

## *Xylopi* *aethi* *o* *p* *i* *c* *a* HPLC-DAD polyphenol profiling and antioxidant status from South-South region of Nigeria

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**Abstract.** To fill nutrient gaps, supplements are employed in the field of nutrition. The spice *Xylopi* *aethi* *o* *p* *i* *c* *a* grows wild in many African countries and has been used as flavouring for soups. This study evaluates the polyphenols and antioxidant profile of different fractions of *X. aethi* *o* *p* *i* *c* *a* methanol extract. Powdered sample of *X. aethi* *o* *p* *i* *c* *a* (250 g) was suspended in methanol (1.5 litre) for 48 hours and the extract was concentrated at 45 °C using water bath to obtain methanol crude extract which was fractionated into *n*-hexane (*n*-Hex), chloroform (Chl), diethyl ether (DEE), *n*-butanol (*n*-Bu) and aqueous fractions using liquid-liquid partition separation technique. Antioxidant properties were investigated using standard methods and the polyphenols were estimated using high performance liquid chromatography with diode-array detector (HPLC-DAD). Results revealed that the DEE fraction had significantly ( $p < 0.05$ ) high total phenol content (TPC), proanthocyanidins, anthocyanins, 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging, ferric reducing antioxidant power (FRAP) and total antioxidant capacity (TAC) as compared with other fractions. The highest luteolin and taxifolin content was detected in *n*-Hex fraction. Polyphenols found in DEE fraction in the established HPLC-DAD assay were *p*-anisic acid (0.07 ng/g), caffeic acid (0.56 ng/g), vanillic acid (0.91 ng/g), salicylic acid (1.64 ng/g), gallic acid (3.09 ng/mL), ferulic acid (3.64 ng/g), *p*-coumaric acid (5.15 ng/g), sinapinic acid (6.63 ng/g) and protocatechuic acid (24.89 ng/g). The different fractions of *X. aethi* *o* *p* *i* *c* *a* displayed various polyphenols potential with probable antioxidant activity, which may be useful in neutralizing free radicals and the treatment of chronic inflammatory associated metabolic ailments, such as obesity and diabetes.

**Keywords:** HPLC-DAD; luteolin; polyphenols; taxifolin; *Xylopi* *aethi* *o* *p* *i* *c* *a*.

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