

EQUINE SKIN AFFECTION, PREVALENCE AND RELATED RISK FACTORS IN EGYPT

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ABSTRACT

This work aimed to study the prevalence of different skin affections in equine and the risk factors influencing it during one year from February 2009 to February 2010. Out of 3014 examined equine, 267 (8.86%) were suffering from skin diseases. The prevalence rate was dermatophytosis 3.52% , Sweet itch 2.19% , Mange 1.46% , bacterial dermatitis 0.36% , cutaneous pythiosis 0.3%, cutaneous habronemiasis 0.27%, vitiligo 0.2% , allergic dermatitis 0.2%, urticaria 0.17%, tick allergy 0.13% and equine warts 0.07%. Dermatophytosis occurred with high incidence rate in Arabian horses although good hygiene and management comparing to draft horses which showed sporadic cases. The disease occurred more commonly in younger ages and in fall season. The mycotic cultivation revealed 75 dermatophyte isolates. The most common isolated dermatophyte was *T.equinum* 53.3% followed by *M.cantis* 29.3% and other dermatophytes were isolated as *M.gypseum* 9.3%, *T.mentagrophytes* 5.3%, *T.tonsurans* 1.3% and *M.audouinii* 1.3%. Sweet itch occurred with higher incidence in horses at summer season and the number of horses affected with sweet itch rose with increasing age. Mange was diagnosed mostly in draft horses and donkeys with high incidence in winter. No age difference was observed in the occurrence of mange in equine. Psoroptic mange was the most common cause of mange in equine.

Key word: Skin affection, Dermatophyte, Sweet itch, Mange, equine and Arabian horse.

INTRODUCTION

Skin is the largest and most visible organ of the body and represents the anatomical and physiological barrier between the animal and environment. It provides protection from physical, chemical and microbiologic injury, and its sensory components perceive heat, cold, pain, pruritus, touch, and pressure (Scott and Miller, 2003). There are many pathogens (parasitic, bacterial, fungal and vi-

ral), incriminated as causes of equine's skin affection infections.

Equine are essential source of power in agriculture and for urban and peri-urban transport in developing countries. Globally, working animals supply approximately 50% of agricultural power needs. In Egypt, equines are used not only as working animals but also in racing, jumping and showing competitions, horse

dance, pleasure riding and breeding. In this respect skin diseases are considered to be of private importance as they affect the performance of horses and consequently the economic values. In addition to compromising the horse's comfort and appearance, skin diseases can interfere with the horse's ability to function in riding, working, or show. (Scott and Miller 2003).

Dermatophytosis is one of the most frequent skin diseases of horses. Contagiousness among animal communities, high cost of treatment, difficulty of control measures, and the public health consequences of dermatophytosis explain its great importance (Chermette et al., 2008). A 1989 survey of the members of the American Association of Equine Practitioners revealed that skin disorders were the fourth most common medical problem encountered (following colic, viral respiratory tract disease, and endometritis). (Traub-Dargatz et al., 1991).

This work was directed to study the prevalence rate of skin affection with evaluation the effect of age, season and management system as risk factor in prevalence of these affections in Egypt.

MATERIAL AND METHODS

I- Animals :

A total of 3014 equine spp. of different ages and equine species (1880 horses and 1134 donkey), were noticed for the presence of skin diseases all over one year from February 2009 to February 2010. The animals distribution was (1105) Arabian and riding horses located in studs and stables, while (775) draft horses and (1134) donkeys were sporadic animals at

risk in areas of the study this number of draft horses and donkeys was obtained from deworming records of equine in these areas by Brooke animal hospital. Clinical and dermatological examination applied according to Scott and Miller (2003).

II- Samples

A- Skin scrapings and hair samples :

Skin scrapings and hair samples were collected from the edge of lesions after swabbing either with mineral oil until oozing of blood for parasitological examination, or with alcohol 70% and placed in sterile labeled envelopes or in sterile petri dishes for mycological examination according to Carter and Cole (1990).

B- Thick crusts

Thick crusts, direct impression smears and swabs from exudative lesion were collected for bacteriological examination according to Quinn et al., (1994).

C- Skin biopsy and tissue samples.

Skin biopsies, and kunker samples were obtained from horses with ulcerative cutaneous or subcutaneous masses, every sample was divided into two sections one collected in sterile bottle for mycotic isolation (Grooters et al., 2002). While the other collected in formalin 10% for dermatohistopathologic examination according to Scott and Miller (2003).

III- Mycological examination

The skin scraping, hair and tissue samples were processed for direct microscopical examination and mycological isolation after Scott and Miller (2003). The identification of

dermatophyte based on the colonial macro-morphology and micromorphology and biochemical test (urea hydrolysis test) was done according to **Rebel and Taplin (1970)**. Definitive morphological identification of *P.insidiosum* isolates was performed microscopically by lacto phenol cotton blue wet mount after **Bentlnck-Smith et al., (1989)**.

IV- Parasitological examination

Direct examinations of scraping for diagnosis of mites or cutaneous habronemiasis were done according **Scott and Miller (2003)**.

V- Bacteriological examination

Direct microscopical examination of impression smears and softened crusts after staining by Giemsa or Gram's stain and inoculation on the brain heart infusion medium, Nutrient agar and McConkey agar plates were used for diagnosis of bacterial dermatitis. (**Quinn et al., 1994**).

RESULTS

The overall prevalence of skin affectlons in equine was 8.86%. The skin diseases including dermatophytosis, mange and sweat itch showed the highest prevalence rate among equine (table 1). The significant effect of the seasons, age and management on the frequency of skin diseases in horses was shown in table 2,3,4.

The obtained results revealed that 106 animals were suffering from dermatophytosis (ringworm) with a higher prevalence rate 3.52 % among examined equine. The most obvious clinical signs (Plate 2, image 1 and 2) were multiple tufted to crusted papules in the beginning, after that the lesions of alopecia became annular or oval about 5-20cm in diameter with crusts that may be thin or thick. Hairs can caslly be plucked from lesions leaving a glistening bare skin. Alopecia and a prominent silvery scaling are seen in older lesions. The lesions distribution on the body was shown in table (5).

Table (1) : Prevalence of skin affections in equine.

Diseases	Horse (No:1880)		Donkey (No:1134)		Total Prevalence (No:3014)	
	No	Rate%	No	Rate%	No	Rate%
Dermatophytosis	100	5.31	6	0.53	106	3.52
Cutaneous pythiosis	9	0.48	0	0.0	9	0.3
Bacterial dermatitis	5	0.27	6	0.53	11	0.36
Mange	26	1.38	18	1.59	44	1.46
Cutaneous habronemiasis	8	0.43	0	0.0	8	0.27
Sweet itch	63	3.35	3	0.26	66	2.19
Tick allergy	4	0.21	0	0.0	4	0.13
Allergic dermatitis	6	0.32	0	0.0	6	0.2
Urticaria	3	0.16	2	0.18	5	0.17
Vitiligo	6	0.32	0	0.0	6	0.2
Equine wart	2	0.11	0	0.0	2	0.07

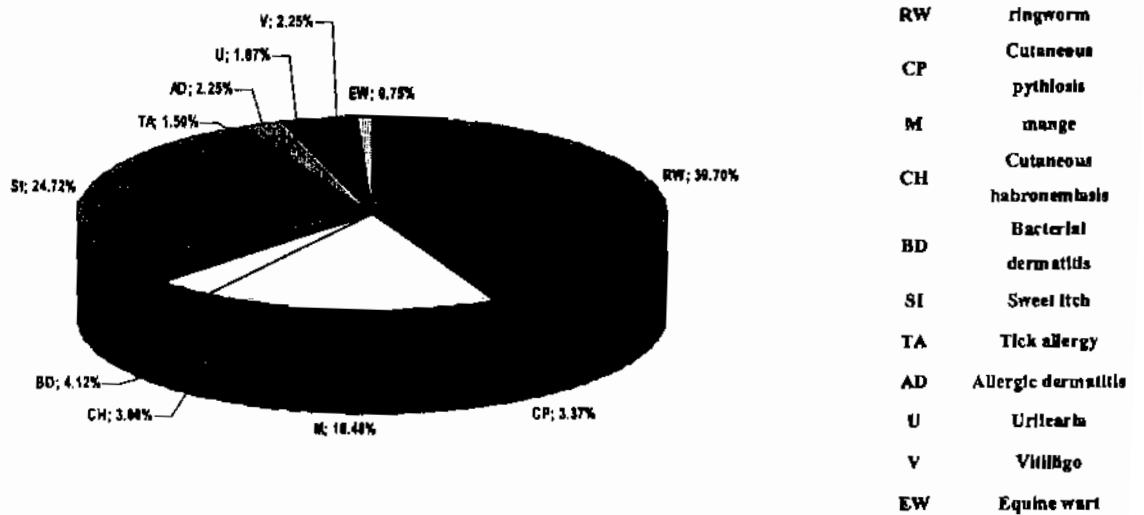


Figure (1) : The percentage of skin diseases in relating to the total No. of affected equine (267)

Table (2) : Prevalence rate of skin affections in relation to the horse age.

Skin Disease In horses	Age					
	<1 year (No.320)		1-5 year (No.540)		>5 year (No.410)	
	No	rate%	No	rate%	No	rate%
Dermatophytosis(n=100)	66	20.6	22	4.1	12	2.9
Cutaneous pythiosis(n=9)	0	0	1	0.2	8	2
Baeterial dermatitis(n=5)	0	0	2	0.4	3	0.7
Mange((n=26)	10	3.1	9	1.7	7	1.7
Cutaneous habronemiasis(n=8)	2	0.6	1	0.2	5	1.2
Sweet itch(n=63)	10	3.1	24	4.4	29	7.1
Total skin diseases(211)	88	27.5	59	10.9	63	15.4

Table (3) : Prevalence rate of skin affections in relation to the seasons in horse.

Skin Disease In horses	Season							
	Fall(No.1893)		Winter(No.1822)		Spring(No.1868)		Summer(No.1937)	
	No	rate%	No	rate%	No	rate%	No	rate%
Dermatophytosis(n=100)	56	2.96	23	1.26	10	0.54	11	0.57
Cotaneous pythiosis(n=9)	3	0.16	1	0.05	1	0.05	4	0.21
Bacterial dermatitis(n=5)	0	0	0	0	1	0.05	4	0.21
Mange (n=26)	1	0.05	14	0.77	1	0.05	10	0.52
Cutaneous habronemiasis(n=8)	0	0	0	0	0	0	8	0.41
Sweet itch(n=63)	7	0.37	0	0	14	0.75	42	2.17
Total skin diseases(110)	67	3.54	28	1.53	16	0.86	74	3.81

Table (4) : Prevalence rate of skin affection according to the type of management.

Skin affections	Horse Studs and stables (Arabian and riding horses, No.1105)		Sporadic horse (draft horses, No.775)	
	No	Rate%	No	Rate%
Dermatophytosis(100)	84	7.6	16	2.06
Cutaneous pythiosis(9)	2	0.18	7	0.9
Bacterial dermatitis(5)	0	0	5	0.65
Mange(26)	3	0.27	23	2.97
Cutaneous habronemiasis(8)	4	0.36	4	0.52
Sweat itch(63)	34	3.08	29	3.74

Table (5) : Distribution of dermatophytosis lesions on horse body relating to their type.

Area	Horse		
	Arabian horse (No=192)	Draft horse (No=36)	Riding horse (No=10)
Head	20(10.42%)	4(11.11%)	1(10%)
Neck	30(15.62%)	9(25%)	2(20%)
Chest	37(19.27%)	3(8.33%)	0
Girth	1(0.52%)	0	4(40%)
Thorax and barrel	35(18.23%)	4(11.11%)	3(30%)
Abdomen	1(0.52%)	1(2.77%)	0
Back, loin and croup	13(6.77%)	9(25%)	0
Hindquarters	42(21.88%)	5(13.89%)	0
Legs	13(6.77%)	1(2.77%)	0

No= total number of cases have dermatophytosis lesion on each body are

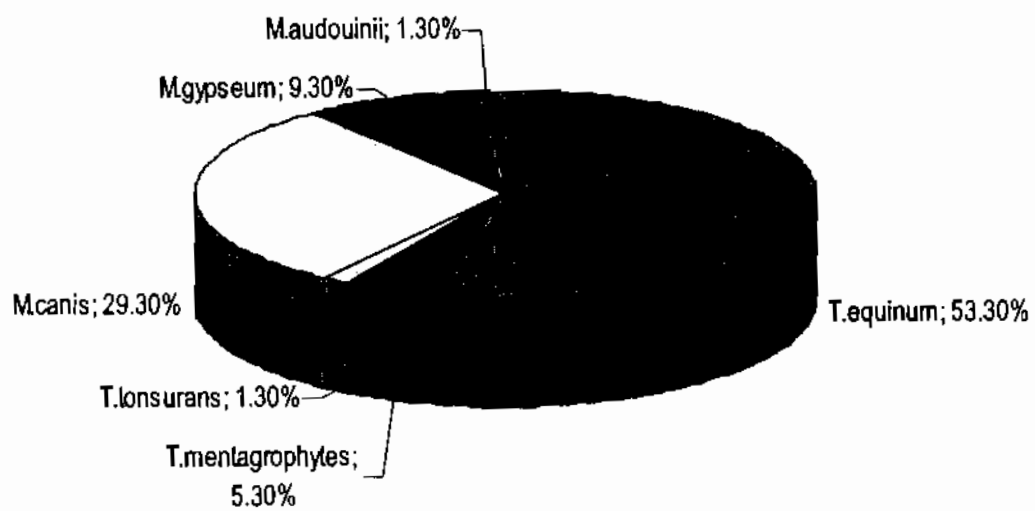


Figure (2) : The percentage of isolated dermatophyte species.

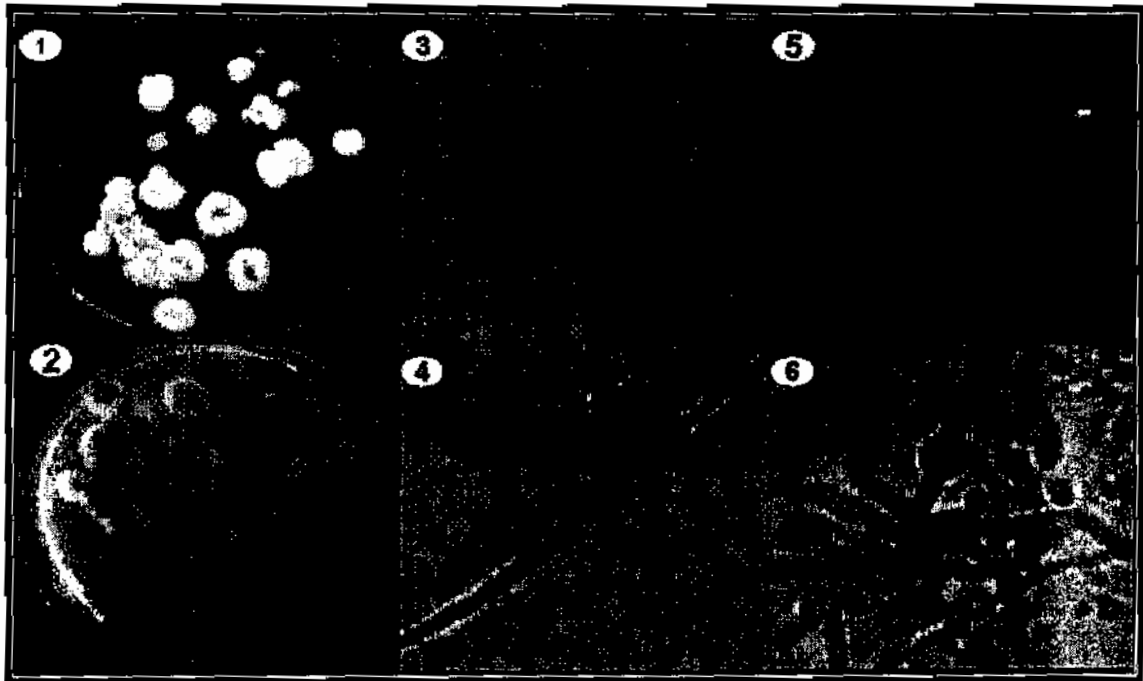


Plate (1) *Trichophyton equinum*

- Image 1.* Surface of the colony showing white and downy texture
Image 2. Reverse surface of the colony showing bright yellow and dark red color in the centre.
Image 3. Micro-Conidia which are abundant, clavate to pyriform and sessile along the hyphae.
Image 4. Hyphae showing nodular organs
Image 5. Macro-Conidia which are rare, smooth and thin walled
Image 6. Hyphae showing chlamydo-spores

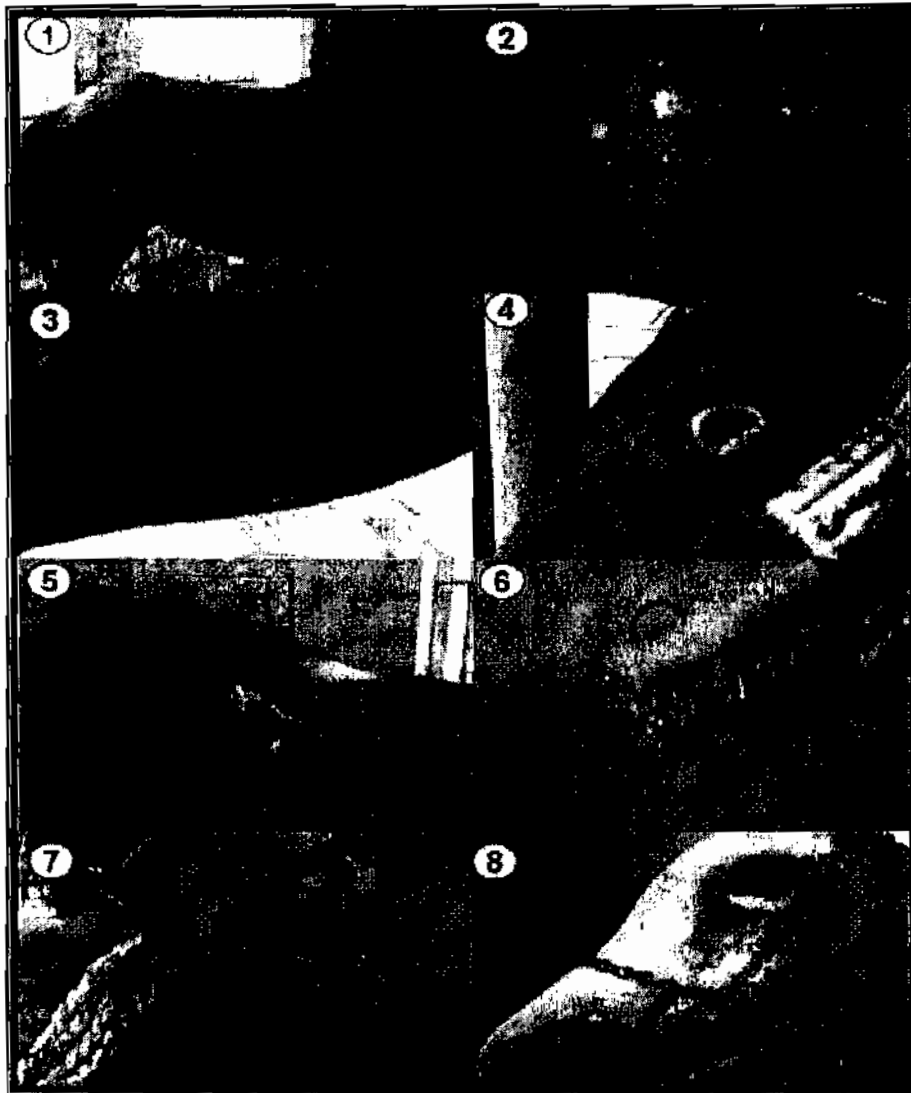


Plate (2) Clinical skin lesions.

- Image 1.** Circumscribed alopecia with scales in foal due *M.gypseum*
- Image 2.** Severe lesions caused by *T.equinum* with annular areas of alopecia and crusting there are there are lesions coalesce to form polycyclic shapes
- Image 3.** Cutaneous Pythiosis in ventral abdomen showing two ulcerative granuloma with serosanguinous fluid
- Image 4.** Cutaneous habronemiasis lesion showing ulcerative granuloma on the medial canthus of the eye
- Image 5.** Psoroptic mange lesion on the withers showing irregular pruritic area with alopecia and scales
- Image 6.** Sweat itch lesion with papules, scaliness and alopecia of the mane of horse
- Image 7.** Equine wart showing raised, grayish white papules on the muzzle of foal
- Image 8.** Vitiligo lesions with depigmented area around eye and in the face of mare

DISCUSSION

Out of 3014 equines, 267 cases showed skin diseases with prevalence rate 8.86% and in horses the prevalence rate was higher 12.3% with a similar rate was reported by **Awad, (1995)**. Dermatophytosis was the most common skin disease which represented 39.7% of the skin diseases affecting equine. This result agrees with **Chermette et al., (2008)** who reported that dermatophytosis is the most frequent skin diseases of equine.

Lesions of dermatophytosis were distributed on several parts of the body this distribution was found (irrespective percentage or the arrangement of distribution) similar to **Awad, (1995)**. In draft horses lesions were commonly found on neck, back and croup due to contact with contaminated harness as reported by **Takatori et al. (1981)**. While Arabian horses that reared congregated together into a stable yard the most common affected areas were the head, neck and chest this can be explained that these animals were fed on common troughs, favoring direct contact and the consequent spread of dermatophytes to these areas. Also lesions were observed in any part of body like hindquarters, thorax, barrel and legs due to sharing the same grooming kits between animals especially in stabled horses allowing the spread of infection to these areas as reported by **Pereira et al. (2006)**. In riding horses lesions usually appeared in the girth area and it was attributed to the contact with contaminated boots during riding and also to frequent trauma in this area making skin not intact which facilitate the infection with dermatophytes as reported by **Pascoe and Knottenbelt, (1999)**. Generalized lesions all over the body showed in eight animals (7 horses

and one donkey) The generalized lesions were observed mostly in younger ages so it was attributed to inadequate immunity as reported by **Scott and Miller (2003)**.

Most clinical signs of dermatophytosis were the same as observed by **Scott and Miller (2003)**. But in most cases the pruritus was absent except in cases that complicated with allergy and mange and this agrees with **Pascoe and Knottenbelt, (1999)**.

In our study, most cases of dermatophytosis occurred with high prevalence in age below 1 year (table 2), this result agrees with **Zukerman et al. (1992)**, **Awad (1995)**, **Mahmoud (1995)**, **Stannard (2000)**, **El-Ghareib and Khadr, (2000)**, **Pereira et al. (2006)** and **Pilsworth and Knottenbelt. (2007)**. This may be in part due to their weak immunity and the high pH of their skin as the pH of the skin decreases with age as reported by **Radostits et al. (2006)**. On the other hand, **Yahyaei and Ebrahimi (2000)** and **Al-Ani et al. (2002)** reported that horses of different ages are susceptible to ringworm infection. This maybe because ringworm is new to an area where the animals have no immunity against the infection. Also the incidence of dermatophytosis was higher in fall and winter season and the same was reported by **Awad (1995)**, who attributed it to several factors of which the weakness of solar radiation and U.V. rays which have effect on the aleuroconidia of dermatophytes, **Pereira et al. (2006)**, who explained that, because there is increased growth of hair of animals most often at this time of year which favor ideal microclimate for the growth of dermatophytes and **Radostits et al. (2006)** who attributed it

to high humidity being conducive to multiplication of the fungus. But **El-Ghareib and Khadr(2000)** reported no seasonal effect on the occurrence of dermatophytosis in equine.

The prevalence rate of the infection was higher in Arabian horses than in draft horses and some Arabian horse studs showed explosive outbreak of dermatophytosis especially in foals but in draft horses showed sporadic cases. And it was explained as in most Arabian horses studs the foals reared congregated together into a stable yard so they are under high risk of infection because direct contact with infected animals is the common method of spread of dermatophytes also by indirect transmission through fomites like grooming kits and barns and the environmental contamination like common troughs and bedding. Solitary stabled horses showed low frequency of infection except when the grooming kits had been shared. The same was observed and explained by **Pereira et al. (2006)**, **Radostitis et al. (2006)** and **Pilsworth and Knottenbelt (2007)**.

T. equinum, *M. canis*, *M. equinum*, *M. gypseum*, *T. mentagrophytes* and *T. verrucosum* can usually be the most common cause of dermatophytosis in equine as reported by **Frank (1992)**, **Cabañes (2000)**, **Stannard (2000)**, **Radostitis et al. (2006)** and **Manoyan et al. (2008)**. In our study the common isolated dermatophytes from equine were *T. equinum*, *T. mentagrophytes*, *M. canis* and *M. gypseum*. *T. equinum* was the most common isolated species which represents 53.3% of total isolated dermatophytes and that agrees with **Mahmoud (1995)**, **Stannard (2000)**, **Chiers et al. (2003)**, **Pereira et al.**

(2006) and **Spormann et al. (2008)**. But doesn't agree with **Manoyan et al. (2008)** who found *M. gypseum* the most prevalent aetiological agents and *T. equinum* was significantly lower and **Al-Ani et al. (2002)** who found *Microsporum equinum* as the most common isolate, representing 40% of total identified fungi, followed by *T. equinum* with 24%. The most second most common isolated dermatophyte was *M. canis* and it agrees with **Awad, (1995)**, **Chiers et al. (2003)** and **Manoyan et al. (2008)**. *T. mentagrophytes* was isolated only from five cases in this study so it plays a role in equine dermatophytosis as reported by **Awad (1995)**, **Mahmoud (1995)** and **Manoyan et al. (2008)**. *Microsporum gypseum* which is the main geophilic agents of equine ringworm was isolated from 7 cases mostly draft equines and occurred due to contamination from the soil as reported by **Mahmoud(1995)** and **El Kot (1996)**. In donkeys the only isolated dermatophytes were *Microsporum canis* and *Microsporum gypseum*; the later was reported by **(El Kot, 1996)**.

Sweet itch was the second most common skin disease affecting equine and a total of 66 equines (63 horses and 3 donkeys) of different breeds, ages and sexes had been diagnosed as sweet itch with prevalence rate 2.19% in equine in agreement with **Van Der Haegen et al. (2000)**. The disease occurs as a result of the biting insects especially *Culicoides* as reported by **Greiner et al. (1988)** so the disease was reported in this study most commonly in the summer coinciding with the biting insects season between the months of April and October and this agrees with **(El-Kot, 1996)** and **El-Ghareib and Khadr (2000)** who studied the incidence of sweet itch in Egypt. The

disease occurred in all ages but the incidence rose with increasing age and the same result found by **El-Ghareib and Khadr (2000)**. Also we found that familial predispositions of the disease occurred in 20 cases (30.3%) and this is near to the percentage obtained by **Littlewood (1998)**. The history of seasonality of the condition and the familial (genetic) predispositions of the disease confirm the diagnosis of sweat itch as described by **El-Ghareib and Khadr (2000)**. The skin lesions were commonly found in neck, mane, chest and tail which characterized by severe persistent itching, popular urticaria, scaliness, and increased thickness of the skin with alopecia as reported by **Scott and Miller (2003)**. In this study the incidence of sweat itch was high in Arabian horses especially if there is poor insects control and this accepted with (**Petrikowski and Bourdeau, 1995**) who reported Arabian horse to be at high risk to the disease. Also the draft horses show a high incidence to the disease but it was attributed to that they are usually stabled on dirty and moist ground which favored the breeding of *Culicoides* as reported by (**Gall et al., 1988**).

Mange was diagnosed in 44 equine (26 horses and 18 donkeys) with prevalence rate 1.46% in equine. The most common examined mite was *Psoroptes equi* species which was

detected from irregular pruritic skin lesions on the head, neck, withers, thorax, back and croup. The same result obtained by **Awad (1995) and El-Ghareib and Khadr, 2000** who found that *Psoroptes equi* the only to infest horse. In the contrary **Osman et al. (2006)** found that *Chorioptes* mite was the most prevalent mite. There was no significant effect of the age on the incidence of mange in equine and this agrees with **Osman et al. (2006)**. But it occurred with high incidence in winter season and this is attributed to bad hygiene and poor grooming and cleaning in this season. But this result disagrees with **El-Ghareib and Khadr (2000)** who observed no season difference was observed in the occurrence of psoroptic mange.

It was concluded that dermatophytosis was a common skin disease affecting equine. It occurs with high prevalence rate in younger ages and in fall season. And occurred with high prevalence rate in Arabian horse studs. *T. equinum* was the most common isolated dermatophytes from horses. Sweet itch was the second common skin disease affecting equine and occurred with high prevalence rate in summer season and in older ages. And mange was common skin disease in draft horses and donkeys which was caused mainly by psoroptic mite.

REFERENCES

- Al-Ani, F. K.; Younes, F. A. and Al-Rawashdeh O. F. (2002)** : Ringworm infection in cattle and horses in Jordan. *Acta Vet Brno*;71:55-60.
- Awad W. S. A. (1995)** : Some studies on some infectious skin diseases in animals. M.V.Sc Thesis (Infectious diseases) Cairo, Vet.university.
- Bentlinck-Smith, J.; Padhye, A. A.; Maslin, W. R.; et al.; (1989)** : Canine pythiosis-isolation and identification of *Pythium insidiosum*. *J Vet Diagn Invest* 1:295-298.
- Cabañes, J. F. (2000)** : Dermatophytes in domestic animals. *Revista Iberoamericana de micología Apdo.* 699, E-48080 Bilbao (Spain).
- Carter, G. R. and Cole, J. R. (1990)**: Diagnostic procedures in veterinary bacteriology and mycology, 5th edition. Academic press, Inc.
- Chermette, R.; Ferrelro, L. and Guillot, J. (2008)** : Dermatophytoses in Animals. *Mycopathologia* 166:385-405.
- Chiers, K.; Decostere, A.; Devriese, L. A. and Haesebrouck, F. (2003)** : Bacteriological and mycological findings, and in vitro antibiotic sensitivity of pathogenic staphylococci in equine skin infections. *Veterinary record.* 152 (5):138-141.
- Chiers, K.; Decostere, A.; Devriese, L. A. and Haesebrouck, F. (2003)** : Bacteriological and mycological findings, and in vitro antibiotic sensitivity of pathogenic staphylococci in equine skin infections. *Veterinary record.* 152 (5):138-141.
- El-Ghareib, S. A. and Khadr, A. M. (2000)** : Analytical, clinical and epidemiological study on some skin diseases in horse with treatment trials. *Assiut Vet. Med. J.* Vol. 43 No. 86.
- El-Kot, A. A. M. M. (1996)**: Some studies on skin affections in equines with special reference to similar group in zoo. PhD Thesis Zagazig, Vet. University.
- Frank, L. A. (1992)** : Dermatophytosis. Cited in current therapy in equine medicine 3, W.b. Saunders Company. Pgs, 698-700.
- Gail, S. A.; Belton, P. and Kleider, N. (1988)** : The hypersensitivity of horses to culicoides bites in British Columbia. *Can Vet J* 29: 718-723.
- Greiner, E. C.; Fadok, V. A. and Rabin E. B. (1988)** : Equine *Culicoides* hypersensitivity in Florida: biting midges collected in light traps near horses. *Medical and Veterinary Entomology* 2: 129-35.
- Grooters, A. M.; Whittington, A.; Lopez, M. K.; Borouhgs, M. N. and Roy, A. F. (2002)** : Evaluation of microbial culture techniques for the isolation of *Pythium insidiosum* from equine tissues. *J Vet Diagn Invest* 14:288-294.
- Littlewood, J. D. (1998)** : Incidence of recurrent seasonal pruritus ("sweet itch") in British and German Shire horses. *Vet Rec* 142:66.
- Manoyan, M. G.; Ovchinnikov, R. S. and Panin, A. N. (2008)** : Occurrence and aetiological pattern of dermatomycoses in horses. *Veterinary Dermatology, Topic 10 : Equine Dermatology.* 19 (Suppl. 1), P-53.
- Mahmoud, A. L. E. (1995)** : Dermatophytes and Other Keratinophilic Fungi Causing Ringworm of Horses. *Folia Microbiol.* 40 (3), 293-296.
- Osman, S. A.; Hanafy, A. and Amer, S. E. (2006)** : Clinical and therapeutic studies on mange in horses. *Veterinary Parasitology* 141, 191-195.

Pascoe, R. R. R. and Knottenbelt D. C. (1999) : Manual of Equine Dermatology. W.B. Saunders Co, Philadelphia.

Pereira, D. I. B.; de Oliveira, L. S. S.; Bueno, A.; Cavalheiro, A. S.; Schwendler, S. E.; de Azevedo, M. I.; Júnior, J. C. E.; Aguiar, L. C.; Santurio, D. F.; Santurio, J. M. and Alves, S. H. (2006) : Outbreak of *Trichophyton equinum* var. *equinum* in horses in the south of Brazil. *Ciência Rural*, v.36, n.6, P. 1849-1853.

Pilsworth, R. C. and Knottenbelt D. (2007) : Dermatophytosis (ringworm). *Equine Veterinary Education*, 19, 3, 151-154.

Petrikowski, M. and Bourdeau, P. (1995) : Etude d'une population de chevaux atteints de D.E.R.E. en Bretagne. *Point Vét* 27:217.

Quinn, P. J.; Carter M.E., Markey B.K. and Carter G.R., (1994): Clinical veterinary microbiology. Mosby year book Europe limited.

Radostitis, O. M.; Gay, C. C.; Hinchcliff, K. W. and Constable, P. D. (2006) : *Veterinary Medicine*, 10 th Ed., ELSEVIER, p 1476-1478.

Rebel, G. and Taplin, D. (1970) : *Dermatophytes with their recognition and identification*. University of Miami press, Coral Gables, Florida.

Scott, D. W. and Miller W.H., (2003): *Equine Dermatology*. Saunders, Elsevier Science (USA).

Spormann, L.; Busing, K.; Schrodli, W. and Kruger, M. (2008) : Investigations of the occurrence of *Trichophyton* spp. in skin disorders in horses. *Praktische-Tierarzt*. 89 (12) : 1014-1018.

Stannard, A. A. (2000) : Alopecia in the horse-an overview. *Veterinary dermatology*. Blackwell science Ltd: 11, 191- 203.

Takatori, K.; Ichijo, S.; Tatsuo, K. and Tanaka, I. (1981) : Occurrence of equine dermatophytosis in Hokkaido. *Jpn. J. Vet. Sci.* 43, 307-313.

Traub-Dargatz, J. L.; Salman, M. D. and Voss, J. L. (1991) : Medical problems of adult horses, as ranked by equine practitioners. *J Am Vet Med Assoc* 198:1745.

Van Der Haegen, A.; et al.; (2000) : Les affections cutanées allergiques 1- la dermatite estivale récidivante. *PratVét Equine* 32:15.

Yahyaei, M. and Ebrahimi, M. M. (2000) : Survey on horse dermatophytosis in Golestan, Iran. *Archives-of-Razi-Institute*. 137-141.

Zukerman, I.; Yeruham, I. and Hadani, A. (1992) : An outbreak of ringworm (*Trichophytosis*) in horses accompanied by human infection. *Israel J.Vet.Med.*, 47,34-36.

الملخص العربي

الأمراض الجلدية فى الخيول مع دراسة معدل إنتشارها
والعوامل المساعدة على ظهورها فى مصر

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قسم أمراض الباطنة والأمراض المعدية والأسماك - كلية الطب البيطرى - جامعة المنصورة

تهدف هذه الدراسة إلى قيد معدل إنتشار الأمراض الجلدية المختلفة فى الخيول ودواسة العوامل المؤثرة على ظهورها خلال عام واحد من فبراير 2009 إلى فبراير 2010 ، و كانت 267 (8.86%) حيواناً من الخيول التى تم الدراسة عليها تعاني من الأمراض الجلدية الآتية : القراع (3.52%) والبيثيوزيس (0.3%) والالتهاب الجلدى البكتيرى (0.36%) والجرب (1.46%) والهالبرونيما الجلدى (0.27%) والسويت إيتش (2.19%) والحساسية الناتجة عن القراع (0.13%) والحساسية الجلدية (0.2%) والأرتيكاريا (0.17%) والبهاق (0.2%) والباييلوما (0.07%)، وكان معدل إنتشار القراع مرتفعة فى الخيول العربية على الرغم من النظافة والرعاية الجيدة مقارنة بخيول الجرب التى تظهر فيها حالات متفرقة، وقد حدث هذا المرض بنسبة إنتشار عالية فى الأعمار الصغيرة وفى فصل الخريف، وقد تم عزل الفطريات المسببة لهذا المرض وكان الأكثر شيوعاً بنسبة من الفطريات المعزولة ويليها *M.canis* بنسبة 29.3% وأيضاً تم عزل *M.gypseum* و *T.mentagrophytes* و *T.tonsurans* و *M.audouinii* . وأيضاً السويت إيتش حيث كانت نسبة الإصابة فى الخيول مرتفعة فى موسم الصيف، وعدد من الخيول المصابة بالمرض ترتفع مع الزيادة العمرية، وفى هذه الدراسة تم تشخيص معظم حالات الجرب فى خيول الجرب والحسير مع إرتفاع نسبة الإصابة فى فصل الشتاء، ولم يلاحظ أى فارق فى السن فى حدوث الجرب فى الخيول، وكان *Psoroptic mange* الأكثر شيوعاً فى الخيول.

الكلمات المفتاحية : الأمراض الجلدية، القراع، السويت إيتش، الجرب، الخيول، الحصان العربى.