PHYSICOCHEMICAL PROPERTIES AND FATTY ACID COMPOSITION OF THE STALK OF JUSTICIA CARNEA

BY

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A PROJECT SUBMITTED

TO

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IN PARTIAL FULFILMENT FOR REQURREMENTS IN THE AWARD OF A BACHELOR OF SCIENCE (B. Sc) DEGREE IN BIOCHEMISTRY

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CERTIFICATION

The board of examiners certifies as follows:

That this is the original work of the candidate, ELIJAH JENNIFER EMEKA (U2014/5535028). That the project is accepted and approved in partial fulfilment of the requirements for the Bachelor of Science degree in Biochemistry of the University of Port Harcourt.

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(Project supervisor ) SIGNATURE DATE

Dr. B.A. AMADI

(HEAD OF DEPARTMENT) SIGNATURE DATE

PROF E. CHUKWUOCHA

(DEAN OF SCIENCES) SIGNATURE DATE

EXTERNAL EXAMINER SIGNATURE DATE

DEDICATION

I dedicate this report firstly to God almighty that made it possible for me start and end this academic journey in peace and sound health. I also dedicate this work to my lovely parents Mr. and Mrs. EMEKA ELIJAH who has been supportive throughout the cause of my training may God almighty in his infinite mercies bless you Amen.

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Above all my gratitude goes to God almighty for his strength, infinite mercy, grace, and favour throughout this program without him I couldn’t have achieved this great accomplishment.

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My sincere gratitude goes to my parents, Mr. and Mrs. EMEKA ELIJAH for their advice, love, support and encouragement during the course of my academic journey may God continue to bless you.

ABSTRACT

Justicia Carnea (Acanthaceae), is an upright, evergreen shrub, 3 to 7 feet tall and wide. Justicia Carnea (Acanthaceae), is an upright, evergreen shrub, 3 to 7 feet tall and wide. The aim of the experiment was to investigate the physicochemical properties and fatty acid composition of the leaf-stalk of Justicia Carnea. The leaf-stalk used for this study was obtained at Rumuodumaya in Obio-Akpor, Rivers, Nigeria. The leaf-stalk was diced into bits for 32 hours, after which it was ground into fine powders using an electric blender. A 100g quantity of sample was ground in an electric blender with 400ml of water and filtered in order to obtain a clear filtrate for concentration. After this, it was extracted using a suitable solvent. After this the physicochemical properties was obtained using standard analytical techniques while the fatty acid composition was obtained using GC-MS analysis.From the results, Saponification(SV) was 373.07.14mg/kg; Peroxide value (PV) was 44..20mle1/kg; Acid Value(AV) was 4.215%; Thiobarbituric acid value(TBA) was 1.938 mg/kg; Iodine Value was 33.84; Refractive Index was 1.404; Free Fattty Acid(FFA) value was 2.107; Viscosity Pa.S was 1.774; Density g/m was 0.9914.For the fatty acid components, It contained Oleic Acid(12.494%), Lauric Acid(15.076%), Myristic Acid (26.265%), Palmitic Acid (31.318%), Arachidonic Acid (13.033%), Arachidic Acid(1.9327%), Linoleic Acid (0.929%), Linolenic Acid (0.8359%). It also had a moderate level of saturated fatty acid (> 30%). But it contained a high level of mono-unsaturated fatty acids(>44%) which are beneficial to health including omega-3 fatty acids. It was concluded that the plant may be of medicinal value and further pharmacological investigation should be carried out on the plant.