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BOOK OF ABSTRACTS

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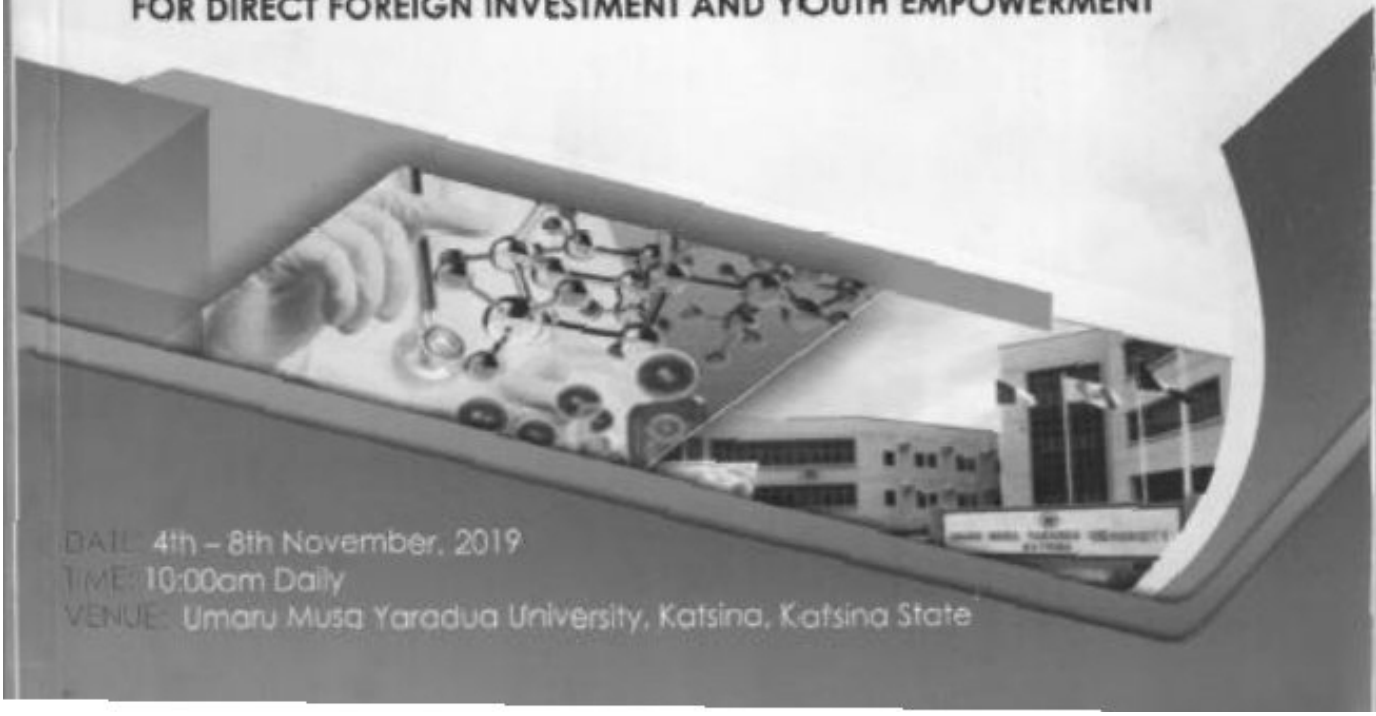
KATSINA 2019

THEME:

BIOCHEMISTRY & MOLECULAR BIOLOGY:

OPTIMISING THE VALUE OF LOCAL RESOURCES FOR DIRECT FOREIGN INVESTMENT AND YOUTH EMPOWERMENT



DATE: 4th – 8th November, 2019
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VENUE: Umaru Musa Yaradua University, Katsina, Katsina State

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EFFECT OF DIFFERENT LIGHT COLOR ON THE GROWTH OF TOMATO (*Solanum lycopersicum*) AND COWPEA (*Vigna unguiculata*) USING ARTIFICIAL LIGHT SOURCES

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Abstract

Solar radiation is radiant (electromagnetic) energy from the sun it provides light and heat for the Earth and energy for photosynthesis. This radiant energy is necessary for metabolism of the environment and its inhabitants. The aim of the study is to assess the vegetative growth of Tomato *(Solanum lycopersicum)* and Cowpea (*Vigna unguiculata*) plants specie using artificial light sources of Compact Fluorescent Light (CFL) and Light Emitting Diodes (LED) under indoor experiment in Katsina State. Tomato and Cowpea plant were placed in a growth Chamber of 40 watts Compact Fluorescent Light (CFL) and 12 watts Totek Light Emitting Diodes (LEDs) for 9WAS and 8WAS respectively. Lamps emitted light colors: White, Green, Blue and Red. It was found that the growth of Tomato and Cowpea Plant was dependent upon the lamp type and light color. The highest tomato plant height, number of leaves, was obtained under the Blue LED and the least in red and green LED, while highest chlorophyll content under White LED and least under blue CFL. The highest cowpea plant in height and number of leaves was obtained in Red CFL and the least in Red and Green LEDs while the highest chlorophyll content, under the sunlight (Control) and least under Red and Green LEDs. Precise use of grow light may hold a promise in maximizing plant production, quality of vegetables grown in controlled environment.

Key words: Compact Fluorescent Light, Light Emitting Diodes, Katsina, Chlorophyll.

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ANTIOXIDANT ACTIVITY OF CRUDE AND FLAVONOID EXTRACTS OF *Ocimum gratissimum* AND *Hyptis suaveolens* LEAF

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Abstract

Antioxidants are natural substances that can inhibit oxidation or delay cell damage. In this study the antioxidant activity of crude and flavonoid extracts of *Ocimum gratissimum* and *Hyptis suaveolens* leaves were evaluated. The crude leaf extract of *ocimum gratissimum* and *Hyptis suaveolens* leaf were obtained by cold maceration and the flavonoid content extracted from the crude extracts. The antioxidant activity for the crude and flavonoid extracts were investigated using 1, 1-Diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity. The result obtained in the study indicated higher flavonoid content in *Ocimum gratissimum* 568.92 mg/100 g than *Hyptis suaveolens* leaf extract 454.86 mg/100 g. The crude extract of *Hyptis suaveolens* leaves exhibited a stronger radical scavenging activity with IC_{50} value of 109.12 µg/mL than the flavonoid extract of *Hyptis suaveolens* leaf, the crude extract of *Ocimum gratissimum* leaf and flavonoid extract of *Ocimum gratissimum* leaf with IC_{50} values of 189.24, 138.72 and 182.84 µg/mL respectively. The result suggest that the flavonoid from the two plants used in this study can scavenge for free radicals and may aid in enhancement of health against reactive oxygen species.

Key words: *Ocimum gratissimum, Hyptis suaveolens*, Flavonoid, Antioxidant, DPPH.