



Some skin affection in New Valley Governorate

Galbat S. A.

Department of Animal Medicine, Faculty of Vet. Med. New valley University, Egypt

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ABSTRACT

During the veterinary convoys that toured the centers and villages of the New Valley in 2017 and after clinical examinations of animals many skin problems are observed in animals. After examining more than 250 cows, 120 goats, 73 sheep, 12 of equine, and five camels, it was found that there are various skin problems in more than 30% of the mentioned numbers, while more than 50% suffer from other disease. Approximately 20% of the animals are in an apparently healthy. By clinical examination of animals showing skin symptoms, it was found that 50% of them suffer from external parasites such as ticks, lice, and fleas, while there were 17 cases of mange, 30 cases of Alopecia, 25 cases of dermatitis, 4 cases of photosensitivity and 8 allergic cases. There were also 12 cases of lumpy skin disease nodules, 8 cases suffering from warts and skin papilloma. A camel suffers from saddle ulcers, and the other two suffer from mange. Two cases of cows suffer from insect pit, which led to the presence of traces of ulcers on the back and the top of the tail. Our studies directed to identify possible causes of skin problems in New Valley and try to prevent and control its spreading with specific treatment.

Keywords: skin, affection, New valley, clinical examinations

1. Introduction

The existence of various skin diseases (Demodicosis, Dermatophillosis, Sarcopites and psoroptes manges, ticks and lice infestations affecting cattle, sheep and goats are frequently reported (Radostits *et al.*, 2002).

Economic losses are related to the occasional mortalities, culling and the cost of treatment and the preventive measures (Yacob *et al.*, 2008).

(Demodicosis) recorded spread in the previous study in ruminants' cattle, sheep and goats were 1.88% in cattle, 1.33% in sheep and 1.02% in goats and the prevalence of demodicosis was reported in cattle range from 0.42% in Nekemte region (Regassa, 2003).

In the previous study the spreading of fleas' infestation were recorded 7.9% in sheep and 1.5% in goats in Berchutessfa (2009).

This prevalence which obtained was low in sheep and high in goats. Such difference of prevalence may be due to the health care of animals.

Mange is a contagious skin disease, characterized by pruritic, crusty dermatitis and hair loss, and caused by a variety of parasitic mites burrowing in or living on the skin. The English term is called 'itch', 'scab', or scabies' for mange (Pangui, 1994). And in French is 'la gale' Pangui, (a term that should be reserved specifically for mange caused by *Sarcoptes scabiei*).

Hair loss and crusty or scaly skin are the most apparent clinical signs of mange. Differential diagnoses with a possible case of mange, including bacteria, fungi, insect bites, mechanical abrasion, irritating plants, etc. scrapings should be taken from the edge of the lesion, from obviously pruritic locations, and from where there are thick, crusty flakes. Skin scraping taken by holding a scalpel blade or other sharp instrument at a right angle to the skin and scraping off the outer surface of the skin. A

drop of glycerol or mineral oil may be placed on the blade to help hold the skin scrapings during the procedure. Skin scraps should be placed in sealed containers (e.g. empty, clean salve tins; stoppered

Bovine Digital dermatitis is a superficial dermatitis of the digital skin of domestic cattle that can be very painful, causing severe lameness in affected animals (Cheli and Mortellaro 1974; Blowey and Sharp, 1988). Digital dermatitis can affect both beef and dairy herds; dairy cattle estimates have been found to be between 20-30% in the UK and USA (Brown *et al.*, 2000; Cramer *et al.*, 2008; Barker *et al.*, 2009) and 4% in beef cattle populations (Brown *et al.*, 2000). The sheep (*Ovis aries*) manifestation of DD, known as CODD, has been found to have a prevalence of 25% in some sheep flocks (Kaler and Green, 2008),

The detrimental effects of lameness on productivity with its high incidence make lameness in dairy cattle of large economic importance (Enting *et al.*, 1997)

The most common infectious causes of sheep lameness are footrot and interdigital dermatitis (ID), also known as scald (Grogono-Thomas and Johnston, 1997).

Foot rot is the main cause of 90% of lameness in sheep (Kaler and Green, 2008). Footrot is a highly contagious disease affecting the skin between the digits (interdigital skin) of a hoof resulting in lameness. Foot rot is characterized by two pathological forms: interdigital skin inflammation, ID, and separation of the hoof horn from the sensitive underlying tissue, severe footrot (SFR) (Beveridge 1941; Egerton *et al.*, 1969 and Witcomb *et al.*, 2014).

All cattle are susceptible to BDD, although some research suggests that first lactation cows are specifically at risk (Brentrup & Adams 1990 and Frankena *et al.*, 1991).

Among skin diseases, the ectoparasites incidence was 26.47% 42.28% 37.73%, and for sheep, goats and cattle respectively (Yacob *et al.*, 2008).

Alopecia areata has been reported in a cow (Paradis *et al.*, 1988).

Pet Animals (dog, cat), farm animals (cattle, horse, sheep, goat, rabbit, pig), wild animals (deer, elk), rodent (mice, rat, hamster) and bat can be a carrier of demodex (Jarmuda *et al.*, 2012).

Alopecia is a loss of hair from the head or body. Alopecia is one of the most common complaints among all patients consulting a dermatologist. There are many type of hair loss with different symptoms and causes. The most common forms of non-scarring alopecia are telogen effluvium, androgenic alopecia, and alopecia areata.

The patho physiology of such disorders may include nutritional, infectious, autoimmune, congenital, or environmental causes. Alopecia areata (AA) is a relatively non scarring common patchy hair loss condition (França, 2013; Puri, 2013; Otberg 2011).

Ringworm infection is medically known as dermatophytosis Caused by dermatophytes fungi (Ahmed, and Saber, 2008). Dermatophytes are group of morphological and physiological related molds that colonized keratinized tissue (skin, hair and nails) of man and animals. The Colonization process is associated by the release of different photolytic and other enzymes by which makes inflammatory responses in the host resulting in dermatophytosis (Rippon, 1996; Gitao *et al.*, (1998). It is a common superficial fungal infection Kern, (1985). It's an infectious disease of animals that causes great economic losses (Al-Ani *et al.*, 2002). Dermatophytes are keratinophilic fungi that are able to invade the stratum corneum of the skin and other keratinized structures (Francisco, 2000). On affected animals, the observed lesions were alopecia and/or circumscribed grayish-white, crusty, raised lesions in neck, head and chest area (Osman *et al.*, 2002). Dermatophyte infection may range from mild to severe (Weitzman and Summerbell, 1995).

Yang animals are affected in several spots around the eyelids, face, neck, and ears, Adult cattle, when affected, have more generalized lesions on the face, neck, trunk, and tail region. Spread of ringworm occurs through body contact and instruments such as brushes or blankets used on an infected animal and then used on other animals. This problem can infect humans very easily, it is important public health problem for veterinarians and farm workers that handle affected animals (Weitzman and Summerbell, 1995).

Warts, or fibropapillomas, are skin tumors that occur in calves between 4 to 24 months of age. The tumors are caused by infection of the skin with the bovine papilloma virus. These are contagious through direct contact especially at sites of skin abrasion or injury (França, 2013).

1.1. Photosensitization:

Photosensitivity in animals is defined as a severe dermatitis that results from a rise of the reactivity of skin cells and associated dermal tissues due to exposure to sunlight, following contact or ingestion of plant pigments or secondary products that are light reactive (Gupta, 2012; Rowe 1989). Photosensitivity occurs in animal cells as a reaction caused by a light absorbing molecule, (Gupta, 2012; McKenzie 2012; Spikes, 1989). This reaction is most severe in non-pigmented skin which exposed to light due to its less protected (Knight and Walter, 2001). Photosensitization is not equivalent to 'sunburn' although its appearance can be superficially very similar. Sunburn is caused by long exposure of normal skin to damaging ultra violet rays, photosensitivity manifested as a rapid reaction of cells in the skin to both visible and ultra violet irradiation through stimulation in the associated light spectrum. Both ultra violet and visible irradiation can cause photoexcitation of light reactive molecules in plants resulting in photosensitivity. , sunburn typically results from excessive ultra violet exposure (Smith *et al.*, (2012).

Primary photosensitization when phototoxic plant-produced compounds or their metabolites become bioavailable within the animal after ingestion, or become localized in the cellular layers of the skin. This may be due to direct contact with the plant or from ingestion and dissemination in the herbivore to dermal tissues via absorption from the gut and dissipation in the circulatory system (Gupta, 2012).

Secondary photosensitization occurs due to either acute or chronic liver damage in the affected animal when porphyrin and derivatives are not cleared by the damaged liver (Gupta, 2012; Campbell, *et al.*, 2010).

Animals with thin coat or light-colored will also be more affected than their pigmented or thick-coated counterparts (Bourke 2003; Bourke and White, 2004).

1.2. Lumpy skin disease

It was first reported from Ethiopia in 1983 Mebratu, *et al.*, (1984), and in Egypt in 1988 House, *et al.*, (1990). Lumpy skin disease was recorded for the first time outside Africa especially in Madagascar in 1989, Lumpy skin disease was reported again in Egypt Salib and Osman (2011).

All ages of cattle and both sexes are susceptible to infection (Salib, and Osman, 2011) Arthropods are responsible for mechanical transmission of the infection (Carn, and Kitching, 1995). The clinical signs and pathology of LSD in naturally and artificially infected cattle are well documented (Burdin and Prydie, 1959; Henning, 1956, Macdonald, (1931) Morbidity rates of five to 45 per cent on affected farms is usual while mortality rates may be as high as 10 % even among indigenous cattle. Animals infected had a febrile response one to two weeks after exposure to the virus (Babiuk *et al.*, 2008; Tuppurainen *et al.*, 2005). Animals remain febrile for four to 14 days, during which time excessive salivation, lachrymation and a mucoid nasal discharge are evident.

Skin nodules, the characteristic feature of the disease, usually appear two to five days after the initial febrile response involve both the skin and subcutaneous tissues and sometimes even the underlying musculature. The size of the nodules is usually fairly uniform but several nodules may fuse to form large, the number of nodules may range from a few to several thousand in severely affected animals. Henning, (1956) in most cases, nodules are particularly noticeable on the perineum and the vulva (Weiss, 1968).

The general objective of the study could be to identify the skin diseases of farm animals (cattle, sheep goat, equine and camels) in New Valley Governorate and to recommend possible control measures.

2. Material and Methods

Collected samples after cleaning with a cotton swab by scraping the lesion using sterile scalpel blade, Skin lesions impeded in ethyl alcohol, and put into sterile Petri dishes. The collected samples were exposed to microscopical examination with 20 % KOH preparation (Koneman, and Roberts 1985).

2.1. Methodology

Detailed clinical examination for the presence of skin diseases and when skin lesion are manifested the case history were taken from owner and skin samples were taken from at least two sites

covering the sufficient depth peripheral edges. Examination of Each species for one type of skin diseases infection skin scraping samples such as hair specimens, pustules and externally visible parasites are collected and exposed to laboratory confirmation. Viral infection like lumpy skin diseases, were diagnosed based on their occurrence in stock and then observable clinical picture such as wide spread skin lesions on and around the muzzle, ears, scrotum and udder.

Laboratory confirmation Skin scraping from suspected cases of mange are collected and preserved in 10% formalin after addition of 10% KOH to the specimen; mites may be released from scabs and crusts before examination following procedures indicated (Francisco, 2000). The identification of the mange mite's species is based on the morphological characteristics described. Lice and fleas are collected by coat brushing of the affected animals and identification of lice by their characteristics lice described by Weitzman and Summerbell, (1995). Ticks were collected from infestation sites by ethyl alcohol (70%) then preserved in 10% formalin and dispatched to laboratory identified in genus level using their characteristics light microscope described (Francisco, 2000)

3. Results

After clinical examinations of animals many skin problems are observed. After examining more than 250 cows, 120 goats, seventy-three sheep, 12 of the equine family, and five camels, It was found that there are various skin problems in more than 30% of the mentioned numbers While more than 50% suffer from other disease problems of a variety other than skin diseases Approximately 20% of the animals are in an apparently healthy condition By clinical examination of animals, it was found that 50% of them suffer from external parasites such as mites , ticks , lice and fleas , while there were skin symptoms as 17 cases of mange , 30 cases of Alopecia, 25 cases of dermatitis, 4 cases of photosensitivity and 8 allergic cases There were also 12 cases of lumpy skin disease nodules , 8 cases suffering from warts and skin papilloma A camel suffers from saddle ulcers, and the other two suffer from mange And two cases of cows suffer from insect pit, which led to the presence of traces of ulcers on the back and top of the tail. The results explained in table's no. 1, 2, 3 and in a fingers no. 1, 2, 3 with explaining in picture no. 1

Table 1: Some skin affection in new valley governorate

Total animals	460
Other diseases	230
Skin affections	138
Clinically normal	92

Table 2: Some skin affection in new valley governorate

Cattle	250
Sheep	73
Goats	120
Equine	12
Camel	5

Table 3: Some skin affection in new valley governorate

External parasites	51%	235
Dermatitis	5.4%	25
Suspected Mange	3.75%	17
Alopecia	6.5%	30
Warts Multiple papilloma	1.7%	8
Hypersensitivity	1.7%	8
mycotic infection	1.5%	7
Lumpy skin	2.6%	12
Saddle sure	.21%	1
Photosensetization	.86%	4
Lose of pigmentation	1.08%	5
Parakeratoses	.65%	3
Insect pit	.43%	2

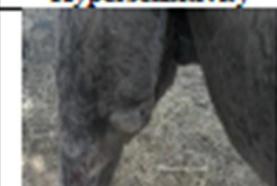
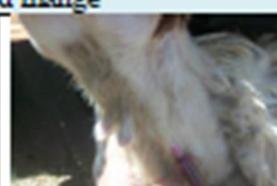
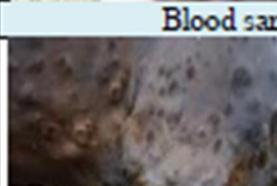
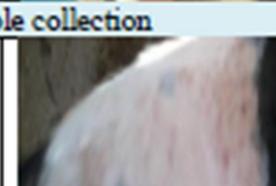
Some skin affection in new valley governorate			
			
Clinical examination of animals			hypersensitivity
			
Multiple papilloma			Parakeratosis
			
Dermatitis	Dermatitis	Equine mycotic infection	Alopecia
			
Dermatitis	Lose of pigmentation	Hypersensitivity	Alopecia
			
Saddle sore	Suspected mange		External parasites
			
Dermatitis	Photosensitization	Blood sample collection	
			
Lumpy skin			Insect pit

Fig. 1:

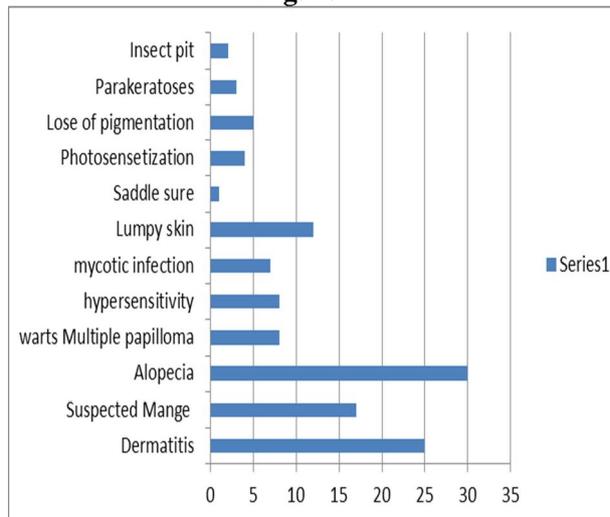


Fig. 2:

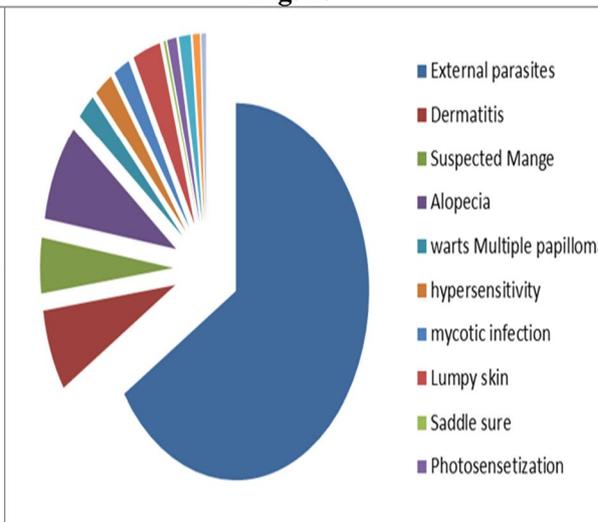


Fig. 3:

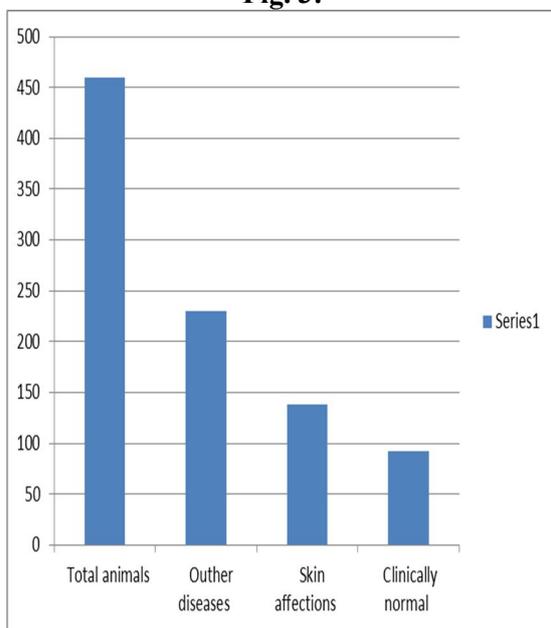
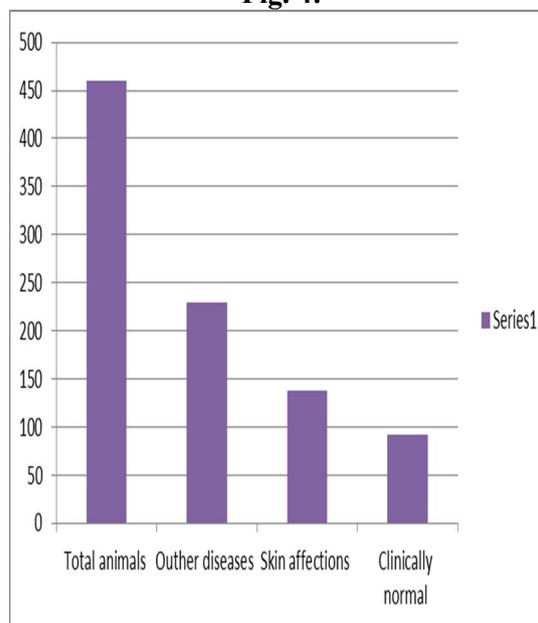


Fig. 4:



4. Discussion

This study explained that the diseases caused by parasites, bacteria, viruses and others were common in and around new valley governorate. All prevalence of their problems is more than 51% in cattle, sheep, goats, camel, and equines collectively. The high prevalence of skin diseases in animals may be associated with nutritional and climatic stress.

The presence of external parasites and bad management of nutrition and bacterial or viral infections were the main factors of skin problems. Young animals were more affected than adults.

Among skin diseases, the prevalence of external parasites was 50%, for cattle, sheep and goats. This obtained overall prevalence was relatively higher than the previous studies (Yacob *et al.*, 2008) this difference may be due to climatic condition and health care of the animals or preventative measures used to prevent and treatment skin diseases.

Tick was infest cattle, sheep, camel and equin. When compare to the previous study this prevalence was higher than reported Yacob, *et al.*, (2008) may be due agro climate variation and season of the study.

The prevalence of mange was 3.75%, in cattle, goats, sheep and camel, the mange mite infestation (Demodicosis) prevalence recorded in the previous study in ruminants' cattle, sheep and goats were 1.88% Regassa (2003)

Such difference may be due to climate condition, health care awareness of develops in the livestock producers brought to the clinic when health problems occurs and treated early.

Flea infestation was one of skin diseases in this study, in all ruminants with a prevalence of 15 % in sheep and goats.

In the previous study the prevalence of fleas' infestation were recorded 7.9% in sheep and 1.5% in goats in Berchutesfa (2009). This obtained prevalence was higher than the previous study but is low in sheep and high in goats. Such difference of prevalence may be the health care of animals or climate changes.

In the present study the prevalence of lumpy skin diseases in new valley governorate was 2.6%, this prevalence was low compared to the previous report. Whereas lumpy skin diseases was rarely observed in epidemic areas

This may be climate changes, season of study or etiological agent access to enter to the host. Other skin diseases which cause skin damaged or reduction or skin and hide quality (such as wart, were observed and manifest animals for different purpose traditional treatment, corresponding cause of high damage of skin and hide or reduction of skin or hide quality. Also the study was limited to a group of animals brought to veterinary convoys, the prevalence of different skin diseases in these domestic ruminants suggest the importance of these diseases in reducing the production and productivity of domestic animals .

New valley governorate is one of the biggest animal producing site, supply skin and hide producing industry in Egypt. The potent risk of this study site in dissemination of skin diseases should be highlighted. Considering the importance of skin and hide as main source of income to the country,

The prevailing skin diseases and external parasites mainly in different age groups of these domestic animals managed in and around New Valley Governorate. Required attention in to minimize the spread of infestation and increase the economic income gaining of farmers and small scale holders whose bread live is dependent on animal raring (Sheba Tannery, 2005).

5. Conclusion and Recommendations

External parasites such as Tick infestation, lice, flea, mange, ring worm and viral diseases as lumpy skin diseases, are the most important skin problems in New Valley, but most of External parasites and others skin diseases can be easily controlled by proper management. Skin production is one of important sources of economic income, tell now the amount of skin refused is increase and their quality is low due to the failures of management or poor skin diseases control and health care of these animals.

To improve skin and hid production with high qualities proper epidemiological measures of the skin diseases should be followed to identify most of skin diseases and their predisposing factors in new valley governorate.

Efficient control measures must be followed. This control program should be based on food epidemiological information's of the disease in new valley. Involve farmers, Tannery, veterinarian and Government. The ministry should educate programs for animal producers' in the new valley to improve control of skin diseases and animal management program.

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