1:1 potting mix- fertiome with coco natural growth medium

## ACKNOWLEDGMENTS

The project is supported by National Institute on Drug Abuse (NIDA), contract # N01DA-15-7793.