



Background

- In 2019 The Florida Senate passed SB 1020: State Hemp Program that created a program where licensees could grow specific hemp seeds and cultivars for CBD and industrial uses.
- Long and Scott Farm in Mount Dora, Florida planted 4 cultivars in their 8.4-acre organic block.
- The four cultivars selected were Goliath, Hercules, Early Abacus, and Master Kush Spectrum (MK Spectrum).

Hypothesis

- Can growing hemp outdoors in Central Florida be profitable?

Challenges

- The Central Florida climate is difficult for any crop from July to October,
- Lack of literature for hemp in the region and state requires growers to work together to solve issues.
- Rainfall and humidity increases chances of *Botrytis* spp. (fig 1.) and Southern Blight (fig 2.), which is facilitated by *Athelia rolfsii*, (Mersha, Kering, and Ren 2020) , causing significant losses pre-harvest.
- Limitations on tissue sampling locations and plant clinics made it difficult to gather data for the crop.
- Learning post-harvest techniques that worked for our location was trail and error, with over 100 pounds lost in the curing stage.
- Finding a location to sell the bi-products (industrial materials) is still on ongoing challenge and would contribute to the gross profit totals.

Methods

- Monitor sick or dead plants removed from the field pre-harvest to calculate percentage of each cultivar's losses.
- Monitor plants removed from dry racks post-harvest to calculate each cultivar's losses.
- Monitor losses during curing and cleaning stages.
- Log data from final product, and prices received for each cultivar.
- Calculate gross profit totals per cultivar, and average per acre.



Figure 1



Figure 2

Growing hemp outdoors in Central Florida will be profitable.



Data

Table 1

Cultivar	Smokable Flower Price Per Pound	Pounds of Smokable Flower	Biomass Per Pound	Pounds of Biomass	Gross Profit
Goliath	\$275.00	14.0lb	\$25.20	574.6lb	\$18,329.92
Hercules	-	-	\$28.00	248.0lb	\$6,944.00
Early Abacus	-	-	\$22.40	212.0lb	\$4,748.00
MK Spectrum	-	-	\$22.40	1538.5lb	\$34,462.40
Total	-	14.0lb	-	2,573.1lb	\$64,484.32

Table 2

Cultivar (Total Plants)	Pre-Harvest Losses (%)	Post-Harvest Losses (%)	Total Plants Lost (%)
Goliath (7,068)	878 (12.4%)	405 (5.70%)	1,280 (18.1%)
Hercules (6,422)	1,091 (17.1%)	218 (3.39%)	1,309 (20.5%)
Early Abacus (2,584)	848 (32.8%)	8 (0.31%)	856 (33.1%)
MK Spectrum (10,231)	2,176 (21.3%)	956 (9.34%)	3,132 (30.6%)
Total (26,305)	4,990 (19%)	1,587 (6.0%)	6,577 (25%)

Results

The first year of hemp production at Long and Scott Farm had mixed results. Regardless of 25 percent losses, they were still able to gross a profit of \$64,484.32 which equates to \$7,676.70 per acre. Gross profit was used because overhead costs differ at each farm. Yields were reduced from pathogens and insects, as well as prematurely reaching the THC threshold. Cannabis with a THC level exceeding 0.3 percent is considered marijuana (Agriculture Marketing Service, USDA Billing Code 3410-02-P 2018 p. 7). Cultivars were tested twice before harvest to determine when Long and Scott Farm could legally harvest and sell their product. This threshold was reached between 7 and 9 weeks, and not every plant was at full inflorescence potential. The Early Abacus plant is advertised by the dealer to yield over 1.5 pounds per plant (HempSeedFlorida 2020). Long and Scott Farm's plants varied drastically in yield per plant, with the average nowhere near 1.5 pounds per plant.

Summary

Growing hemp outdoors in Central Florida can be profitable. Once tools were made for post-harvest, labor was significantly cut. As growers gain experience in the industry, there is no doubt that yields, and profits will both be higher. Pathogen prevention and post-harvest techniques are unique to each location and will take some refining. Cultivar selection will also play a key factor in yields. The dense inflorescence had a higher yield but were more susceptible to fungal issues. Hercules and Goliath fetched a higher price per pound this year, but as the market gets more saturated, prices will drop.

Moving Forward

For hemp to be a staple crop in the state of Florida, a few issues need to be addressed.

- **More research into hemp production for the region.**
- **Access to plant clinics without restrictions.**
- **More availability for tissue sample labs.**
- **Wholesale distributors for industrial bi-products.**
- **IPM plans tailored to outdoor hemp.**
- **Access to spray programs specific to hemp.**

References

- Department of Agriculture, Establishment of a Domestic Hemp Production Program 2018. 3410-02-P, p.7 <https://www.fdacs.gov/content/download/89426/file/USDA-Interim-Final-Hemp-Rule.pdf>
- Hemp Seed Florida. (n.d.). EARLY ABACUS. Retrieved from <https://hempseedflorida.com/early-abacus>
- Mersha, Z., Kering, M., & Ren, S. (2020, February 23). Southern Blight of Hemp Caused by *Athelia rolfsii* Detected in Virginia. Retrieved from <https://apsjournals.apsnet.org/doi/full/10.1094/PDIS-10-19-2178-PDN>