

(2004/8/16 2004/5/11)

(135)

% 8.69	<i>Pencillium spp</i>	<i>Aspergillus niger</i>	.	
	% 82.08	%2.5		% 60.9
	% 8.96	<i>Cladosporium spp</i>	.	
<i>Rhodotorula spp</i>	<i>Candida albicans</i>	.		
	% 1.42	% 98.58		%0.22 % 98.78
	% 1.0	<i>Geotrichium candidum</i>		

Screening Local Milk Products for Fungi

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ABSTRACT

Mycological investigation of (135) samples of milk products collected from various stores in Mosul city. Results revealed that *Aspergillus niger* and *Pencillium spp* were found in 8.69%, 60.9% of home-made milk products, while they were observed in 2.5%, 82.08% in canned milk products respectively. Also 8.96% of canned milk product samples had *Cladosporium spp*, while other fungi were less common. The yeasts *candida albicans* and *Rhodotrula spp* occurred in 98.78%, 0.22% of home-made products, while they were found at 98.58% and 1.42% in canned-milk products, respectively.

Geotrichium candidum was found in 1.0% of home-made dairy products. The results showed that the isolated fungi have the ability of hydrolysing milk lipids due to the production of lipase.

(Hocking, 1994)

(Brugere, 1999)

(Serraino et al., 2000)

(Moubasher, 1993)

(135) : -1

(15) 2004 2003

(15) ()

.()

10 (Shimada and Ichinoe,1998) : -2

(1) (% 0.1) 90

(7) (Dichloran rose bengal agar)

(25)

.(Hoog and Guarro, 1995)

10 Tween 80 :Lipase -3

20 0.1 8

.....

.(King et al., 1986) 25

3

(2790) (9440) (7710) (8980) (460)

(3) (5) (4920)

(2) (9)

% 60.9 % 82.08 *Penicillium*

Fusarium %8.69 *Aspergillus*

.(1) %8.69 *Pythium* %10.86 *Mucor* %10.86

Alternaria

Rhizopus %8.96 *Cladosporium* %2.5 *Aspergillus* %0.72 *Aureobasidium* %2.15

.(3) %0.36 *Trichophyton* %1.08 *Trichothecium* %2.15

%98.78 *Candidia albicans*

. %98.58

%0.22 *Rhodotorula spp* %1.0 *Geotrichium Candidum*

.(4) %1.42 *Rhodotorula spp* (2)

%19.57

(1) %36.96 %10.86 %32.61

.(2) %33.4 %22.83 %20.05 %23.72

%3.94

%14.23 (3) %84.58 %5.74 %5.74

.(4) %42.07 %3.05 %40.65

: 1

	*					
+++	40 8.69	40 23.53	—	—	—	<i>Aspergillus niger</i>
-	50 10.86	—	—	—	50 ***55.55	<i>Fusarium SPP</i>
+++	50 10.86	—	50 100	—	—	<i>Mucor SPP</i>
+	280 60.9	130 76.47	—	150 100	—	<i>Penicillium SPP</i>
-	40 8.69	—	—	—	40 44.45	<i>Pythium SPP</i>
	460	170	50	150	90	/
		36.96	10.86	32.61	19.57	** %

() - *

(3-1) + **

(11-8) + + + ***

:2

	*					
-	8870 98.78	3000 100	2000 97.56	180 100	2070 ***97.18	<i>Candidia albicans</i>
#	90 1.0	—	30 1.46	—	60 2.82	<i>Geotrichium candidum</i>
+	20 0.22	—	20 0.98	—	—	<i>Rhodotorula spp</i>
	8980	3000	2050	1800	2130	/
		33.4	22.83	20.05	23.72	** %

() - *

(3-1) + **

:3

	*						
++	60 2.15	40 1.7	20 12.5	—	—	—	<i>Alternaria alternata</i>
+	20 0.72	—	20 12.5	—	—	—	<i>Aureobasidium pullulans</i>
+++	70 2.5	—	—	70 43.75	—	—	<i>Aspergillus niger</i>
++	220 7.88	140 5.93	30 18.75	50 31.25	—	—	<i>Cladosporium cladosporioies</i>
+	30 1.08	—	30 18.75	—	—	—	<i>Cladosporium sphaerospermum</i>
+	229 82.08	2150 91.1	5 31.25	40 25	—	50 ***45.45	<i>Penicillium spp</i>
#	60 2.15	—	—	—	—	60 54.55	<i>Rhizopus stolonifer</i>
#	30 1.08	30 1.27	—	—	—	—	<i>Trichothecium spp</i>
+	10 0.36	—	10 6.25	—	—	—	<i>Trichophyton spp</i>
	2790	2360	160	160	—	110	/
		84.58	5.74	5.74	—	3.94	** %

(3-1) + *

(7 - 4) ++ **

(11-8) +++ ***

#

:4

	*						
-	4850 98.58	2000 96.62	—	150 100	2000 100	700 ***100	<i>Candidia albicans</i>
+	70 1.42	70 3.38	—	—	—	—	<i>Rhodotorula spp</i>
	4920	2070	—	100	2000	700	/
		42.07	—	3.05	40.65	14.23	* * %

() - *

(3-1) + **

(Yassen, 2002)

(Sabreen and Haleem, 2000)

(pH)

Penicillium

(Haasum and Nielsen, 1998)

(Brugere, 1999)

(Abdel-Sater *et al.*, 1995)

(Shimada and Ichinoe, 1998)

%25

Penicillium

(Shimada and Ichinoe, 1998)

%27

(Hocking and Faedo, 1992)

%28.57

(Hocking, 1994)

Cladosporium

%31.25

% 44

(Hocking and Faedo, 1992)

Aspergillus niger

(1991

)

(Kivance, 1992)

Abdel-Hakiem)

%8.6

%2.5

%13.3-6.7

4

(and El-Kosi, 1999

Rhizopus stolonifer

(El-Prince and Ismail, 1998) %2.5-1.84

%2.15

Fusarium

%3.45

(Lund *et al.*, 1995)

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.(Saad and Hemaida, 1995)

%5.88

.(1)

Mucor

(Foschino et al., 1993)

Saad and Hemaida, 1995; Abdel-Hakiem and) %6.7 3.3

(1)

(El-Kosi, 1999

Alternaria alternata

El-Prince and)

%2.15

%3.80 1.84

(Ismail, 1998

.Mozzarella

Marcellino and)

Trichothecium

.(3)

(Benson, 1992

Trichophyton

(Varman and Evan, 1991)

Ring worm

(Brooks et al., 2001)

Aureobasidium pullulans

(Northolt *et al.*, 1980)

.(3)

Pythium

Purcell *et al.*,)

(Swamp cancer)

.(1)

(1994

Candidia albicans

Citric acid

Lactic acid

Geotrichium candidum

(Fleet and Main, 1987)

(Eisenberg and Cichowicz, 1977)

21 () 6

(Shimada and Ichinoe, 1998)

.(2)

Rhodotorula

(Rohm et al., 1990)

(Rohm et al., 1992)

(Fleet, 1990)

(Fleet and Main, 1987)

.(2,4)

Lipase

(1991)

Lipolytic activity

Pythium *Fusarium*

.(1)

(+ + +)

(+)

.(3) (+ + +) (+ +) (+)

Rhodotorula

Candidia albicans

.(4 2)

(+)

(4 3 2 1)

(4 3 2 1)

18-

(Saad and Hemaida, 1995)

.1991

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