



Proximate analysis of two *Cannabis sativa* species at three stages of flowering

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Introduction

Marijuana (*Cannabis sativa* L.) is a member of the Cannabaceae family and is an annual, dioecious, flowering herb. Marijuana is best known for its psychoactive properties associated mainly due to the presence of Δ^9 -THC, and is the most used substance globally with an estimated 200 million people, 4% of the global population, using cannabis in 2019.¹ In recent years CBD, a nonpsychoactive drug, has gained popularity for its medicinal properties.

Some cultivators of the cannabis plant have developed high CBD:THC strains which are used in the treatment of anorexia, inflammation, neuropathic pain, cancer, chemotherapy-induced vomiting and nausea, and spasticity in patients with multiple sclerosis.²

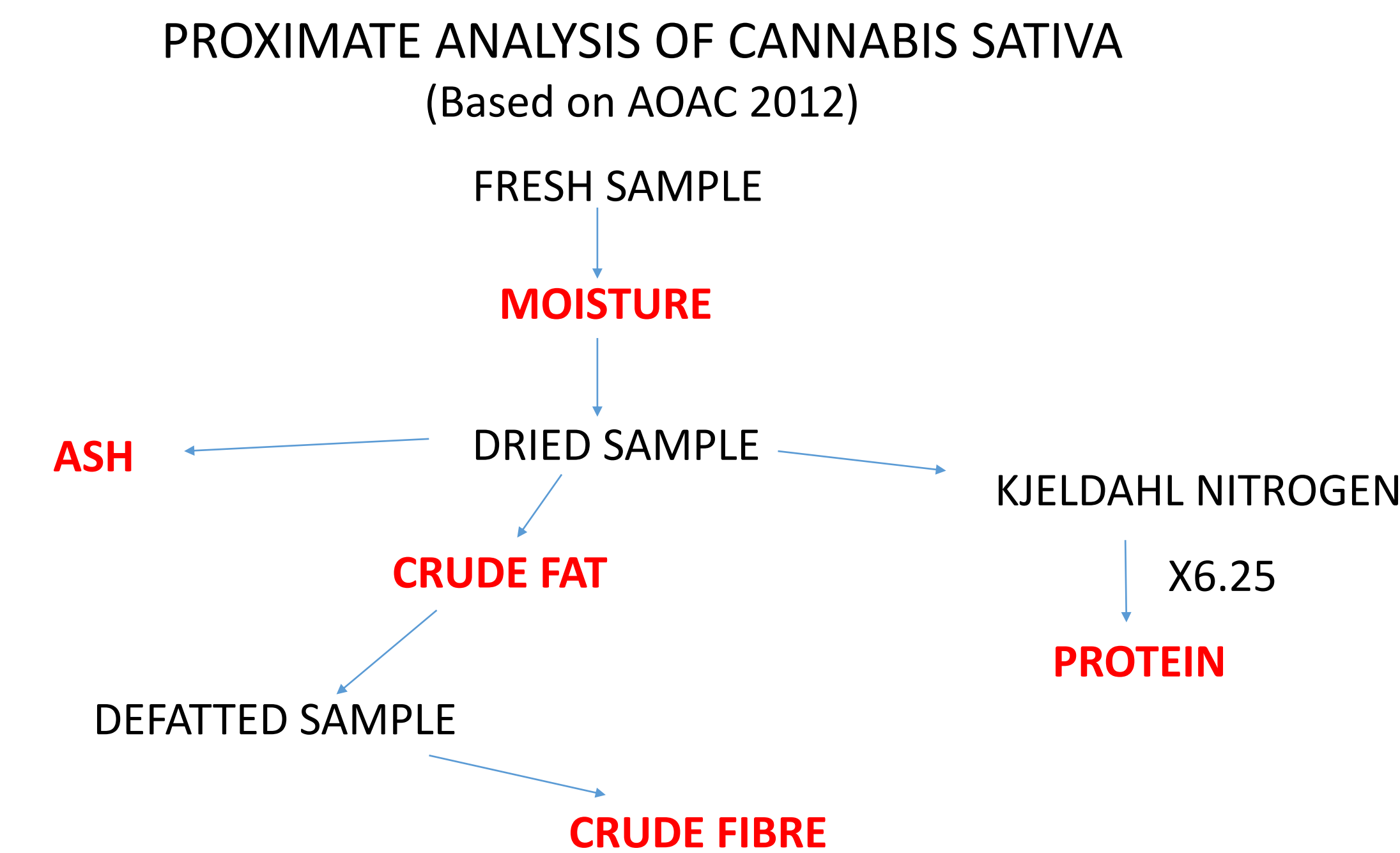
In Jamaica, cannabis is consumed for medical, recreational and spiritual purposes. In 2011, 73% of persons treated themselves with herbal, to treat illnesses of the respiratory system and gastrointestinal tract to name a few.³

Jamaica was also the third most frequently mentioned country of prevalence for cannabis.⁴ With the use of Marijuana and teas such a big part of the Jamaican culture, the proximate analysis of the plant will be investigated and the nutritional value will be evaluated.

References

1. United Nations Office on Drugs and Crime (UNODC). *World Drug Report 2021*; 2021.
2. Fraguas-Sánchez, A. I.; et al. *Drugs* **2018**, 78 (16), 1665–1703.
3. Picking, D.; et al. *J. Ethnopharmacol.* **2011**, 137 (1), 305–311.
4. United Nations Office on Drugs and Crime (UNODC). *World Drug Report 2013*; 2013

Methodology



Results

Table 1: Proximate analysis of Strawberry Malawi leaves at three stages of flowering

Flowering Stage	Moisture (%)	Ash (%)	Protein (%)	Fat (%)	Fibre (%)
1 st Stage	75.75 ± 0.40	20.24 ± 0.13	9.81 ± 1.82	2.67 ± 0.04	10.22 ± 0.29
2 nd Stage	64.40 ± 0.40	10.22 ± 0.29	7.64 ± 0.15	4.28 ± 0.28	7.67 ± 0.86
3 rd Stage	59.81 ± 0.92	25.81 ± 0.12	8.43 ± 0.08	8.58 ± 1.24	8.63 ± 1.35

Table 2: Proximate analysis of Strawberry Malawi buds at three stages of flowering

Flowering Stage	Moisture (%)	Ash (%)	Protein (%)	Fat (%)	Fibre (%)
1 st Stage	-	-	-	-	-
2 nd Stage	76.91 ± 0.10	13.20 ± 0.04	8.54 ± 0.86	10.87 ± 0.20	11.13 ± 1.83
3 rd Stage	72.31 ± 0.98	11.39 ± 0.04	11.22 ± 0.34	25.47 ± 1.94	12.03 ± 0.90

Results

Table 3: Proximate analysis of Dutch Thin Mint Cookie leaves at three stages of flowering

Flowering Stage	Moisture (%)	Ash (%)	Protein (%)	Fat (%)	Fibre (%)
1 st Stage	79.04 ± 0.55	19.85 ± 0.25	9.18 ± 1.71	2.11 ± 0.06	10.71 ± 0.94
2 nd Stage	59.80 ± 0.06	12.62 ± 0.07	5.65 ± 0.12	3.44 ± 0.26	6.27 ± 0.39
3 rd Stage	58.24 ± 0.54	21.92 ± 0.16	6.04 ± 0.29	3.68 ± 0.13	10.26 ± 1.77

Table 4: Proximate analysis of Dutch Thin Mint Cookie buds at three stages of flowering

Flowering Stage	Moisture (%)	Ash (%)	Protein (%)	Fat (%)	Fibre (%)
1 st Stage	-	-	-	-	-
2 nd Stage	75.74 ± 0.25	12.37 ± 0.06	9.33 ± 0.41	8.56 ± 0.20	8.96 ± 0.54
3 rd Stage	75.64 ± 0.74	12.50 ± 0.10	9.69 ± 0.43	20.27 ± 0.91	13.90 ± 1.17

Conclusion

Moisture level decreased for both samples, mainly due to the increase in dry weight than to the decrease in moisture content. Ash content in the leaves were found to be higher than those of their corresponding buds, with protein levels decreasing in the leaves while increasing in the buds of both samples. Fat content increased with maturity across both species for leaves and buds with fibre content increasing in the buds of both samples and decreased for the leaves. Overall the findings of the nutritional benefits of Cannabis has revealed that it can be explored for its ability as a food additive.