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History of mushroom hunting and identification in Nigeria

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Abstract

Mushrooms has a long history of use as foods and for traditional medicines in many countries of the world. In the olden times, mushrooms sourcing is entirely from the wild. Identification of mushrooms in those days were typically based on individual knowledge and conversance acquired in the course of exploration and utilization. Nowadays, as a result of advancement in mushroom science, cultivators now produce edible mushrooms commercially, a development which has tremendously impacted the industry. This paper reviews the agelong hunting history and identification practises of mushroom in Nigeria with a view to providing useful information to individuals and scientists who may have interest in studying or carrying out research in the area in the future.

Keywords: Mushrooms, macrofungi, hunting, identification and ethnomycological uses

Introduction

The term mushroom is not a taxonomic division. Mushrooms are macrofungi with distinctive fruiting body, which can be hypogeous or epigeous, large enough to be seen with the naked eye and to be picked by hand (Chang and Miles, 1992) [6]. Mushrooms have long been used as a valuable food source and as traditional medicines around the world, especially in Japan and China. Records of health promoting properties such as antioxidant, antimicrobial, anticancer, cholesterol lowering and immunostimulatory effects have been reported for some species of mushrooms (Anderson and Stasovski, 1992; Mau *et al.*, 2004) [4, 10]. Ironically, the first record of mushroom used as hallucinogenic agent was credited to the Yoruba tribe of Nigeria in Africa (Griensven, 2009) [7]. The record dates back to the Paleolithic period (7000-9000 years ago) (Samorini, 1992) [19]. It was not so in Nigeria. Information on the indigenous use of mushrooms had been passed orally from one generation to another (Akpaja *et al.*, 2003). It is possible that some of this undocumented information had been lost.

Women who sells vegetables and mushrooms and elderly people are usually most helpful in supplying information about ethnomycological uses of mushrooms in Southwest Nigeria (Oso, 1977). The same observations were also made in other parts of the country where survey were carried out (Akpaja *et al.*, 2003). In essence, the younger generation in Nigeria has little or no knowledge about ethnomycological uses of mushrooms. Some edible or medicinal mushrooms in Nigeria had also been extinct as a result of human activities during farming and annual wild fire out break (Ayodele *et al.*, 2009) [5]. However, in the last 3 to 4 decades, scientist in Nigeria had been gathering information on medicinal uses of mushrooms through survey. The use of these mushrooms varies from one ethnic group to the other. Ethnomycological uses of edible and medicinal mushroom by the Yoruba people of South West Nigeria had been reported (Oso, 1975; Alabi, 1990) [18, 3].

Mushroom Picking, Habitat, Substrate, popular Wild Mushroom and Consequences of Wild Mushroom Hunting

The natural habitat of mushrooms range from farm lands, forest and newly cleared lands, to cut pieces of wood found in several places. In these natural habitats, availability of mushrooms is seasonal, depending on the species; some may be available just at the onset of rains, others during the rains; yet others when the rains are winding up (Adedokun and Okumadu, 2017). Tropical rain forest remains a good habitat for many mushroom. Many wild edible mushroom are considered high delicacy among rural dwellers. Mushrooms such as *Termitomyces*

robustus, *Termitomyces globulus*, *Volvariella esculenta*, *Volvariella volvacea*, *Lycoperdon subnudus* and *plerotus tuber-regium*. Other wild popular edible mushrooms include *Auricularia polytricha*, *Lentinus subnudus*, *Lycoperdon pusillum*, *Lycoperdon giganteum*, *Pleurotus florida*, *Psathyrella atroumbonata*, *Shizophyllum commune*, *Termitomyces microcarpus* and *Tricholoma lobayensis* (Jonathan *et al.*, 2006) [8].

Different species of wild edible mushrooms grow on various natural substrates such as garden soil, decaying wood termite nest, palm wastes, leaf liters, under the shade provided by teak, cocoa, coffee and rubber plantation. People usually go out early in the morning for mushroom hunting, the collected edible mushroom are sorted out and cooked. Some wild mushroom have symbiotic relationship with trees; thus knowing the surrounding can help in wild mushroom identification because certain species prefer certain trees. However, the consequences of wild mushroom hunting include the following risks, mushroom poisoning which could cause various discomfort ranging from mild or severe gastrointestinal disturbances to outright death (Stamets, 2000) [20]. Also mushroom hunters may be beaten by snakes.

Adedokun and Okomadu (2017) carried out a survey on the perception and consumption of wild and cultivated mushroom in Port Harcourt, Nigeria; the survey showed that 31.1% were introduced to mushroom by family members while 46.1% were introduced by friends. It further revealed that 53.3% were conversant with wild mushrooms, 27.8% with cultivated mushrooms, and 16.7% with both wild and cultivated mushroom. Only 28.9% had been consuming mushrooms for over 10 years; whereas 13.3% had never tasted mushrooms. Year-round consumption was only 12.2%; while 57.8% consumed mushroom once awhile. However, if cultivated mushrooms could be available to households, 58.9% indicated interest in mushroom consumption. On the other hand, if nutrition facts of wild and cultivated mushrooms were the same, 38.9% were willing to consume cultivated mushrooms, 30.0% wild, 20.0% both and 11.1% insisted on no consumption. Low consumption was attributed to loss of interest (24%), unavailability (68%), mushroom poisoning (4%) and how expensive cultivated mushroom is (4%). Consumption history revealed that, although a large proportion (71.1%) of respondents had knowledge about mushroom consumption, only a few (12.2%) consumed it year-round.

A greater percentage (57.8%) consumed it once in a while. There is, thus need for basic awareness about nutritional benefits from mushrooms. It therefore become necessary to raise the knowledge of individuals and enable more people to utilize the benefits mushrooms possess.

Many genera of mushrooms are edible and are rich in essential nutrients such as carbohydrates, proteins, vitamins, mineral, fat, fibres and various amino acids (Okwulehie and Odunze, 2004) [16]. Most people eat mushrooms, mostly because of its flavour, meaty taste and medicinal value (Moore and Chiu, 2001) [11]. Mushrooms generally possess most of the attributes of nutritious food as they contain many essential nutrients in good quantity. In Nigeria, a great quantity and variety of edible and medicinal mushrooms are sourced from the wild due to inchoate mushroom farming culture. This practice of mushroom hunting existed for decades spanning generations and mostly embarked upon by children and women (Okhuoya, 1997) [13]. About twenty-five edible mushroom species of good repute whose knowledge were handed down generational lines via oral communication

have been identified in Nigeria (Labarere and Menini, 2000) [9].

Table 1: Some Edible and Medicinal Mushroom and Their Location in Nigeria

Mushroom	Yoruba (West)	Igbo (East)	Hausa (North)
<i>Auricularia auricular</i>	+	+	+
<i>Calvatia cyathiformis</i>	+	-	+
<i>Chlorophyllum molybdites</i>	*	+	-
<i>Coprinus picaceus</i>	-	+	-
<i>Coprinus setulosus</i>	+	-	-
<i>Coprinus atramentarius</i>	+	-	-
<i>Cortarius mellioleus</i>	+	+	*
<i>Daldinia concentrica</i>	*	*	*
<i>Lentinus subnudus</i>	+*	+	-
<i>Pleurotus ostreatus</i>	+*	+	-
<i>Pleurotus pulmonarius</i>	+	-	-
<i>Pleurotus squarrosulus</i>	+	+*	+
<i>Pleurotus tuber regium</i>	+*	+*	+*
<i>Psathyrella umbonata</i>	+	+	-
<i>Shizophyllum commune</i>	+*	+	*
<i>Termitomyces clypeatus</i>	+	+	+
<i>Termitomyces globules</i>	+	+	-
<i>Termitomyces microcarpus</i>	-	+	-
<i>Termitomyces robustus</i>	+	+	+
<i>Volvariella esculenta</i>	+	+	-
<i>Volvariella volvacea</i>	+	-	-

+ = edible, +* = edible and medicinal, * = medicinal, - = uses unknown (Okhuoya *et al.*, 2010) [15].

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