PSNGOM017

Antifungal activity of *Allium sativum* and *Zingiber officinale* against *Tinea capitis* among Primary school pupils in Balanga, Gombe State Nigeria

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Background

Allium sativum and Zingiber officinale are known to have antifungal activity. Fungal infection (dermatophytosis) of the scalp is a prevalent infection that constitutes a public health challenge among children.

Aim

This study evaluated *in-vitro* antifungal activity of *Allium sativum and Zingiber officinale* against *Tinea capitis.*

Methods

Sixty (60) specimen were gotten from the affected scalp of primary school pupils in Balanga, Gombe State. Isolation, identification and susceptibility test using *Allium sativum* and *Zingiber officinale* against the isolated Tinea capitis and *A. niger* were carried out using Griseofulvin as control.

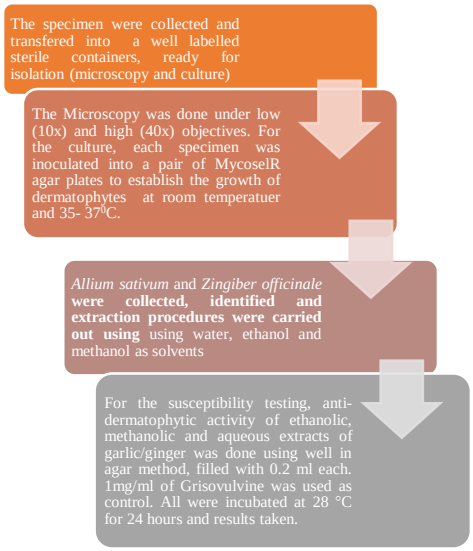

Figure 1: Methodology Flow Diagram

Results

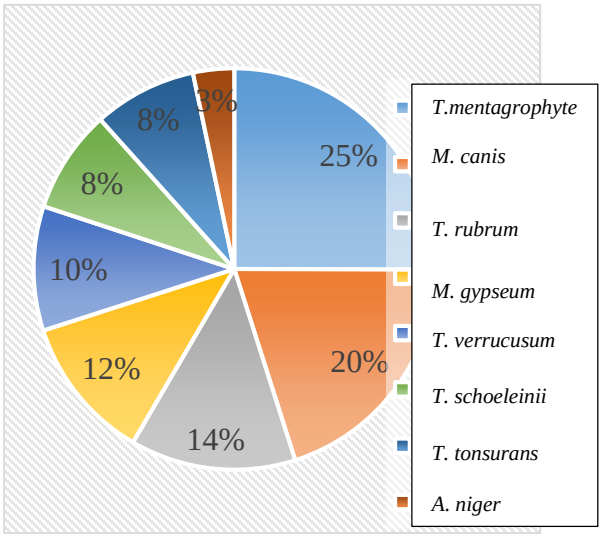

Figure 2: Results from microscopy and culture of dermatophyte isolates

Fungi isolate	Meth.	Eth.	Aqu.	Gris
M. canis	22.44	19.63	16.40	0.00
M. gypseum	24.22	23.67	16.53	0.00
T. tonsurans	19.88	20.95	0.00	0.00
T. schoenleinii	20.07	21.82	15.66	31.00
T. rubrum	25.87	24.81	18.33	0.00
T. verrucusum	21.33	22.33	15.67	0.00
T. mentagrophyte	24.00	20.40	12.93	0.00

Table 1: Zone of inhibition in mm for Methanolic (Meth.), Ethanolic (Eth.) and aqueous (Aqu.) extract of garlic (*Allium sativum*). Griseofulvin (Gris.) as control.

Fungi isolate	Meth.	Eth.	Aqu.	Gris.
M. canis	20.62	19.61	15.30	0.00
M. gypseum	21.86	23.44	15.56	0.00
T. tonsurans	20.80	20.51	0.00	0.00
T. schoenleinii	24.93	22.81	14.26	31.00
T. rubrum	21.33	20.19	12.00	0.00
T. verrucusum	20.92	20.61	14.54	0.00
T. mentagrophyte	23.03	24.60	0.00	0.00

Table 1: Zone of inhibition in mm for Methanolic (Meth.), Ethanolic (Eth.) and aqueous (Aqu.) extract of garlic (*Zingiber officinale).* Griseofulvin (Gris.) as control.

More Results

Eight (8) organisms were isolated: *Trichophyton mentagrophyte (25%), Mricrosporum canis (20%), Trichophyton rubrum (14%), Microsporum gypseum (12%), Trichophyton schoenleinii (8%), Trichophyton verrucusum (10%), Trichophyton tonsurans (8%) and Aspergillus niger (8%).* That is 58 pupils (96.33%) infection positive with *Tinea capitis* and 2 pupils (3.33%) infection were contaminated with *Aspergillus niger*. Methanolic, ethanolic and aqueous extract of garlic inhibited the fungi with zones ranging from 12.93- 25.87mm. And methanolic, ethanolic and aqueous extract of ginger inhibited the fungi with zones ranging from 12.00-24.6mm.

Conclusions

The prevalent causative agent of *Tinea captis* in Balanga LGA was found to be *Trichophyton mentagrophytes.* Anthropophilic and zoophilic dermatophyte were found to be responsible for Tinea captis. The findings of this study showed that the extracts of garlic and ginger had a marked significance in inhibiting the isolated organisms. This can be compared favourably with previous studies on antifungal activity of garlic and ginger, the plants are promising source of drugs for treatment of dermatophytic infections.