

## Bacterial And Mycotic Causes Of Skin Lesions In Buffalo And Camel

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### ABSTRACT

One hundred and fifty Skin specimens were collected from 75 one-humped camels and 75 buffaloes of different age and different sexes, suffering from skin affections, such as papular, pustular, suppurative, ulcerative dermatitis, ringworm and tick infestation on neck and thigh regions. Samples were obtained from camels and buffaloes in different abattoirs and private farms at El- Menoufiea Governorate, for bacteriological and mycological examination. Out of 75 samples of diseased buffaloes, 53 samples (70.7%) were harbour bacterial and mycotic affections, in which 25 cases showed bacterial infection (47.2%), 28 cases showed mycotic infection (52.8%). While out of 75 samples of examined diseased camel, 44 samples (58.7%) were positive for bacterial and mycotic examination, 26 cases showed bacterial infection (59.1%), 18 cases showed mycotic infection (40.9%).

The bacteriological isolation from skin affections of diseased buffaloes were *Staph. aureus*, *Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli*, *Strept. Pyogenes* and *Pseudomonas aeruginosa* with incidence of 28%, 12%, 20%, 16%, 12%, 8% and 4%, respectively. While the bacteria isolated from skin affections of camel were *Staph. aureus*, *Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli* and *Strept. Pyogenes* with incidence of 19.2%, 7.7%, 23.1%, 30.8%, 7.7% and 11.5%, respectively.

The dermatophytic fungi isolated from skin affections of buffalo was *Trichophyton verrucosum* with incidence of 11.3%. *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Penicillium* spp., *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporum* spp. were also isolated with incidence of 22.7%, 13.6%, 9.1%, 13.6%, 13.6%, 9.1%, 9.1% and 9.1%, respectively. While the dermatophytic fungi isolated from skin affections of camel was *Trichophyton verrucosum* with incidence of 9.1%. *Aspergillus niger*, *Aspergillus fumigatus*, *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporum* spp. were isolated with incidence of 21.4%, 14.3%, 21.4%, 7.1%, 21.4% and 14.3% , respectively.

*Trichophyton verrucosum* is the only cause for ringworm in buffaloes and camels, while *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Penicillium* spp., *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporum* spp. are saprophytic fungi.

*In vitro* sensitivity of the most prevalent bacterial isolates from skin affections of buffaloes and camels to different antimicrobial against, showed a marked difference between the sensitivity to antibiotics between different bacterial isolates. Amoxycillin, cephalothin, ciprofloxacin, erythromycin, tobramycin and trimethoprim & sulphamethoxazole were to be considered the antimicrobial agents of choice for treatment bacterial skin affections.

### INTRODUCTION

Camels and buffaloes have been used in Egypt as agricultural work animals in the farms as well as the main source of both milk and meat necessary to fulfill the gap between

the increased population and their demands from animal protein. Skin diseases in camels and buffaloes causes reduction of body weight, milk yield, decreased skin value in addition to the expensive costs of treatment as well as increasing the risk of transmission to man.

Skin diseases in camels and buffaloes are caused by one or more species of fungi or bacteria or both. Skin disease may produce similar signs and lesions which make the clinical diagnosis often difficult and mostly inaccurate, so supplementing the clinical diagnosis with laboratory findings is highly recommended (1). Thus, isolation and identification of the causative agent is of great value to control the spread of infection (2, 3).

The bacteria were considered one of the most serious infectious agents which cause different types of dermatitis in the skin lesions of camels and buffaloes (4 - 6). Several Gram positive and Gram negative bacteria are associated with suppurative lymphadenitis, abscesses, cutaneous suppurative and non suppurative wound infection (7).

Bacterial skin affections caused by *Streptococci*, *Corynebacterium pseudotuberculosis*, *Staphylococcus* spp. and *Corynebacterium pyogenes* (8,9). *Corynebacterial* infections were the most predominant causes of ulcerative dermatitis in camels and buffaloes (10,11). *Corynebacterium pseudotuberculosis* was soil born infection since the organism could survive in soil for sometime (12). While the external parasites such as ticks and mites would lead to severe itching and injuries of the head and legs of camels (13). Therefore skin infections in camels may be attributed to rubbing of the animals against rough objects leading to skin abrasions which facilitate the entrance of the pathogenic microorganism present in the soil.

Ringworm is a very common disease of camels and buffaloes, with peak incidence being in the first year of age, typically associated with winter rains or high humidity in late summer (14). Lesions start as small crusty, circular skin lesions which can spread to cover almost all of the body. Almost all young camels and buffaloes in a herd will become infected. Ringworm is a zoonotic disease which mainly affects animals handlers which frequently showing Ringworm infection after handling wool or equipment from infected camels and buffaloes (15, 16).

Dermatomycoses (ringworm) in bovine and camels caused by *Trichophyton verrucosum*, while other species of fungi were considered to be saprophytic (17 - 19).

The main purpose of this work was the isolation and identification of the most prevalent causative bacterial and fungal pathogens of skin affections in camels and buffaloes in Menoufeya Governorate. On the other hand, study their antibiogram pattern of the most bacterial isolates to overcome this problem and reduce losses.

## MATERIAL AND METHODS

### Samples

One hundred and fifty Skin specimens were collected from 75 one-humped camels and 75 buffaloes of different age and sexes, suffering from skin affections, such as papular, pustular, suppurative, ulcerative dermatitis, ringworm and tick infestation on neck and thigh regions, for bacteriological and mycological examination in Animal Health Research Institute - Shebin El-Kom. Swabs from wounds and superficial abscesses with skin scrappings were collected from affected areas for bacteriological examination, while hairs and skin scrappings for mycological examination. These samples were obtained from camels and buffaloes in different abattoirs and private farms at El- Menoufeya Governorate within the period from January 2007 up to July 2007.

For bacterial isolation the surface of the lesion was cleaned with cotton wool soaked in sterile physiological saline. Samples were taken from the affected areas using sterile bacteriological swabs and transferred to sterile phosphate buffer saline and rapidly transferred to the laboratory in isothermal container at a temperature 4°C (20).

While for fungal isolation the lesions were cleaned with 70% ethyl alcohol to remove the contaminant and the edges of the lesions were scrapped with sterile scalpel. A sterile forceps was used to pluck the short broken and dull hairs. The collected samples were brought to the laboratory in clean sterile petri dishes and

then transferred to polyethylene bags, sealed, labeled and kept at 4°C till cultured (21).

### Bacteriological examination

Swabs from wounds, abscesses either open or closed or skin scrapping have been transferred directly into sterile physiological saline in a sterile homogenizer flask and the content was homogenized for 2.5 minutes at 3000.r.p.m., then by a sterile loopful the homogenate was cultivated onto the solid plates used. The homogenate was inoculated directly onto nutrient agar, sheep blood agar 5%, MacConky bile salt lactose agar, mannitol salt agar media for *Staph. aureus* and crystal violet blood agar plates. The inoculated plates were incubated aerobically at 37°C for 24-48 hours, suspected colonies were subcultured, purified and preserved in semisolid agar for further identification.

Suspected colonies appearing on different media were identified by studying characters of the colonies as well as Gram's stain, then identified morphologically (22, 23) and biochemically (24 - 28).

### Mycological examination

A small amount of hairs and skin scrappings were placed in the center of a clean slide and then 2-3 drops of 20% KOH was added and covered by a cover slip, then gently warmed to dissolve keratin but boiling was avoided as boiling leads to precipitation of the fluid and crystal formation. The preparation was left in a humid chamber for about 30 minutes. By using the low and high power lenses of the microscope, the slide was then examined. The hair was examined for endothrix, large or small spore ectothrix type for hair invasion. While the specimens were cultured onto Sabouraud's dextrose agar containing 0.05% cyclohexamide chloramphenicol, malt extract agar and mycobiologic selective agar plates in duplicate. The specimen selected for culture was pressed into the surface of the agar to ensure good contact with the medium but not buried in it. The optimal temperature for recovery of most fungi is 30°C although one plate was cultured at 30°C and the other at 37°C for a minimum period of 7 days till 2 weeks. The inoculated

plates were examined macroscopically for fungal growth, texture, diffusible pigment and morphological description (29) and microscopically by both needle mount method (30) and slide culture method (31). The standard description of fungi was recorded (32).

### Sensitivity of isolates to chemotherapeutic agents

Antibiotic sensitivity discs were obtained from Oxoid. Antibiogram was applied on the most predominant isolated strains using disc diffusion technique with Mueller agar (28, 33). The results were interpreted according to the manual supplied by Oxoid Company.

## RESULTS

Results in Table 1, showed the bacterial and mycotic isolates from skin affections in examined buffaloes and camels. Out of 75 samples of examined buffaloes, 53 samples (70.7%) were positive. While out of 75 samples of examined camels, 44 samples (58.7%) were positive.

As shown in Table 2, out of 53 buffaloes positive for bacterial and mycotic skin affections, 25 cases showed bacterial infection (47.2%), 28 cases showed mycotic infection (52.8%). While out of 44 camels positive for bacterial and mycotic skin affections, 26 cases showed bacterial infection (59.1%), 18 cases showed mycotic infection (40.9%). The direct examination in 10% KOH mounts revealed that 6/75 buffaloes and 4/75 camels were positive, out of 150 clinical samples collected from buffaloes and camels.

Results in Table 3, showed the different types of bacteria and fungi isolated from skin affections of buffaloes and camels. The bacteriological isolation from skin affections of diseased buffaloes were *Staph. aureus*, *Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli*, *Strept. Pyogenes* and *Pseudomonas aeruginosa* with incidence of 28%, 12%, 20%, 16%, 12%, 8% and 4%, respectively. While the bacteria isolated from skin affections of camel were *Staph. aureus*,

*Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli* and *Strept. Pyogenes* with incidence of 19.2%, 7.7%, 23.1%, 30.8%, 7.7% and 11.5%, respectively.

The keratinophilic fungi isolated from skin affections of buffaloes was *Trichophyton verrucosum* with incidence of 11.3%. While the saprophytic fungi isolated from skin of buffaloes were *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Penicillium* spp., *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporium* spp. with incidence of 22.7%, 13.6%, 9.1%, 13.6%, 13.6%, 9.1%, 9.1% and 9.1%, respectively. The keratinophilic fungi isolated from skin affections of camels was *Trichophyton verrucosum* with incidence of 9.1%. But the saprophytic fungi isolated from skin of camels were *Aspergillus niger*, *Aspergillus fumigatus*, *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporium* spp. with incidence of 21.4%, 14.3%, 21.4%, 7.1%, 21.4%, and 14.3%, respectively.

The *in vitro* sensitivity of the most prevalent bacteria isolated from skin affection of buffaloes and camels were carried out against 14 chemotherapeutic agents as showed in

Table 4. All tested strains of *Staph. aureus* were highly sensitive to cephalothin, erythromycin, tobramycin and enrofloxacin. Most of these strains were highly resistant to norfloxacin, polymyxin, streptomycin and gentamicin. Comparing the sensitivity of *Staph. epidermidis* it was found that all isolates were highly sensitive to cephalocin, flumequine, tobramycin and trimethoprim & sulphamethoxazole.

All tested strains of *Corynebacterium pseudotuberculosis* were highly sensitive to amoxycillin, ciprofloxacin, tobramycin and erythromycin, but the same strains were resistant to flumequine and polymyxin. While the isolated strains of *Corynebacterium pyogenes* and *Strept. Pyogenes* gave as the same results, they were sensitive to amoxycillin, ciprofloxacin, flumequine, tobramycin and trimethoprim & sulphamethoxazole, but the same strains were resistant to norfloxacin, streptomycin and tetracycline. As regards to *E. coli* isolates, the majority of strains were highly sensitive to cephalocin, erythromycin, gentamicin, tobramycin and norfloxacin. The same strains were highly resistant to enrofloxacin, flumequine and ciprofloxacin.

Table 1. Prevalence rate of bacterial and mycotic affection in examined buffaloes and camels

Species	No. of examined cases	Positive cases		Negative cases	
		No.	%	No.	%
Buffaloe	75	53	70.7	22	29.3
Camel	75	44	58.7	31	41.3

% was calculated according to the number of examined samples .

Table 2. Distribution of positive cases according to the type of infection.

Isolates	Boffaloe		Camel	
	No. of isolates	%	No. of isolates	%
Bacteria	25	47.2	26	59.1
Dermatophytic fungi	6	11.3	4	9.1
Saprophytic fungi	22	41.5	14	31.8
Total fungal isolates	28	52.8	18	40.9

% was calculated according to the number of positive cases .

**Table 3. Prevalence rate of different types of bacteria and fungi isolated from skin affections of buffalo and camel.**

Microorganisms	Buffaloe		Camel	
	No. of cases (25)	%	No. of cases (26)	%
<b>A-Bacterial isolates</b>				
<i>Staph. aureus</i>	7	28	5	19.2
<i>Staph. epidermidis</i>	3	12	2	7.7
<i>Coryne. pseudotuberculosis</i>	5	20	6	23.1
<i>Coryne. Pyogenes</i>	4	16	8	30.8
<i>E. coli</i>	3	12	2	7.7
<i>Strept. Pyogenes</i>	2	8	3	11.5
<i>Pseudomonas aeruginosa</i>	1	4	0	0
Total bacterial isolates	25	47.2	26	59.1
<b>B-Fungus isolates</b>				
<b>Dermatophytic fungi</b>				
<i>Trichophyton verrucosum</i>	6	11.3	4	9.1
<b>Saprophytic fungi</b>	No. of cases (22)	%	No. of cases (14)	%
<i>Aspergillus niger</i>	5	22.7	3	21.4
<i>Aspergillus flavus</i>	3	13.6	0	0
<i>Aspergillus fumigatus</i>	2	9.1	2	14.3
<i>Penicillium</i> species	3	13.6	0	0
<i>Alternaria</i> species	3	13.6	3	21.4
<i>Rhizopus</i> species	2	9.1	1	7.1
<i>Mucor</i> species	2	9.1	3	21.4
<i>Cladosporium</i> species	2	9.1	2	14.3

% was calculated according to the number of cases .

**Table 4. Results of chemotherapeutic sensitivity test for the most prevalent bacteria isolated from skin affections of buffalo and camel.**

Antibacterial agents	Concen	<i>Staph. aureus</i> (12)*		<i>Staph. epidermidis</i> (5)*		<i>Coryne. pseudotuberculosis</i> (11)*		<i>Coryne. Pyogenes</i> (12)*		<i>Strept. Pyogenes</i> (5)*		<i>E. coli</i> (5)*	
		S.	%	S.	%	S.	%	S.	%	S.	%	S.	%
Ampicillin	10ug	8/12	66.7	5/5	100	0	0	1/12	8.3	0/5	0	4/5	80
Amoxycillin	10ug	6/12	50	3/5	60	10/11	90.9	12/12	100	5/5	100	2/5	40
Cephalocin	10ug	11/12	91.7	5/5	100	5/11	45.5	5/12	41.7	2/5	40	5/5	100
Ciprofloxacin	5ug	7/12	58.3	3/5	60	8/11	72.7	10/12	83.4	4/5	80	1/5	20
Enrofloxacin	5ug	9/12	75	1/5	20	5/11	45.5	6/12	50	2/5	40	0	0
Erythromycin	10ug	11/12	91.7	1/5	20	7/11	63.6	6/12	50	2/5	40	5/5	100
Flumequine	30ug	7/12	58.3	5/5	100	0	0	8/12	66.7	3/5	60	0	0
Gentamicin	10ug	2/12	16.6	2/5	40	5/11	45.5	1/12	8.3	0	0	5/5	100
Norfloxacin	10ug	0/12	0	1/5	20	4/11	36.4	0/12	0	0	0	4/5	80
Polymyxin	10ug	0/12	0	2/5	40	0	0	2/12	16.6	1/5	20	3/5	60
Streptomycin	10ug	1/12	8.3	0	0	5/11	45.5	0/12	0	0	0	3/5	60
Tetracycline	30ug	3/12	25	2/5	40	2/11	18.2	0/12	0	0	0	2/5	40
Trimethoprim & Sulphamethoxazole	1.25ug	8/12	66.7	5	100	3/11	27.3	7/12	58.3	3/5	60	2/5	40
Tobramycin	10ug	10/12	83.3	5	100	8/11	72.7	7/12	58.3	3/5	60	5/5	100

\*: Number of isolates.

S: Sensitive.

% : Percentage of sensitive isolates in relation to total isolates.

## DISCUSSION

The examined skin of buffaloes and camels revealed several affections such as papular, pustular, suppurative, ulcerative, granulomatous dermatitis, ringworm and tick infestation which were found around the ear, in the neck, breast, forearm and the thigh regions.

In this study, the bacteriological and mycological examination of skin specimens in an attempt to throw spot lights upon the incidence percentages of bacterial and fungal affections and the *in vitro* chemotherapeutic susceptibility testing of the most prevalent bacterial isolates were detected.

As shown in Table 1, it was found that out of 75 diseased examined buffaloes, 53 animals proved to harbour bacterial or fungal or both infections with an incidence of 70.7%. While out of 75 diseased examined camel, 44 were positive for bacterial and fungal infections with an incidence of 58.7%. These results agreement with previous investigation which recorded that at least 75% of the whole output of bovine hides was affected by bacterial and fungal infection (34). Pal and Singh (35) found that 89.5% of dairy cattle were infected with bacterial and fungal diseases. Several investigators (4, 6, 15) mentioned that the skin of camels is a wide field for the implantation and growth of many infections.

As shown in Table 2, it was found out of 53 diseased buffaloes harboured bacterial and mycotic skin affections, 25 cases showed bacterial infection (47.2%), 28 cases showed mycotic infection (52.8%). These findings coincide with the study carried out on cattle in Egypt and showed that 60% out of 1290 cattle were infected with mycotic infection (36). The occurrence and distribution of bovine skin disease in Kenya due to bacterial infection reached to 15.9% (17). Other workers isolated bacteria and fungi from diseased buffaloes with nearly the same percentage (37-39).

While out of 44 diseased camels harboured bacterial and mycotic skin affections, 26 cases showed bacterial infection (59.1%), 18 cases

showed mycotic infection (40.9%) as shown in Table 2. These results are nearly similar to that with recorded among 75 camels skin lesion where 48% were positive for fungal infection (40). In another investigation (4), bacteria were isolated from skin abscesses of camels with an incidence 66.7%. *Corynebacterium pseudotuberculosis* was isolated from suppurative and ulcerative dermatitis in camel (6) and cows (41).

As shown in Table 3 *Staph. aureus*, *Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli*, *Strept. Pyogenes* and *Pseudomonas aeruginosa* were the most predominant bacterial isolates from skin affections of buffaloes, with incidence of 28%, 12%, 20%, 16%, 12%, 8% and 4%, respectively. *Staph. aureus* was also isolated by different investigators (39, 42, 43), from opened and closed skin lesions in buffaloes at different ages. Moreover, *Corynebacterium pseudotuberculosis* was the main cause of skin affections in cattle in Kenya or in association with fungi (44). Moreover, it was observed that cutaneous skin infection in buffaloes was due to *Corynebacterium pseudotuberculosis* alone or with secondary fungal infection (39,45). While, in Egypt *Corynebacterium pseudotuberculosis* was the main cause of oedematous skin disease of buffalo (5). Also, *Staph. epidermidis*, *Corynebacterium pyogenes*, *E. coli*, *Strept. Pyogenes* and *Pseudomonas aeruginosa* were the cause of skin affections in buffaloes (38, 39,46, 47).

While the bacterial isolated from skin affections of camel were *Staph. aureus*, *Staph. epidermidis*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, *E. coli* and *Strept. Pyogenes* with incidence of 19.2%, 7.7%, 23.1%, 30.8%, 7.7% and 11.5%, respectively. Our results nearly agreed with those obtained by Domench *et al.* (8) who mentioned that *Staph. aureus*, *Corynebacterium pseudotuberculosis*, *Corynebacterium pyogenes*, and *Strept. Pyogenes* were the causative pathogenic bacteria of the skin in camels. An outbreak of

*Corynebacterium pseudotuberculosis* was recorded in 21 dromedaries, cattle and buffaloes in El-Sharkia Governorate (10), and from abscesses in the neck, shoulder and hind legs of camels in Assuit Governorate (4,9).

As shown in Table 3, *Trichophyton verrucosum* was the only dermatophytic fungi isolated from skin affections of buffaloes with an incidence of 11.3%. *Trichophyton verrucosum* was the main dermatophyte which caused ring worm of cattle in Egypt (14, 48), Kenya (17), Japan (19,49,50) and Italy (51). The saprophytic fungi isolated from skin affections of diseased buffaloes were *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Penicillium* spp., *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporium* species in an incidence of 22.7%, 13.6%, 9.1%, 13.6%, 13.6%, 9.1%, 9.1%, and 9.1%, respectively. These findings agreement with (52), who studied the occurrence of fungi on the apparently healthy skin of calves and isolated *Aspergillus niger*, *Aspergillus flavus* and *Mucor* spp. (17), isolated *Aspergillus niger*, *Aspergillus flavus*, *Penicillium* spp. and *Fusarium* spp. from bovine skin diseases in Kenya. Moreover (16,18) found the most important pathogen of the genus *Aspergillus* affecting cattle is *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus fumigatus*

*Trichophyton verrucosum* is the main cause of ringworm in camels, with other potentially pathogenic fungi (15,40, 53)

In our study The fungi isolated from skin affections of camels was also *Trichophyton verrucosum* as a dermatophytic fungi with the incidence of 9.1%. While *Aspergillus niger*, *Aspergillus fumigatus*, *Alternaria* spp., *Rhizopus* spp., *Mucor* spp., and *Cladosporium* spp. were isolated as a saprophytic fungi with incidence of 21.4%, 14.3%, 21.4%, 7.1%, 21.4%, and 14.3%, respectively.

As shown in Table 4, *Staph. aureus* strains were highly sensitive to cephalothin, erythromycin, tobramycin, and enrofloxacin. On the other hand *Strept. Pyogenes* were highly sensitive to amoxycillin, ciprofloxacin

flumequine, tobramycin and trimethoprim & sulphamethoxazole. These results are nearly in agreement with that previously cited (54, 55). *Staph. epidermidis* was highly sensitive to cephalocin, flumequine, tobramycin and trimethoprim & sulphamethoxazole. While *E. coli* isolates, were highly sensitive to cephalocin, erythromycin, gentamicin, tobramycin and norfloxacin. These findings nearly coincide with the previously reported investigations results (46,56).

The majority of *Corynebacterium pseudotuberculosis* and *Corynebacterium pyogenes* isolated from opened skin lesions in buffaloes were highly sensitive to enrofloxacin, ciprofloxacin, ampicillin and tobramycin (7, 43). Our study showed that the organisms is highly sensitive to amoxycillin, ciprofloxacin, tobramycin and erythromycin. While the isolated strains of *Corynebacterium pyogenes* were sensitive to amoxycillin, ciprofloxacin flumequine, tobramycin and trimethoprim & sulphamethoxazole.

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## الملخص العربي

## المسببات البكتيرية والفطرية لإصابات الجلد في الجاموس والأبل.

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اصابة جلد الحيوان بالأمراض البكتيرية والفطرية تعتبر من أهم المشاكل التي تؤثر علي صحة الحيوان وانتاجه مما يؤدي الي خسائر اقتصادية كبيرة. لذلك قمنا بهذه الدراسة و ذلك لمعرفة أهم المسببات البكتيرية والفطرية لأصابات الجلد في ١٥٠ عينة من الجاموس والأبل المصاب بأعرض اكلينيكية باثولوجية علي الجلد بمحافظة المنوفية.

في هذه الدراسة تم فحص ٧٥ من الجاموس المصاب فوجد أن ٥٣ حيوان مصاب ببكتيريا وفطريات بنسبة ٧٠,٧% منها ٢٥ حالة مصابة بالبكتيريا فقط ، ٢٨ حالة مصابة بالفطريات فقط بنسبة ٤٧,٢% ، ٥٢,٨% علي الترتيب. كما تم فحص ٧٥ حالة أيضا من الأبل المصاب فوجد أن منهم ٤٤ حيوان مصاب ببكتيريا وفطريات بنسبة ٥٨,٧% منها ٢٦ حالة مصابة بالبكتيريا فقط ، ١٨ حالة مصابة بالفطريات فقط بنسبة ٥٩,١% ، ٤٠,٩% علي الترتيب .

وبالفحص البكتريولوجي للجلد المصاب في الجاموس تم عزل الميكروب العنقودي الذهبي والعنقودي الجلدي والوتدية الغنمية (السل الكاذب) والكوريني الصيدي والأشريشيا القولونية والمكور السبحي الصيدي والزائفة الزنجارية بنسبة ٢٨% ، ١٢% ، ٢٠% ، ١٦% ، ١٢% ، ٨% ، ٤% علي الترتيب. بينما الفحص البكتريولوجي للجلد المصاب في الأبل تم عزل الميكروب العنقودي الذهبي والعنقودي الجلدي والوتدية الغنمية (السل الكاذب) والكوريني الصيدي والأشريشيا القولونية والمكور السبحي الصيدي بنسبة ١٩,٢% ، ٧,٧% ، ٢٣,١% ، ٣٠,٨% ، ٧,٧% ، ١١,٥% علي الترتيب.

وبالفحص للفطريات في الجلد المصاب للجاموس تم عزل التريكوبيتون فيركوزم بنسبة ١١,٣% كما تم عزل الأسبرجيليس الأسود والأسبرجيليس فلافس والأسبرجيليس فيومجاس والبنسيليوم والألتيرناريا والرهبوزيبس والميوكر والكلاوسبوريم بنسبة ٢٢,٧% ، ١٣,٦% ، ٩,١% ، ١٣,٦% ، ١٣,٦% ، ٩,١% ، ٩,١% ، ٩,١% ، ٩,١% علي الترتيب ولكن الفحص للفطريات للجلد في الأبل المصاب تم عزل التريكوبيتون فيركوزم بنسبة ٩,١% وكذلك تم عزل الأسبرجيليس الأسود والأسبرجيليس فيومجاس والألتيرناريا والرهبوزيبس والميوكر والكلاوسبوريم بنسبة ٢١,٤% ، ١٤,٣% ، ٢١,٤% ، ٧,١% ، ٢١,٤% ، ٢١,٤% ، ١٤,٣% علي الترتيب. علما بأن الأصابات الجلدية في الجاموس والجمال غالبا ماتحدث عن طريق التريكوبيتون فيركوزم ولذا تعتبر الفطريات الأخرى المعزولة غير مسببة للمرض.

وتم أيضا دراسة مدى حساسية العترات البكتيرية المعزولة للمضادات الحيوية فكانت معظم العترات المعزولة حساسة للأموكسيسيلين والسبروفلوكساسين والأريثروميسين والتوبراميسين والترايميثوبريم مع السلفاميثوكسازول.