

Study of Fungal Contamination of Some Medicinal Plants and Food Covered For Mosul

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Received: 2024, 15, Dec

Accepted: 2024, 21, Dec

Published: 2025, 16, Jan

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Annotation: The most isolated fungi from juices, meat, pears, rice, legumes, medicinal plants, spaghetti, pasta, and dromedary, pistachios, currants and almonds collected from local markets in Mosul were the most isolated fungi from juices: yeasts and *Penicillium* spp fungus (25%) in both Saudi Captain juice and Jordan's Rowan. In Moroccan tank juices, *Penicillium* sp fungus were isolated by 12.5%, *penicillium roqueforti* fungus were isolated from Turkish Levance juice by 12.5%, while Yemeni-made quality juice, Kuwaiti Dalia juice and Jordanian Zaki juice were isolated. No type of fungus was isolated from it and the fungus was isolated from some types of frozen red and white meat and the results showed that both yeasts and *Penicillium* sp. fungus are the most isolated fungi, they were isolated by 33.33% of Turkish chicken meat, *Penicillium* spp fungus were isolated from fish meat by 16.66 percent, *cladosporium* spp fungi were isolated by 16.66 percent of roast meat, while the rest of the meat (Saudi kebabs, sausages and hamburger) were not isolated from them., while *Aspergillus* spp fungus were

isolated by (33) 33% of the spaghetti is Turkish-made, but pasta has not isolated any type of fungi, and from the isolation of fungi from pistachios, currants and almonds, the results showed that the highest isolation rate was for both yeasts and *A.fan*, which amounted to (50%) in pistachios. Internal and currants, The isolation of fungi from rice and some legumes has shown the results to be the highest insulation rate for both *A.niger* fungi, *Penicillium* sp. *Fusarium* sp., *Bacillus* sp. reached (100%) of rice, chickpeas *Rhizopus* spp, *Fusarium* spp. and *A.niger* were isolated by (75%), *Rhizopus* sp mushrooms were isolated from lentils by (25%), beans were isolated from yeasts, *advan* and *A.niger* mushrooms by (75%), Fungi have been isolated from some types of medicinal plants all showed different types of isolated fungi, where both *rhizopus* sp mushrooms and *Penicillium* sp. *A.niger* has the highest isolation rate (18.75%) in corn, thyme and mirmian sycathing, fungi have been isolated by (12.5%) in other plants. In chamomile *A.niger* and *Gliocladium* spp were isolated. In the pond grain, *Mucor* spp and *A.niger* mushrooms were isolated and *A.niger* sheep were isolated from saffron, and isolated Yeasts and coriander abscesses *Rhizopus* spp and *Fusarium* spp were isolated from tea, while the lowest isolation rate was (5.88%) where *Rhizopus* spp fungi were isolated from the ring. *Mucor* spp were isolated from the strong and mountain mint, while in the Marmki plant, *penicillium* spp fungi were isolated.

Keywords: *Penicillium* spp, *cladosporium* spp, *Aspergillus* spp.

Introduction: The problem of food is primarily an economic problem, because it reflects a form of relationship between supply and demand, or between production and consumption, and the arrival of microbiology and fungi make food contaminated with the toxins and parts of those microbiological organisms, and that fungi are tired of complementary organisms that pollute food and cause many human health problems,(17)including the sex *Rhizopus* species, Fungi contaminate food and attack it with a fever as it is fresh or canned stocked, it is generally opportunistic to the changes associated with storage conditions and food production (6) and some fungi may produce toxins that are very dangerous to the consumer Among them is the *Aspergillus flavus* (2);(16) that fungi require special conditions in order to wish and cause damage to food circles and environment from the chemical composition of food, acid hydrogenic acid, appropriate heat and humidity (19) Fungi spores are present in different environments on different vegetables, fruits and surfaces and often cause a change in the environments in which they are present when the appropriate conditions of heat and humidity are suitable for their growth and their impact on food and agricultural products shows a change in color, shape and taste, making it unfit for human consumption. (10)

The research highlights the isolation of fungi from some imported food entering Mosul from earlier periods

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Materials and Methods materials and methods

1. Isolation and diagnosis of fungi isolate and diagnose fungi from juices :In the case of liquid juice, 1 cm³ of it is taken and added to 9 cm³ of distilled water in a glass bottle to get relief 10-1 and continue to dry up to 10-4.1 cm³ is taken From dilutions 10-3 and 10-4 to petri dishes and p.D.A. environment casting, incubating dishes at 25 om temperature for 7 days and observing the growth of yeasts and molds. In the case of dried (7)
2. Isolating and diagnosing fungi from red, white and fish meat:Weigh 1 g of meat or fish sample. Place the weighted sample in an electric mixer and add 9 cm³ of distilled water and then mix for 5 minutes to get suspended with a dilution of 10-1 and be afraid using a sterile absorbent by transferring 1 cm³ of suspension to a glass tube containing 9 cm³ of distilled water sterilized to get relief 10-2 and continue to scare until dilution 10-3.

Detection of the presence of yeasts and chastity: By transferring 1cm³ of dilutions 10-2 and 10-3 to petri dishes and pouring the P.D.A environment and incubating the dishes at a temperature of 25 OM for 7 days and observing the growth of yeasts and molds.(4)

3. Isolating and diagnosing fungi from rice and some legumes: Rice and some legumes (chickpeas, beans, lentils) were taken and planted on the center of P.D.A. and incubated at 25 OM temperature for 7 days and observed the growth of yeasts and molds.
4. Isolation and diagnosis of fungi from medicinal herbs and tea: Samples of some types of medicinal herbs found in the local market have been sampled and planted on the center of P.D.A. and incubated at 25 OM temperature for 7 days and observed the growth of yeasts and molds. (8)

Results & Discussions Results and Discussion

Table1.: Isolating fungi from some types of juices under 27°C in the center of P.D.A. for a week.

	Name p.	source	Growth	Fungi	percentage%
1	Joda	Yemen	-	No.	0.00
2	Jossy	Lebanon	+	<i>Yeast</i>	12.5

3	Dalia	Kuwait	-	No.	0.00
4	rawan	Jordan	+	<i>Penicillium sp</i> Yeast	25
5	Zaki	Jordan	-	No.	0.00
6	Captain	KSA	+	<i>Penicillium sp</i> Yeast	25
7	Tank	Morocco	+	<i>Penicillium sp.</i>	12.5
8	levance	Turkey	+	<i>Penicillium roqueforti</i>	12.5

• (+) refers to the emergence of fungus growth.

• (-) refers es that there is no growth of fungi.

Table 2: Isolate fungi from some types of red and white meat frozen under 27 o m temperature and in the center of P.D.A. for a week

	Product name	source	Growth	Fungi	percentage%
1	chicken	turkey	+	<i>Penicillium sp.</i> Yeast	33.33
2	fish	vitnam	+	<i>Penicillium sp.</i>	16.66
3	Meat Kebab	KSA	-	No.	0.00
4	roast beef	india	+	<i>Cladosporium sp.</i>	16.66
5	sausage	Brazil	-	No.	0.00
6	hamburger	Brazil	-	No.	0.00

• (+) refers to the emergence of fungus growth.

• (-) refers es that there is no growth of fungi.

Table 3: Isolate fungi from medicinal plants under 27° and in P.D.A. for week

s	Sample name	source	Growth	fungus	Percentage %
1	chamomile	Local market	+	<i>A.niger</i> <i>spp Gliocladium</i>	12.5
2	Pond	Local market	+	<i>.Micuor sp</i> <i>.A.niger sp</i>	12.5
3	Fenugreek Herb	Local market	+	<i>. spp Rhizopus</i>	6.25
4	douaa al-fum	Local market	+	<i>. spp Rhizopus</i>	6.25
5	Saffron	Local market	+	<i>. spp A.niger</i> Moulds	12.5
6	thyme	Local market	+	<i>. Rhizopus spp</i> <i>. spp Penicillium</i> <i>A. niger</i>	18.75
7	Saqui	Local market	+	<i>. spp Mucor</i>	6.25
8	corn stalk	Local market	+	<i>spp Rhizopus</i> <i>. spp Penicillium</i> <i>. spp A.niger</i>	18.75
9	coriander	Local market	+	Yeast Moulds	12.5
10	Marmaki	Local market	+	<i>. Penicillium spp</i>	6.25
11	marjoram	Local market	+	<i>. spp Rhizopus</i>	6.25
12	Sage	Local market	+	<i>. spp Rhizopus</i> <i>. spp Penicillium</i> <i>.A.niger sp</i>	18.75
13	Mountain mint	Local market	+	<i>.spp Mucor</i>	6.25

14	Bay leaf	Local market	+	. spp <i>Rhizopus</i>	6.25
15	anise	Local market	+	. spp <i>Rhizopus</i>	6.25
16	TEA	IRAN	+	. spp <i>Rhizopus</i> . <i>Fusarium spp</i>	12.5

Table 4. Isolating fungi from some types of potato chips and the corn. under 27°C and in the P.D.A. for a week

	Sample name	source	Growth	fungus	ercentage %
1	pistachio A. External	Local market	+	. spp <i>Rhizopus</i>	25
	B. Internal	Local market	+	<i>Moulds</i> <i>Yeast</i>	50
2	currants	Local market	+	<i>Moulds</i> <i>Yeast</i>	50
3	almond	Local market	+	. <i>Rhizopus spp</i>	25

- (+)refers to the emergence of fungus growth.
- (-) refers es that there is no growth of fungi.
- Percentage = fungal species of the sample / total samples * 100%

1. Isolating fungi from some types of juices under 27°C in the center of P.D.A. for a week.

From the study of fungus isolation of some types of juices as in table no. (3-1) under the temperature of 27 o m and for a week and on the center of P.D.A. the results showed that both yeasts and *penicillium sp* mushrooms are the most isolated fungi isolated With 25% of the juice of The Saudi Captain and Rowan Al-Jordan, the Lebanese-made juice of José isolated yeasts by (12.5%), and in Moroccan tank juices *penicillium sp* Fungus were isolated by (12.5%), and isolated *Penicillium roqueforti* Fungus from Turkish Levance juice (12.5%) but yemeni-made quality juice, Kuwaiti Dalia juice and Jordanian Zaki juice did not isolate any type of fungus

2. Isolating fungi from some types of red and white meat frozen under 27°C and in the P.D.A. for a week

From the study of fungus isolation of some types of frozen red and white meat as in table no. (3-2) under the temperature of 27°C and for a week and on the center of P.D.A. the results showed that both yeasts and *Penicillium spp* Fungus are the most isolated fungi lost by (33.33%) of Turkish chicken meat, *Penicillium sp* mushrooms were isolated from fish meat by (16.66%), *cladosporium spp* Fungus were isolated by 16.66% of roast meat and the rest Types of meat (Saudi kebabs, sausages and humberkers) has not isolated any type of fungus

3. Isolating fungi from some some types of medicinal plants under under 27°C and in the P.D.A. for a week

From the study of fungus isolation of some types of medicinal plants as in table no. (3-7) under a temperature celsius and for a week and on the center of P.D.A. all plants showed different types of isolated fungi, where both *rhizopus sp* fungus and *Penicillium sp*. *A.niger* has the highest isolation rate (18.75%) in corn, thyme and mirmian syntacs, and fungi have been isolated by (12.5%) in other plants. The pond pill was isolated fungi *Mucor spp* and *A.niger* and *A.niger* were isolated from saffron, yeasts and advan were isolated from coriander and *Rhizopus sp* and *Fusarium spp* were isolated from tea, but the lowest isolation rate was (5.88%) Where *Rhizopus spp* are isolated from, , marjoram plant, bay leaf, anise and *mucor spp* fungi have been isolated from the socoy and mountain mint but in the marmki plant has isolated the fungi *Penicillium spp*.(1)

3. Isolating fungi from pistachios, currants and almonds under 27°C and in the P.D.A. for a week

From the study of the isolation of fungi from pistachios, currants and almonds as in table no. (3-4) under the temperature of 27°C and for a week and on the center of P.D.A. where the highest isolation rate was for both yeasts and oats, which amounted to (50%) in internal pistachios and currants, *Rhizopus spp* fungi. While in a previous study it was found that the most isolated fungi are *Aspergillus spp*, *Penicillium spp* and *Fusarium spp*.

4. Isolating fungi from some types of potato chips and the corn. under 27°C and in the P.D.A. for a week

From the study of the isolation of fungi from some types of cheeses as in table 4 under the temperature of 27°C and for a week and on the center of P.D.A. where both yeasts and *Rhizopus spp* fungi and *Penicillium spp* fungus showed the highest isolation rate of Iraqi-made saad gypsum (33.33%), while the Jordanian MOM type of (potato chips) did not isolate any fungus, and *Aspergillus spp* fungus. *Cladosporium sp.* (22.22%) of local potato chips, either In Syrian popcorn, Turkish CERZOS and Syrian luxe, yeasts were isolated by 11.11%, and potato chips were isolated from iraqi fella, both yeasts and *A.niger* fungi (22.22%), while potato chips (potato chips) were isolated. Crenchito, a Syrian fungus, was isolated by 11.11%, isolated from potato chips (mzmz) by Iranian *Cladosporium spp* fungus and *Penicillium spp* fungus (22.22%).

In 1980, a study of 100 samples of sausages and pork found candida parapsilosis yeast, A study in Egypt on the (20), tropicalis. which may cause health problems in humans and a study of fungi from kufta and sausages showed that the most visible fungus was hespercles flafs after studying 218, (21) (2017, at, al, Yaradua, S. S) and, (11) and was more in sausages than in kefta, samples of tomatoes, chicken meat, falafel, bread, eggplant and celery, showed six (*Brettanomyces*, *Saccharomyces spp*, *Rhizopus spp*, *Alternaria spp*, *Aspergillus spp* Sater, M. A. et al, 2017) (3) observed 30 samples of beef that isolated sixty-seven species from 20 species Examples: *Aspergillus*, *Mucor sp*, *Penicillium* and *Trechoderma* The fungi were the most common, and in low grades yeasts appeared and the study advised cooling meat immediately after slaughter and during transport and storage to prevent the growth of these fungi and yeasts, Another study of vegetables, cucumbers and peppers showed that the most emerging fungi were: *Aspergillus flavus*, *Rhizopus stolonifer*, *Aspergillus niger*, *Aspergillus parasiticus*, *Penicillium digitatum*, *Penicillium citrinum* and *Mucor spp*, *Penicillium citrinum*, *Aspergillus niger*, and *Aspergillus parasiticus*. (=), A study in South Africa showed that the percentage of fungi isolated from corn was 82% for *Fusarium spp*, 63% for *Penicillium spp* and 33% for *Aspergillus spp*. (7), In a study in Qatar, a study of some foods showed that they are contaminated with fungal fungi. In Saudi Arabia, several studies have shown that canned meat products may be contaminated with fungi. Elements, bacteria and even heavy metals that may occur during transportation, storage and processing. Among the samples Her study of the most frequently visible fungi is the appearance of *Aspergillus Sp.* - *Penicillium Sp.* (16), The refrigerator used for preservation may be a source of food contamination with fungi and fungi have been isolated, which have shown 100% of refrigerator samples to be innately contaminated with mushrooms. *Cladosporium spp.* (42.34%) *Mucor sp.* (6%) was in food (15). In Indonesia, fungi were isolated, which were the most common fungi in spice samples from the local market, He studied the presence of fungi in both citrus and bananas, and the most present fungi were: *Cladosporium spp* (40%), *Fusarium spp* (30%), *Alternaria spp* (20%) and *Chrysonilia spp* (10%) while the most predominant fungi isolated from banana was *Fusarium spp* (50%), *Mucor spp* (30%) and *Rhizopus spp* (20%). (13)

Conclusions: The isolation of fungi from food is evidence of food contamination of these fungi, some of which may be the product of toxins on human health, and the supply and storage of food, especially spices, may be the main reason for providing the right conditions for contamination of moisture and heat

Recommendations: Food manufacturing conditions should be more concerned in terms of sterilization, as well as healthy food storage and food supply should also be ideally to prevent fungal contamination.

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