



EFFECT OF ALCOHOLIC AND AQUEOUS EXTRACT OF *LANTANA CAMARA* LEAF ON THE GROWTH OF OYSTER MUSHROOMS *PLEUROTUS OSTREATUS* AND SOME FUNGI ACCOMPANYING LOCAL BARLEY GRAIN *HORDEUM VULGARE*

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Abstract

This study was conducted in the Microbiology Laboratory of the Department of Biology for Preliminary Studies, College of Education for Girls, University of Kufa in November 2019 to test the effect of hot water extracts and alcoholic extracts of *Lantana camara* leaves on fungi *Apergillus niger*, *Apergillus flavus*, *Apergillus terreus*, *Pleurotus ostreatus* fungi were cultivated in the laboratory and incubated at a temperature of 25 ± 2 , the results of the hot water extract of the leaves of the *Lantana camara* plant showed a significant difference on the diameter growth of the fungi under study within 72 hours, amounting to (3.66, 3.00, 2.12 and 1.33) cm respectively, compared with the control treatment which gave (9, 9, 9, 7.16) cm, respectively. The results of the study also showed significant differences in the hot water extract of the leaves of the *Lantana camara* plant on the diameter growth during 144 hours for fungi *Apergillus niger*, *Apergillus flavus*, *Apergillus terreus*, *Pleurotus ostreatus*, amounted to (7.56, 5.73, 4.83 and 3.57) cm respectively, With a control treatment of (9.00)cm for all fungi under study. The results of the alcoholic extract of the leaves of the *Lantana camara* plant showed a significant difference on the diameter growth of the fungi under study which amounted to (6.46, 6.84, 5.91 and 7.15) cm within 72 hours. The results of the alcoholic extract of the leaves of the *Lantana camara* plant showed that the highest value of the diameter growth rate of *Pleurotus ostreatus* was 3.12 cm while the lowest diameter rate of the *Apergillus niger* was 4.87 cm with in 6 days 1.25 cm while the lowest diameter growth rate for *Aspergillus niger* was 2.54 cm.

Introduction

One of the best months of the year to grow the *Lantana camara* plant is the month of March, when the plant is cultivated with cuttings during one of the days of this month, until it begins to grow during the spring. It is one of the beautiful shrubs and is characterized by its variety of uses in coordinating the gardens and the ease of caring for them and the ease of propagating them as they multiply the mind. Kingdom Plants of the rank Oral Quarterly.

The oyster mushroom, *Pleurotus ostreatus* is one of the cultivated Paisyid fungi that has medicinal benefits because it contains a group of effective chemical compounds (Babu and Subhasree, 2008) and the fungus has a great competitiveness against many of the fungi contaminated by the diet (Hassan, 2015). It has a major effect in reducing serum cholesterol and its distinctive

effect on stimulating cellular immunity when feeding on it (Hatvani *et al.*, 2008).

Fungal mycelium is characterized by possessing immune system-stimulating substances and anti-fungicides and toxins (Refaie and Daba, 2009). The species belonging to oyster mushrooms (*Pleurotus*) is characterized by its ability to grow in a variety of cultivated media with different environmental conditions (Kong, 2004). Oyster mushrooms also contain a high content of carbohydrates, proteins and fats, as well as salts, vitamins and many other nutrients (Zinabu *et al.*, 2015).

Barley is one of the crops known to man since prehistoric times. It was the main source of bread in the countries of the ancient world. There are many opinions about the original place in which it originates because of its suitability for growth in different environments. A number of wild shapes and styles are present. While others see that barley may originate in Southeast Asia,

especially in China, Tibet and Nepal, while (Harium, 1968) believes that the extinct wild barley is the origin from which the current barley developed and that was grown in the same areas where wild barley grows.

Barley is an annual weed that dates back to *Hordeum vulgare* and has several uses mainly used as animal feed (green feed or grains). Barley bread is used for diabetics as it is used in the preparation of soups. Barley bread is used for different cultures from Scotland to Africa. In 2007, barley was considered the fourth cereal crop in terms of production, as it reached 1360,000,000 tons and the cultivated area reached 566,000 km² and it contains a high percentage of B-glucan bounds or bonds, which are a protective wall for the grains of starch from decomposition due to digestive enzymes, high fiber content and low content of Amino acids and low energy content (Mahrous & Soliman, 2009).

The aim of this study is to study the effect of hot water extract and alcoholic extract of leaves of the *Lantana camara* plant on a group of fungi: *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus terreus* and *Pleurotus ostreatus*.

Literature Review

Plant *Lantana camara*

It is one of the beautiful shrubs and is characterized by its diversity in its use in coordinating gardens, and the ease of caring for it and its ease of multiplication where it multiplies the mind, affected by a decrease in temperatures and drains its branches. It is used as a vegetable fence, as a climbing plant on fences, or as individual shrubs. Its colors vary as well as in one flower, including white, yellow, red, and two-color (Lewis WH and Ertter B and Bruneau A, 2014).

Barley:

It is a herbaceous plant around the family (the evangelical family) and its scientific name is *Hordeum vulgare*

Scientific classification:

Kingdom: Plantae

Unranked Division: - Covered with Angiosperms seeds

Category: Monocots

Order: -Poales

Family: Poaceae

Under the Subfamily family: - Povidaceae

Tribe: -Triticeae

Genus: - *Hordeum*

Genre Species: - *Hordeum vulgare*
(Al-Fadhli, 2001).

The oyster mushroom was scientifically described for the first time by the Dutch naturalist Nikolaus Joseph in 1775 and named it *Agaricus ostreatus* (Jacq, 1774) and in 1871 the German fungi Paul Kummer worked to transform the oyster mushroom into the genus *Pleurotus* (Bisby *et al.*, 2011). The name of the genus is Latin and means lateral ear and indicates the lateral association of the trunk, either the *ostreatus* section is a reference to oysters, the shape of the fruit bodies is similar to the shape of the oyster and has a special and distinct flavor (Croan, 1999). It is one of the fungi that is forced to feed. This fungus is considered a fungus Adenoids belonging to the family of Pleurotaceae of the Agaricales of the Basidiomycetes class of the true fungi Eumycota belonging to the fungi kingdom Mycetozoa (Manolea *et al.*, 2006). Production was widespread in Hungary (Hungary) in 1969 by planting on tree trunks and then spread to trees in the World (Martínez, 1998).

Environmental needs and conditions for the growth of oyster mushrooms

The oyster mushroom grows in the center of the lignin, cellulose, barley, wheat, and rice cultivated in some bush, for example, reeds and papyrus (Al-Badrani, 2010). Oyster mushroom needs environmental requirements for growth and production represented by providing a temperature between 30-25°C and relative humidity ranging from 90-80% and intensity of illumination ranging from 900-400 Lux by providing a number of hours of lighting ranging from 8-6 Hour. Today, with suitable ventilation ranging from 5-4 hours. Today (Przybylowicz and Donoghue, 1990 and Marino *et al.*, 2003) and its development is characterized by simple and low cost production technology and its cultivation does not require a special agricultural medium as well as the speed of its growth and the short period of time required to prepare the agricultural medium and its average production is 1000 kg of fresh fruit bodies. Tonnes of agricultural medium in a 30-day period (Rajarathnam and Bano, 1988).

The nutritional importance of oyster mushrooms

Oyster mushrooms are distinguished by the taste, smell acceptable, and the possibility of preserving them in several ways, the most important of which are drying, canning, and freezing (Mandeel and others 2005).

The fruit bodies of the fungus have the advantage of containing the basic components of a balanced diet, because their nutritional value is due to containing 20-40% protein of dry weight (Kurtzman, 2005; Ahmed *et al.*, 2009) thus have a superiority over most vegetables

and fruits. Oyster mushroom proteins are rich in essential and non-essential amino acids as they transform the fungi proteins into 17-18 aminoacids (Wang *et al.*, 2000).

Label and classification of the fungus *Aspergillus*

Kingdom: Fungi

Domain: Eukarya

Phylum: Ascomycota

Class: Ascomycetes

Order: Eurotiales

Genus: *Aspergillus*

Species: *A.niger*, *A.flavus*, *A.terreus*

It is a filamentous fungus belonging to the class of cystic fungi Ascomycetes, which are characterized by the formation of Asci cysts, within which sexual reproduction occurs, which includes the stages of nuclear fusion and meiosis, resulting in cystic blackboards Ascospores, while asexual reproduction is carried out by the Conidia blackboards (Geo *et al.*, 2007).

The naming of mushrooms as *Aspergillus* is the oldest name given to a fungi genus as Micheli (1729) described the microscopic structure of blackboard holders in the mushroom as it found it similar to a device that the Catholic cleric in Rome used to pump water was called Asperges and hence the name of the fungus came, then published by researchers Thom and Church (1926) The first study on the fungus in the year 1926, after that, studies continued and the fungus *Aspergillus* became one of the most studied fungi known as one of the most important fungi groups.

Aspergillus mushroom is one of the many fungi found in nature and it has been diagnosed to different types through differential media circles, where it recorded about (205) subordinate species that include (153) types of fungi throwing found in the different types of environmental systems, *i.e.* Equivalent to 75% and (52) types by 25% medical nurse (Buzina, 2012).

Aspergillus mushrooms grow in a moldy form and are frequently found in soil and water and on decomposing or decomposing vegetables. The mushrooms produce abundant Kennedy blackboards that spread easily through the air to the surrounding areas, so animals and plants are always exposed to the fungus boards (Buzina, 2012).

The environmental conditions are usually suitable for the growth of most fungal species, including *Aspergillus* spp. And the two types *A.flavus* and *A. fumigatus* are among the most pathogenic to humans and a large number of animals and the risk of infection increases in people suffering from immune diseases. The term fungus is

termed Aspergillosis and its condition is considered a serious disease, and the prevalence of this condition is a major problem in hospitals The increased incidence of immunosuppression resulting from the treatment of immune diseases or organ transplants and the administration of immunosuppressive drugs Wang (2012).

Fungal *Aspergillus niger*

This type of *Aspergillus* species is the most common species and causes what is known as black mold. When it grows on vegetables and fruits, the fungus is characterized by its super fast growth rate and tolerance to a wide range of pH value of the medium in which the PH tolerance lives. It is one of the most influential fungi types that damage products. Economic Crops (Perfect *et al.*, 2009).

It is one of the most common fungi species that cause food contamination. It is abundant in the soil and all ecosystems. It has the ability to grow on various nutrients. It is abundant in the form of throwing on the leaves of plant leaves, damaged stored grains, piles of compost, damaged and decomposing vegetables and fruits. The mushrooms are spread in a free form in the soil. Or associated with organic matter, as it has been isolated from multiple environments (Sharma, 2012).

This type also constitutes an important and dangerous factor for fungal infections and opportunism for people when inhaled or blackboards in sufficient quantities to contract the disease, which can cause lung problems and serious injuries causing Aspergillosis, as it causes various diseases for a large number of agricultural crops, and thus it constitutes a risk to the economy and losses. It is fatal in production, in addition to the secretion of mycotoxins that constitute a significant and important factor in fungal infections such as Ochratoxin A, Fumonisin B2 and Aflatoxin (Schuster *et al.*, 2002; Al-Abdalall, 2009). They also constitute a commercial risk factor kidney disease, liver, nervous system and muscular, skin, gastrointestinal tract, genital organs and breathing (Rai and Mehrotra, 2005; Truckesses and Scott, 2008).

Fungus *Aspergillus niger* settles the soil and, with the help of a large group of its external enzymes (oxidized and dissolved), it breaks down cellulose and lactin in the residues of the bodies of decomposing plants. In food, in addition to what was mentioned, it has an important effect on the cycle of carbon in nature (Baker, 2006).

Colonies and micromorphology

Colonies grow after about (3-4) days, which consists of a white to yellow capillary structure covered in a thick layer of Kennedy heads that range in color from dark brown to black, the large size Kennedy head has a

diameter of about (15-20) μ m, spherical in shape Dark brown color, with its growth, it becomes radial arrangement and it tends to be divided into a few sparse columns, and it is a bi-chain composed of cells generating conidia, carried on the cells of the middle layer, brown metula and usually divided, Conidiophores carriers with smooth smooth walls, taking color with the blacks as we get closer to the composition of the sac, Conidia blackboards p If it is spherical or hemispherical, the diameter ranges between (3.5–5) Micrometer in dark brown color with rough walls (Sharma, 2012).

Fungal *Aspergillus flavus*

This type was described by Link in 1908 (Gam *et al.*, 1985) and it is considered one of the fungi that are widespread in the world and its presence is mainly found in tropical and semi-tropical areas, as the fluctuations in the Tropics and subtropics and its humidity significantly affect its growth (Gibson *et al.*, 1994).

Xerophilic is a desert fungus(which is a fungus that has the ability to grow at a water efficiency of 0.85 or less). The water efficacy degree required for it ranges from (0.87-0.80), unlike most Fungi *A. flavus* prefers growing in a dry hot climate and the optimum temperature for growth is 37°C. However, the growth of the fungus can be observed with temperatures ranging between (12-48)°C. Because of its important effect on the production of toxins, as for the spread of mushrooms in the soil, it is widespread regardless of the pH or depth, as this type of soil was isolated from a depth of up to (45)cm (Wang, 2012).

Colonies and micromorphology

The diameter of the fungal colonies reaches between (3-7) cm in diameter within 10 days at a temperature of (24-26)°C on the medium of the zapic and (6-7) cm on the middle of the barley extract. To my lumbar and sometimes my beloved. Produces a Sclerotia structure that is dark brown in color. The Cape heads are usually radial arrangement, divided into a few sparse columns with a length of (300-400) μ m. Conidiophore carriers are transparent, rough ends, usually less than (1) mm in length and may reach length in the remaining colonies for a period of time. Long in the laboratory to 2 or 2.5 mm.

The structure of the follicle is elongated at the beginning of maturity and with continued maturity it turns into a spherical or spherical shape that varies in diameter and is often between (25-45) micrometers. The cells that are born to konadis are either single or linked to the cells of the central region and their shape is at the beginning of their formation. Elliptical or elliptical, the smooth and spherical conidian boards are soft, spherical or

hemispherical, with a diameter of (3-6) micrometer (Wang, 2012).

The mushroom reproduces in two sexual and asexual ways. The Ascocarp mushroom, which contains the sachel containers, each contains (8) Ascospores, which grow within the stromata structure (Haron *et al.*, 2009).

Fungal *Aspergillus terreus*

Is one of the fungi widespread in nature and known globally, isolated from the soil, plant remains and can be isolated from the surrounding air, and is one of the least isolated fungi like opportunistic pathogenic fungi, and is a thermophilic fungus, meaning it is thermophilic and can grow at body temperature Or much higher, as the xerophilic desert grows and grows even if the air humidity reaches 60%, it draws moisture from the air (Park *et al.*, 2000).

The colonies on the center of the Zapak are lush surface, similar to skin and orange to sand brown, while the lower side of them is yellow to micrometer dark brown 50-30 Conidian heads are compact, diameter and they are two-row Biseriate. Conidian carriers are transparent with smooth walls, at the top of which are rounded black oval boards that range from (1.5-2.5) micrometer in diameter, transparent to pale yellow with smooth walls, the middle metula layer. Existing and extended with koned cells-generating extension (Ellis *et al.*, 2007).

Materials and Methods

This study included conducting laboratory experiments

Laboratory experiments

A pure isolation was obtained from the shellfish of the oyster mushroom (*Pleurotus ostreatus*) by Prof. Majid Miteb Diwan, Laboratory of Fungi in the Department of Plant Protection - College of Agriculture, University of Kufa and diagnosed according to the classification key (Singer, 1986). As for the rest of the fungi it was obtained It was obtained from the Laboratory of Primary Microbiology, obtained and classified.

Amid the growth used in the study

In the study, one culture medium was used to isolate, develop and diagnose fungi for the purpose of conducting experiments, as follows.

Amid Potato and Dextrose Agar (P.D.A.) Patato Dextrose Agar

Prepare by thawing (39) grams per liter of distilled water according to the instructions of the producing company, then add an antibiotic (Amoxicillin), then put it in glass utensils, and then put in the sterilizer (Autoclave)

for a period of (45) minutes, use this medium to isolate, grow and diagnose the fungi to perform Different experiences.

Collection and preparation of plants: Collection and preparation of plant

Collected *Lantana camara* leaves were from the Najaf, College of Education College for Girls, University of Kufa in November 2019, then washed thoroughly under running water to get rid of dirt and impurities and dried in room temperature and then crushed the leaves It is dried in powdered form and stored in glass bottles until used for experiments.

Preparation of aqueous extract

(Ahmed *et al.*, 1998) method was used in preparing water extracts by mixing 20 gm of plant powder per plant sample with 400 ml of distilled water in a volumetric flask with a capacity of 1000 ml, then the stick was left in a vibrating water bath at a temperature of 40°C for 24 hours then The stick was filtered using several layers of medical gauze and then sterilized during the 0.22µm milipore filter. The clear liquid was kept in sealed containers in the refrigerator at 4°C until use (Khanzada, *et al.*, 2006).

Preparation of Alcoholic extract

Weigh (2) grams of powder of the leaf of the enamel plant and add (50) ml of ethyl alcohol at a concentration of (95%), then mix the mixture for one hour with the rotary mixer (Votex), then leave it for (24) hours at room temperature, then pull The upper layer containing the alcoholic extract, then repeat the process on the remaining precipitate, collect the leachate, add a mechanism (50) ml of ethyl alcohol and shake the extract for an hour for crushing, then filter the solution with the filter paper (Whatman No.1) and then show the filter to vaporize in a vacuum using a device Rotary vaporization at a temperature of (45°C) and then the weight of the remaining dry matter (Ahmed *et al.*, 1998) and **Table 1:** Effect of hot water extract of *Lantana camara* leaf on the growth rate of *A.niger*, *A.flavus*, *A.terreus*, and *P. Ostreatus* during 72 hours.

diameter growth rate / cm	Name of fungus
3.66	<i>Aspergillus niger</i>
9.00	Control
3.00	<i>Aspergillus flavus</i>
9.00	Control
1.33	<i>Pleurotus ostreatus</i>
7.16	Control
2.12	<i>Aspergillus terreus</i>
9.00	Control
3.3	L.S.D. 0.05

(Khanzada, *et al.*, 2006).

Results and Discussion

Effect of hot water extract of *Lantana camara* leaf extract on the growth rate of *A.niger*, *A.flavus*, *A.terreus* and *P. Ostreatus* oyster within 72 hours

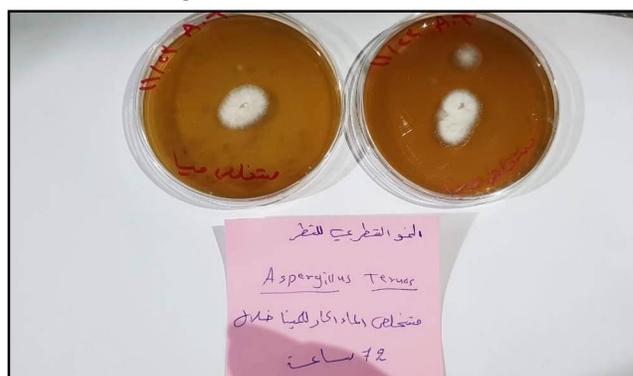
The results indicate table 1 that the hot aqueous extract of the leaves of the plant *Lantana camara* recorded the lowest diameter growth rate of *P. ostreatus*



Picture 1: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus niger* in 72 hours.



Picture 2: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus flavus* during 72 hours.



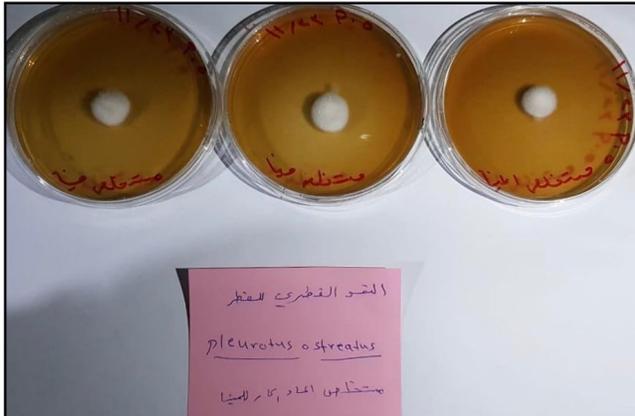
Picture 3: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus terreus* in 72 hours.

was 1.33 cm compared to the control treatment, which gave a diameter growth rate of 7.16cm. Also, the hot water extract of the *Lantana camara* plant leaves recorded the lowest rate of country growth of the fungus *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus terreus*, *pleurotus ostreatus* were (3.66, 3.00, 2.12, 1.33) cm respectively, compared to the control treatment that gave (9, 9, 9 and 7.16) cm respectively. These results

verify what (Bais *et al.*, 2006) indicate. That the temperature greatly affects the hormones and enzymes in the fungus, as most enzymes work at their maximum D temperature range of 37-40°C.

Effect of hot water extract of *Lantana camara* leaf extract on the rate of diameter growth of *A. niger*, *A. flavus*, *A.tereus* and *P. oystreatus* during 144 hours

The results also showed a table 2 significant differences in the hot water extract of the leaves of the *Lantana camara* plant. The lowest diamete growth rate



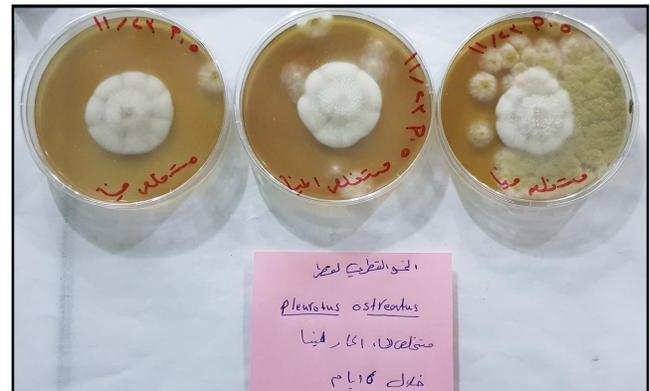
Picture 4: Effect of hot aqueous extract of *Lantana camara* leaf on the diameter growth rate of *Pleurotus ostreatus* during 72 hours.



Picture 7: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus terreus* in 144 hours.



Picture 5: The effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus niger* in 144 hours.



Picture 8: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of the country mushroom *Pleurotus ostreatus* during 144 hours.



Picture 6: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *Aspergillus flavus* during 144 hours.



Picture 9: Effect of Alcoholic extract of *Lantana camara* Leaf on the diameter Growth Rate of *Aspergillus niger* during 72 hours.

for *P. ostreatus* was 3.57 cm within 144 hours compared to the control treatment, which gave a diameter growth rate of 9 cm. The hot water extract of the *Lantana camara* plant leaves recorded less The rate of diameter growth for fungi *Aspergillus niger*, *Aspergillus terreus*, *Aspergillus flavus* was (7.56, 5.73 and 4.83) cm respectively, compared with the control treatment, which gave 9 cm. As it was the highest isolated species, with a growth rate of 7.56 cm, as well as the results According to what (Bais *et al.*, 2006) indicated, temperatures significantly affect the hormones and enzymes in mushrooms, as most enzymes operate at their maximum capacity at a temperature between 37-40 degrees Celsius.

The effect of alcoholic extract of *Lantana camara* leaf on the diameter growth rate of fungal *A. niger*, *A. flavus*, *A. terreus* and *P. ostreatus* within 72 hours.

The results of table 3 showed a high significant difference for the leaf extract of the alcoholic *Lantana camara* plant on the rate of the diameter growth of the oyster mushroom *P. ostreatus*, it reached 1.25 cm compared to the control treatment that gave 7.16 cm. *A. niger*, *A. flavus* and *A. terreus* within 72 hours were (2.54, 2.16, 1.85) cm respectively, compared to the control treatment, which gave 9 cm. The prevalence of the fungus

Table 2: Effect of hot water extract of *Lantana camara* leaf on the diameter growth rate of *A. niger*, *A. flavus*, *A. terreus* and *P. ostreatus* during 144 hours.

diameter growth rate / cm	Name of fungus
7.56	<i>Aspergillus niger</i>
9.00	Control
5.73	<i>Aspergillus flavus</i>
9.00	Control
3.57	<i>Pleurotus ostreatus</i>
9.00	Control
4.83	<i>Aspergillus terreus</i>
9.00	Control
2.9	L.S.D. 0.05



Picture 10: Effect of Alcoholic extract of *Lantana camara* Leaf on the diameter Growth Rate of *Aspergillus flavus* during 72 hours.

Table 3: Effect of Alcoholic Extract of *Lantana camara* leaf on the diameter growth rate of fungal *A. niger*, *A. flavus*, *A. terreus* and *P. ostreatus* during 72 hours.

diameter growth rate / cm	Name of fungus
2.54	<i>Aspergillus niger</i>
9.00	Control
2.16	<i>Aspergillus flavus</i>
9.00	Control
1.25	<i>Pleurotus ostreatus</i>
7.16	Control
1.85	<i>Aspergillus terreus</i>
9.00	Control
4.1	L.S.D. 0.05



Picture 11: Effect of Alcoholic extract of *Lantana camara* Leaf on the diameter Growth Rate of *Aspergillus terreus* during 72 hours.

Table 4: Effect of Alcoholic Extract *Lantana camara* Leaf on the diameter Growth Rate of fungal *A. Niger*, *A. Flavus*, *A. Terreus* and *P. ostreatus* during the 144 hours.

diameter growth rate / cm	Name of fungus
4.87	<i>Aspergillus niger</i>
9.00	Control
4.37	<i>Aspergillus flavus</i>
9.00	Control
3.12	<i>Pleurotus ostreatus</i>
9.00	Control
3.68	<i>Aspergillus terreus</i>
9.00	Control
2.7	L.S.D. 0.05



Picture 12: Effect of Alcoholic extract of *Lantana camara* Leaf on the diameter Growth Rate of *Pleurotus ostreatus* during 72 hours.

Aspergillus is mentioned in most studies of researchers and researchers for the pathological condition of otomycosis, including Bezjak (1970) who showed the dominance of the species *Aspergillus niger* and this also is consistent with the findings of our study.

Effect of Alcoholic Extract *Lantana camara* Leaf on the diameter Growth Rate of fungal *A. Niger*, *A. Flavus*, *A. Terreus* and *P. ostreatus* during the 144 hours

The results of table 4 also showed a high significant differences for the leaf extract of the alcoholic *Lantana camara* plant on the rate of diameter growth of the oyster mushroom *P. ostreatus*, during 144 hours it reached 3.12 cm compared to the control treatment that gave 9 cm. Also, the alcoholic extract of the leaves of the *Lantana camara* plant showed a significant difference. The diameter growth rate of *A. niger*, *A. flavus* and *A. terreus* during 144 hours was (4.87, 4.37, 3.68) cm respectively, compared with the control treatment, which gave 9 cm

These results agree with Hassan (2015) that the oyster mushroom scored the highest significant difference in inhibition and inhibition of the fungi under study. The above-mentioned results also showed that the leaves of the *Lantana camara* plant.

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