A Preliminary Evaluation Of A Limb Scale For Lameness Detection

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Less weight bearing on a lame limb consider as a rule of thumb that can be measured by several complex methods, including pressure sensitive plates. This study was conducted for a preliminary study of a weighbridge device with four weight plates which was constructed to measure weight in each separate limb. Findings of this measurement may result in early detection of imperceptible and pre-acute lameness in cows. The digital scale was designed with four separate pressure plates, with separate display. The distance between these plates and its area is proportional to the distance of the bovine limbs that was measured previously. The weight on each screen is displayed individually with the unit of measurement of kilograms. In order to evaluate the performance of this weighbridge, in a experimental study, 26 lame cows with known lame limbs were selected in an industrial dairy farm. All cows had previously been examined and treated for lameness in one limb in a way that the limp limbs in these cows were quite clear. The cows were transferred to the weighbridge and simply after fixing on the scale, the weight of each limb was recorded from the display. The mean weight gained on healthy organs was178±19.12 Kg and this number was 104.21±33.98 Kg on lame limbs. The device's ability to record weight in each limb is fully stabilized. One of the main problems of the device was severe shaking in such a way that with each movement of the cow, some weight displacement were recorded between the limbs, which should allow the animal to relax in the scale for a precise measurement. When the two front or rear limbs were lame, the device's ability to estimate limping is somewhat low. This is a preliminary study of the efficiency of this device, which will follow with further evaluations.