Samples were centrifuged at 1800 G for 10 minutes. The serum samples were stored at –70°C until analysis, which was performed within 2 weeks of sample collection. Serum BALP activity was quantified by heat inactivation method. All values were presented as mean ± SD. Data were analyzed using Student's t-test. Serum BALP activities were significantly higher in cows suffering from sole ulcer than those in healthy cows, 33±7.82 and 26.57 ± 9.55 respectively p<0.05. BALP is considered the most accurate marker of bone metabolism. However, the published information available for serum levels of BALP in dairy cows is scarce. Based on our findings, sole ulcer increases serum BALP activity in dairy cows. Increased BALP activity has been reported in a wide range of bone and cartilage diseases of human and animals. Considering the possibility of bone involvement in cows with sole ulcer, increased serum BALP activity could be expected in such cows. However, bone involvement is not a certain outcome of sole ulcer. In this case, lameness and lack of natural distribution of weight may stimulate bone tissue osteoblasts to synthesis more enzyme. However, it seems that for introducing BALP as a reliable biomarker for sole ulcer diagnosis, the relationship between enzyme activity and disease severity should be investigated.

**Hoof Morphometry before and after hoof trimming in Donkey**

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Hoof trimming should be done every 4 to 6 weeks on horses that are used barefoot. The object of proper trimming is to make the shape of the foot, the angle of the foot axis and the foot level as nearly normal as possible. The foot should be trimmed so that pastern and hoof axis form an unbroken line. Two population of the donkeys (7 and 10) with very long toes were referred for hoof trimming. Therefore The objective of this study was to find out the normal dimensions of the foot in the Donkeys after a proper trimming protocol. Methods: The donkeys were restrained and the dimensions of the hooves were measured before hand. Then the feet were trimmed starting from the toe then from the toe to the lateral and medial side up to the heel area. Each frog was cleaned, trimmed from the apex to the heel. The sole was given similar attention as the sole of the horses. The wall of hoof was trimmed until the white line appeared in white moist rubbery appearance and the angle of the sole and dorsal hoof wall as well frog was almost similar to that of the horses. The average toe length before trimming for front legs were 12.22± 4.1 cm and for the hind legs were 8.3± 4.2 cm. but after trimming the average length of the cranial hoof wall for front leg was 5.6± 2.3 cm and for hind leg was 6.1± 1.4 cm. The average heel length for front leg was 3.4± 1.4 and hind leg was 3.8± 1.3 cm. The animals use to walk with great difficulties before trimming, but after trimming they walked in a very comfortable manner. Some farriers prefer to trim from the heel down to the toe, but many prefer to start from the toe upward to the heel area. In some cases there was sole lesions such as hemorrhage in three cases which was diagnosed after trimming. Regardless of the techniques used, the donkeys should be trimmed according to their work type and at least every 6 week to prevent long hoof induced lameness and injury.

**Interdigital phlegmon in dairy cows**

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Interdigital phlegmon is a causative reason for cow lameness. It makes Interdigital swelling, fissure and foul smell. Some common predisposing factors of Interdigital phlegmon are mechanical trauma, wet environmental conditions and other diseases that damage skin and prepare the anaerobic condition for causative bacteria. This current study was done during a nine month period in a free stall dairy herd with 2000 milking cows. Hoof trimming and inspections were done in a regular basis by expert trained hoof trimmers. Gait of the cows was scored by a five point scoring system on a monthly basis and treatment was done by surgically removing of the swelled tissue. Total of 27 Interdigital phlegmon were recorded, as 10 (37%) in front feet and 17 (63%) in rear feet. Locomotion scores of the cows was increased from two months before recording (2.46 ± 0.96), reach to the highest level at the month of lesion detection (3.46 ± 1.45), and decreased till two month after ward (1.93 ± 1.06) (p<0.05). The average days in milk in affected cows were 85. Seventy nine (79.1) percent of affected cows were not pregnant and twenty (20.8) percent of them were pregnant. The herd average of conception in these nine months was sixty two (62.7) percent. Milk yield of the affected cows increased from the month of lesion detection (36.68 ± 10.28) till three month afterward (41.67 ± 12.44) (p<0.05). Results show possible earlier detection of the lesion by locomotion scoring and removing the lesion in appropriate time can save milk yield. A bacterial cause is a basis for the pathogenesis of this condition, anyway some
Predisposing factors like change in weight distribution among digits, micro cracks in interdigital space and possibility of an anaerobic condition in interdigital region may play a role in this acute disease. Increasing of locomotion scores may be a result of the effects of predisposing factors.

"Lameness and changes in blood cells: changes in blood leukocytes of cows lame compared to healthy cows"

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In this study, 42 patients with 30 beef cattle healthy (as controls) were selected, blood components in atients and healthy control cows were measured by standard techniques. Reduced (0.05–p) significant number of red blood cells, hemoglobin and cell volume in cattle, compared with control patients there. Number of white blood cells (leukocytes), especially neutrophils and monocytes in cattle patient was much higher than normal. But the number of lymphocytes and eosinophils between the two groups were almost identical. Lameness in dairy cattle disease is damaging to farmers, which will lead to reduced production. It also causes pain and discomfort of animals that otherwise survived the damaging effects of treatment and care offers. The data of this study showed that blood samples were taken from the jugular vein and was shed into sterile test tubes containing the anticoagulant substance (blood samples from healthy cows were used as controls). RBCs and WBCs, also leukocytes, were compared. In the controls, the number of red blood cells, hemoglobin, and PCV were measured and compared to other samples. Significant reductions in the amount of red blood cells and hemoglobin, the patient group than the control group was observed but in contrast the number of white blood cells, as well as neutrophils and monocytes in the patient group was increased. In addition, more careful examination and realized that despite the increased number of white blood cells, the number of lymphocytes and eosinophils remained almost constant. In this study anemia Normochromic Normocytic also became clear that it seems to cause cytokine association with inflammation and is haptoglobin. Increased neutrophils and monocytes may also be due to inflammatory response and stress is caused by pain.

<table>
<thead>
<tr>
<th></th>
<th>RBC (10³/μl)</th>
<th>Hb (g/dl)</th>
<th>PCV (%)</th>
<th>WBC (10³/μl)</th>
<th>Neutrophil (%)</th>
<th>Monocyte (%)</th>
<th>Eosinophil (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lame</td>
<td>6.42</td>
<td>9.86</td>
<td>29.5</td>
<td>13.24</td>
<td>84.23</td>
<td>3.2</td>
<td>.98</td>
</tr>
<tr>
<td>Healthy</td>
<td>7.92</td>
<td>11.32</td>
<td>34.12</td>
<td>8.19</td>
<td>58.22</td>
<td>1.98</td>
<td>1.38</td>
</tr>
</tbody>
</table>

Morpho – Pathological study of white line zone injuries on solar surface of digit in dairy cattle

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White line disease has been defined as a clinical entity resulted with increased culling rates in large dairy operation in Iran. Although laminitis is generally regarded as the primary cause for the pathological changes within the white line region of the sole, other contributing factors should be considered. In this case study cows with white line lesions were identified in one large dairy herd consisting 2800 lactating cows with records of lameness events over a 12 months period (June 2008–2009) in the vicinity of Tehran, Iran. Cows were kept in free stall with sand bedding and lameness evaluation was carried out every other month for the entire period of study using 5 points scoring system by spreecher et al 1997. Close observation of the involved claws was made in the hoof trimming chute following corrective trimming and debridement procedures. The criteria such as hemorrhage at the abaxial sole / white line region in zone 1 and 2, the separation at the sole from the white line at the junction of the sole with the white line in zones 1 and 2 and the complicated abscess in zone 3 served as a basis for the diagnosis. Management of individual white line lesion was carried out and culling was considered in cases of older cows with prolonged lactation and low milk yield. White line lesions were confirmed on 232 of cows with the score of 3 and 4. The mean monthly incidence was 17.10 % (9.55% to 27.14 %) mostly recorded for first lactation cows. More than 75% of lesions were found at outer claw of the hind-limbs and sub-solar abscess in zone 3 progressed to the septic osteitis of the third phalanx with osseous sequestration in 33 cases. Complete recovery was achieved in 82 % of cases following non-irritating topical ointment therapy with application of either bandage or foot block. This study showed that laminitis- associated white line disease response well to appropriate therapy and correct recording can play an important role for lameness prevention strategies in large dairy herds.

Morphometric and radiographic study of proximal sesamoid bones in digits of camels

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