

# Systematic Analysis of Tinder Fungi Spreading in the Northern Region of Azerbaijan

V.M. Karimov<sup>1</sup>, I.T. Babayeva<sup>2</sup>, Kh.G. Ganbarov<sup>3</sup>

Associate Professor, Department of Medical Biology, Azerbaijan Medical University, Baku, Azerbaijan<sup>1</sup>

Associate Professor, Department of Microbiology, Baku State University, Baku, Azerbaijan<sup>2</sup>

Professor, Department of Microbiology, Baku State University, Baku, Azerbaijan<sup>3</sup>

**ABSTRACT:** The paper presents the systematic analysis of wood-rotting tinder fungi spreading in the Northern region of Azerbaijan. It has been found 22 species of tinder fungi belonging to 12 genera (*Bjerkandera*, *Daedalea*, *Fomes*, *Fomitopsis*, *Inonotus*, *Ganoderma*, *Phellinus*, *Polyporus*, *Pseudotremetes*, *Schizophyllum*, *Tremetes* and *Tyromyces*) and 4 families (*Hymenochaetaceae*, *Ganodermataceae*, *Polyporaceae* and *Schizophyllaceae*). Among them 14 species cause white rot, and 8 species cause brown rot in the natural ecosystem.

**KEYWORDS:** Tinder fungi, lowland forests, wood-destroying, white rot, brown rot.

## I. INTRODUCTION

Samur-Davachi lowland forests cover the territory of 20196 ha. The area mainly includes plain-preventive forests along the resort and roads (railways and highways). The species of trees in these forests consists of 70% of Oaks, 20% of Hornbeam, 5% of Poplar and Willow, and remaining 5% of Birch and Ash-trees, Caucasian persimmon, Acacia and others [3,13].

The major natural pests of the forest trees are tinder fungi. The comprehensive study of these fungi will enable to take preventive measures against their impact on the trees and to be used for the manufacture of useful products from them, including ferments, antibiotics, polysaccharides and other biologically active substances [4-6].

The information about the study of the microbiota of Samur-Davachi lowland forests has not been sufficiently provided in the literature. The literature mainly provides information about the study of micromycetes. According to these resources, 24 species of the placental fungi spread in the forests of Khachmaz, Khudat and Yalama have been observed by Mehtiyeva N. [9-12], 11 species – by E. Huseynov [8], and 2 species of gastromycetes – by A. Sadikhov [14].

However, the information about the tinder fungi rotting the trees in these regions has not been provided enough. Thus, only two species of fungi – *Flammulina velutipes* and *Tyromyces kumatodes* have been observed on the fruit trees in the territory of Khachmaz [8]. Only the latter one is tinder fungi. The study of the tinder fungi spread in Samur-Davachi lowland forests, which is required to be preserved, is of great importance.

The aim of the present work was to provide systematic analysis of wood-destroying tinder fungi spreaded in Samur-Davachi lowland forests of Azerbaijan.

## II. MATERIALS AND METHODS

The field studies have been conducted in the forests of Khachmaz, Khudat and Yalama in May-June and September-October, 1999-2001, i.e., when the fungi are harvesting.

The amount of the fungi has been defined by their fruit fleshed came across on the substrates (trees). Multiple fruit fleshed of the same species on each substrate (live or dry trees, stumps, lying stems and etc.) have been recorded as an individual.

The coefficients characterizing species composition of the kinds and families, including kind composition of the families have been defined by dividing the species by the number of kinds and families, and by dividing the kinds by

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the number of families. The coefficients of the species composition of the xylotrphic (wood-destroying) fungi have been defined by the rations of the families with the kinds and species [7].

Fungi species have been identified by the description of their fruit bodies [1-2].

### III. RESULTS AND DISCUSSION

The systematic list of the fungi observed as the result of the field studies conducted in Samur-Davachi lowland forests in the years of 1999-2001, is provided in the Table 1. Total 22 species of tinder fungi have been observed on live or dry trees, lying stems and brunches, and stumps. Among them 14 species cause white rot and 8 species cause brown rot.

**Table 1.** Systematic list of tinder fungi spreading in Samur-Davachi lowland forests

No	Species	Rot type
Family <i>Ganodermataceae</i>		
1.	<i>Ganodermaapplanatum</i> (Pers.: Waller) Pat.	White rot
2.	<i>G. Lucidum</i> (leyss.:Fr) Karst.	White rot
Family <i>Hymenochaetaceae</i>		
3.	<i>Inonotushispidus</i> (Fr) Karst	White rot
4.	<i>Phellinusigniarius</i> (l.: Fr) Quel	White rot
5.	<i>Ph.pomaceus</i> (Pers) Maire	Brown rot
6.	<i>Ph. Robustus</i> (Karts) Bourd. Et Galz	Brown rot
7.	<i>Ph. Torulosus</i> (Pers) Bourd. Et Galz	Brown rot
Family <i>Polyporaceae</i>		
8.	<i>Bjerkanderaadusta</i> (Fr) Karst	White rot
9.	<i>Trametes cervinus</i> (Schw.) Bond.	White rot
10.	<i>T. hirsutus</i> (Wulf.) Quel.	White rot
11.	<i>T. vaporarius</i> (Fr.) Bond. Et. Sing	White rot
12.	<i>T. versicolor</i> (L.: Fr) Quel.	White rot
13.	<i>T. zonatus</i> (Nees.:Fr) Quel.	White rot
14.	<i>Daedaleaquersina</i> L.: Fr	Brown rot
15.	<i>Fomesfomentarius</i> (L.: Fr) Gill	White rot
16.	<i>Fomitopsispinicola</i> (Sw.: Fr) Karst	Brown rot
17.	<i>F. subrosea</i> (Weir.) Bond. Et. Sing	Brown rot
18.	<i>Pseudotrametesgibbosa</i> (Pers.: Fr) Bond	White rot
19.	<i>Polyporussquamosus</i> (Hids) Fr.	White rot
20.	<i>Tyromycescaesius</i> (Schard.: Fr) Marr	Brown rot
21.	<i>T.kumatodes</i> (Rost. Sensus. Bourd et Galz) Donk	Brown rot
22.	<i>Schizophyllum commune</i> Fr.	White rot

The observed fungi are referred to 4 families. Among them, 14 species belong to the family *Polyporaceae*, 5 species to *Hymenochaetaceae*, 2 species to *Ganodermataceae*, and 1 species to *Schizophyllaceae*.

As it is seen from the spectrum of the fungi families provided in the Fig. 1, about 62% of the fungi species belong to the family *Polyporaceae*, and this family dominates, while the family *Hymenochaetaceae* is subdominant.

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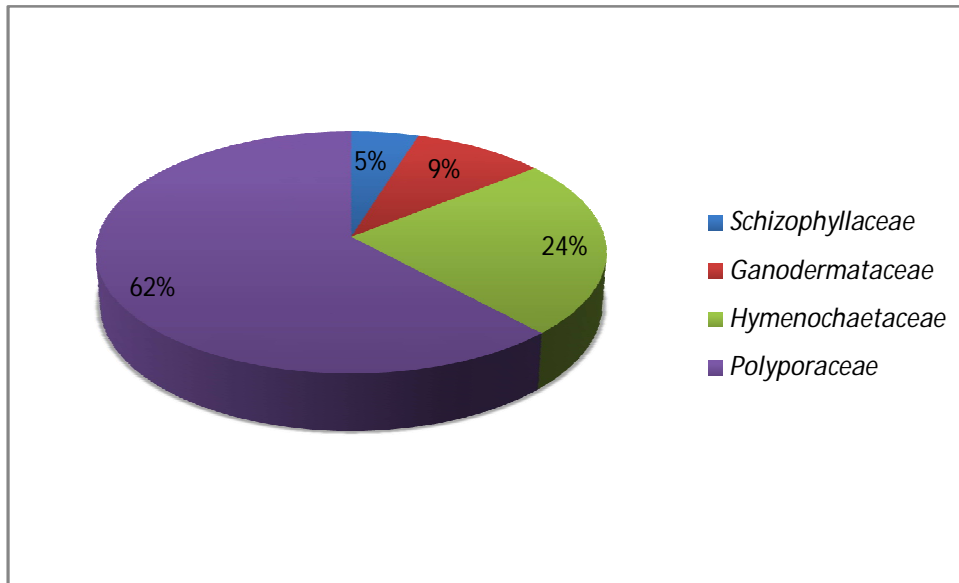


Fig. 1. The spectrum of the families of tinder fungi spreading in Samur-Davachi forests (%)

When it comes to the genus composition of the observed fungi, it has been defined that, fungi species belong to 12 genera and among them, genus *Trametes* has 5 species (dominant), the genus *Phellinus* has 4 species, which are subdominant (Fig. 2). Obviously, each of genera *Fomitopsis*, *Ganoderma* and *Tyromyces* is characterized by 2 species, while each of the remaining kinds is characterized by 1 species.

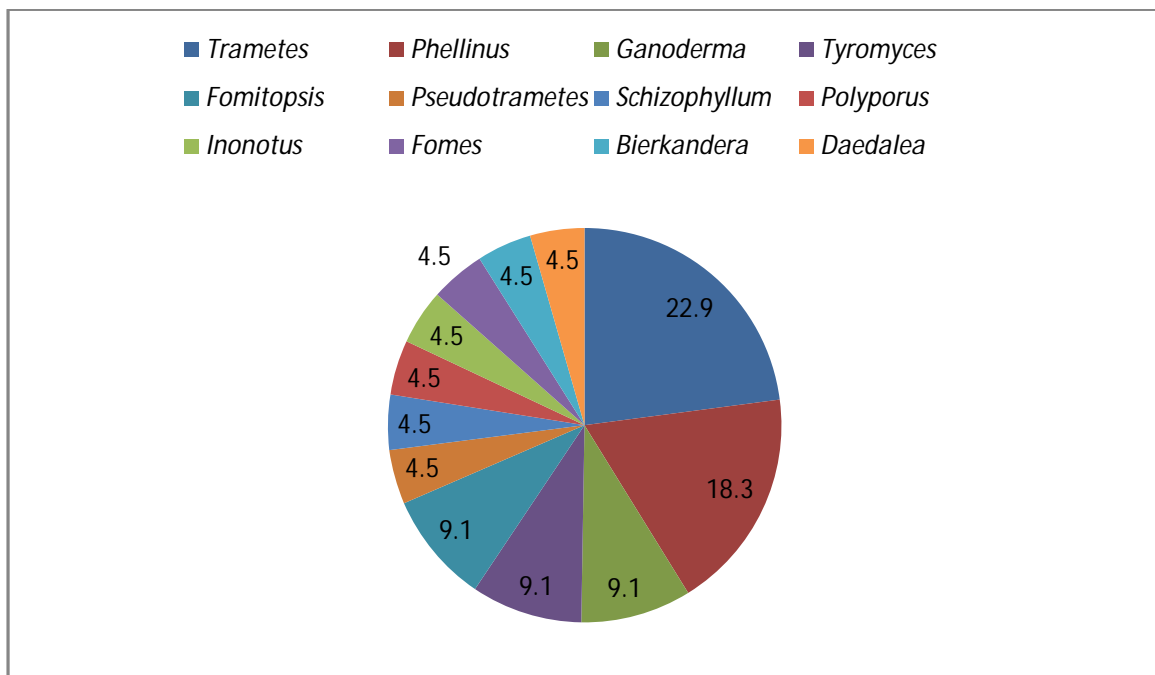


Figure 2. The spectrum of the genera of tinder fungi spreading in Samur-Davachi forests

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Species diversity of the fungi has been defined as 1.83, and kind and species diversity of the family has been defined as 5.5 and 3 respectively (Table 2). The ration of the species diversity is 1:3:5.5.

**Table 2.**Species, genus and family ratios of tinder fungi spreading in Samur-Davachi forests

Number of species	Number of genera	Number of families	Genus diversity	Family diversity	Genus diversity of families	Ratios of species diversity
22	12	4	1.83	5.5	3	1:3:5.5

Thus, it has been determined that, in Samur-Davachi lowland forests 22 fungi species, which belong to 4 family and 12 genera, are participating in the wood rotting. Among them 14 species cause white rot, and 8 species cause brown rot.

## IV.CONCLUSION

In Samur-Davachi lowland forests has been found 22 species of wood-rotting tinder fungi belonging to 12 genera (*Bjerkandera*, *Daedalea*, *Fomes*, *Fomitopsis*, *Inonotus*, *Ganoderma*, *Phellinus*, *Polyporus*, *Pseudotrampetes*, *Schizophyllum*, *Trampetes* and *Tyromyces*) and 4 families (*Hymenochaetaceae*, *Ganodermataceae*, *Polyporaceae* and *Schizophyllaceae*). Among them 14 species cause white rot, and 8 species cause brown rot in the natural ecosystem.

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