Exploring the potential of Ehiopian forests for edible mushrooms: insight for mycosilviculture based-forest management

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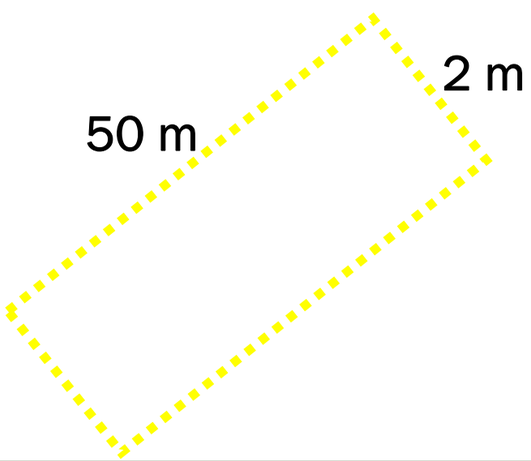
Background:

Ethiopia has a diverse forest resources. These forest support livelihoods of many rural populations. However, mycological resources in Ethiopian forests is understudied and underutilized.

Aims: investigation of mushrooms resources, and habitat suitability for sustained production and conservation of Ethiopia forests.

Materials and methods

The study areas: northern, central and southern in Ethiopia, Fig.1.



- Sporocarps sampling
- Specimens and ecological notes
- Composite soil samples collected, Fig.2
- 63 sample plots
- Morphological and molecular analysis
- Linear mixed model
- Non-metric multidimensional Scaling

Fig.1: Locations where the study conducted in Ethiopia.

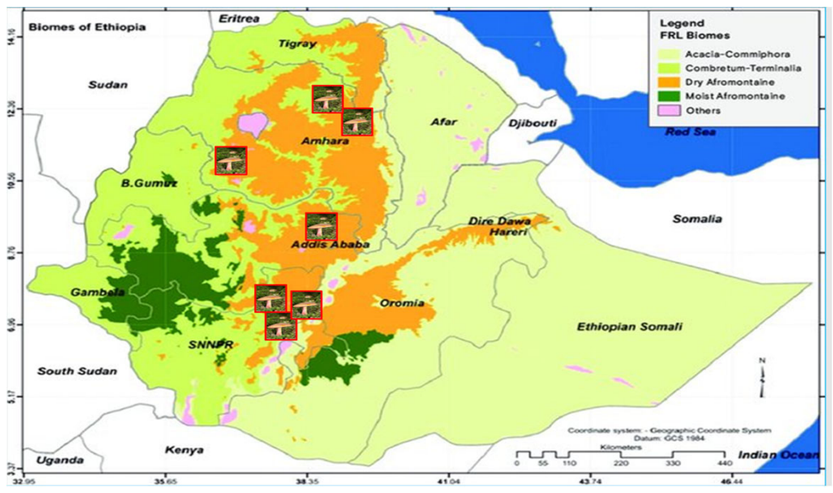
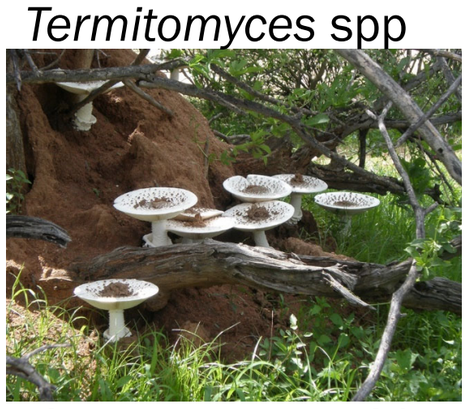


Fig.2: Sample preparation for DNA extraction

Results: 64 mushroom species were recorded, Fig. 3. *Higher number* of mushrooms in natural forest while greater production in plantation forest, and the composition of mushrooms significatly varied by forest types, Fig. 4.

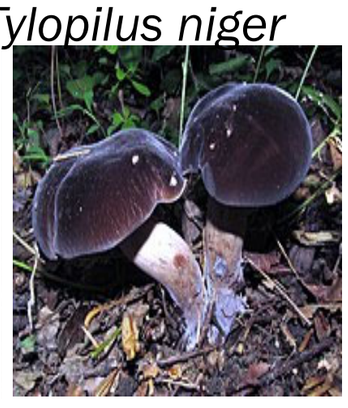
Fig.3: Some selected mushrooms recorded,

Termitomyces spp



Suillus luteus

Tylopilus niger



Agaricus campestroides

Macrolepiota africana

M. anatolica

Fig.4: *High* production of sporocarps and very high in plantation forest (*left*), and the composition of mushrooms significatly varied by forest types and forest stands (*right*)

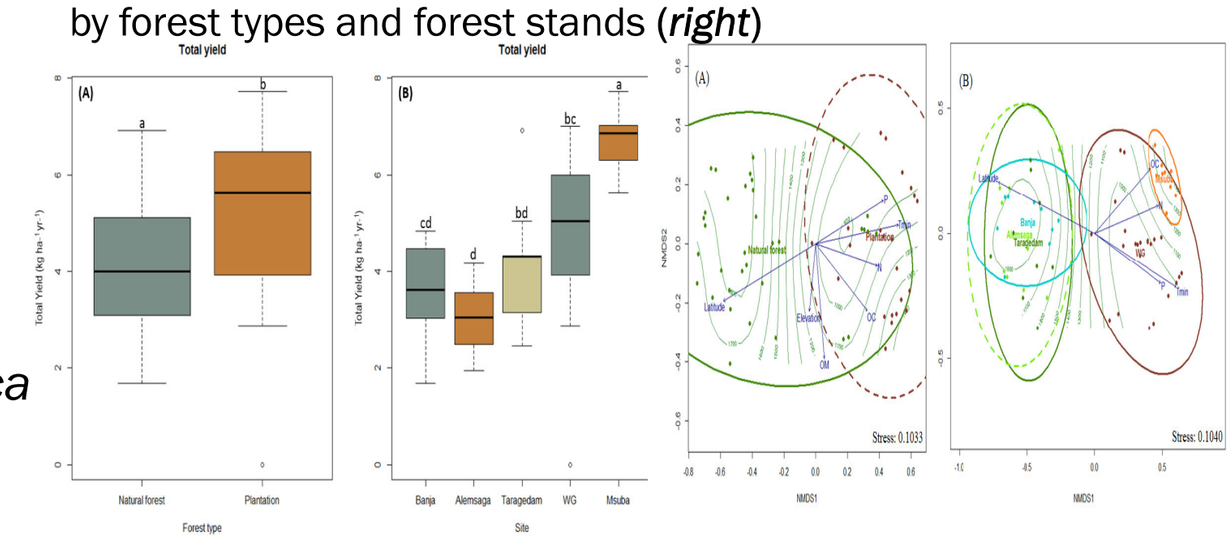


Fig. 5: Production of mushrooms at Wondo Genet mushroom training center, Ethiopia

Conclusion and implications:

- Changes in forest cover largely affect mushrooms production and composition.
- Promoting mycosilviculture should serve as a tool for sustainable forest management and rural livelihoods, Fig.5.

References: Main findings of this presentations are summarized, based on Kewessa et al. (2022; 2023).

Acknowledgments