

Abb.: Indication of applied substance on the left pastern

“An applied substance leaves a significant outline on the skin, a clearly visible border to the untreated area. And these are exactly the spots we are able to detect, because no such thing happens in nature. Within a square millimetre or a small-sized area on homogenous surface you will normally never find a temperature difference by factor x. Even recently worn bandages or brushing boots we are able to consider in our calculation.”

(Thomas Zimmermann)

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THERMOGRAFIE INSTITUT BERLIN

Veterinary IR-Thermography in use to detect applied substances in doping controls in equitation

According to a press release of the German FN the FEI plans an increased use of thermography in doping controls.

----- WE HAVE THE KNOW HOW -----

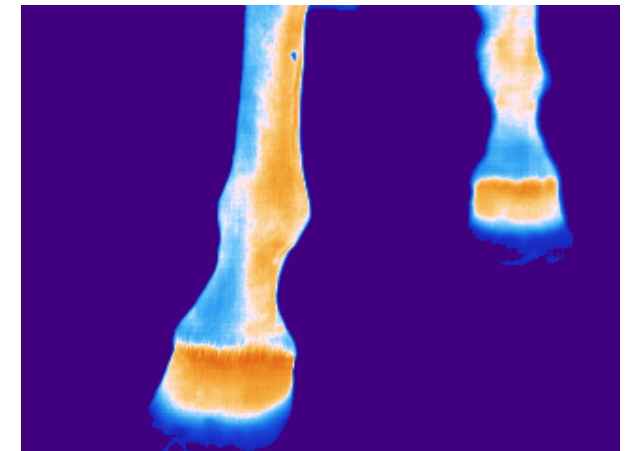
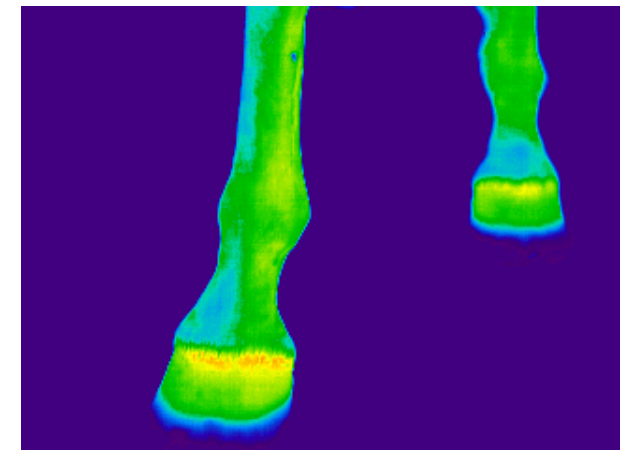


Abb.: Suspicion of indication on both forelegs in different colour schemes without colour- and temperature scale



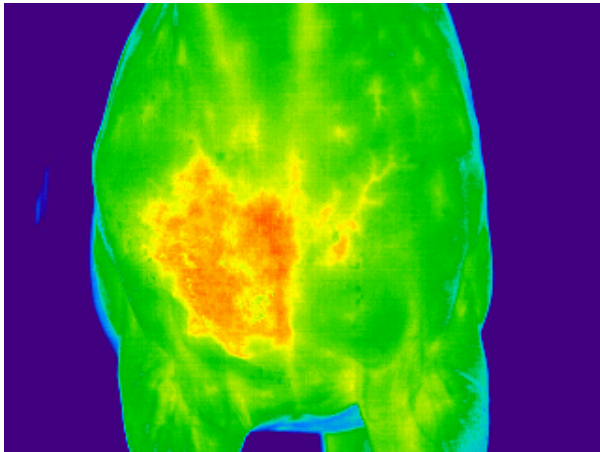
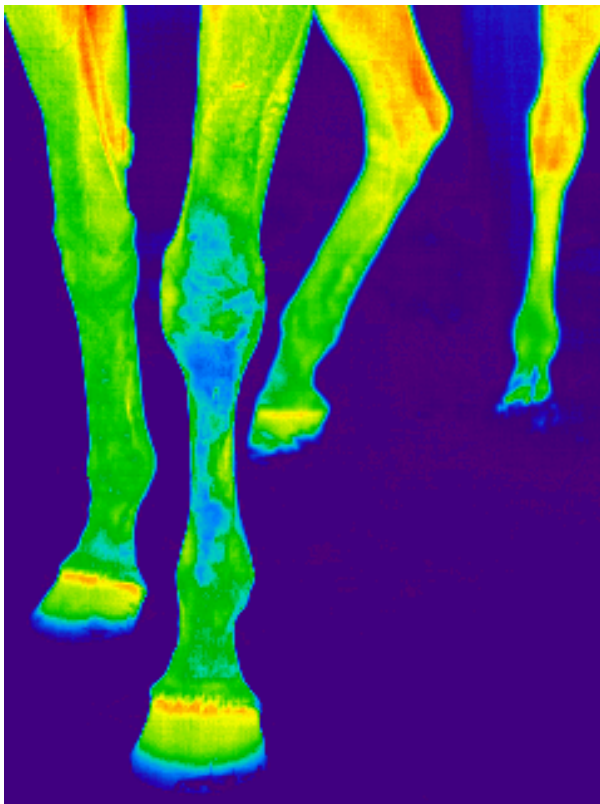


Fig.: Indication of an applied substance with activating depth effect on the chest

Fig.: Indication of an applied substance on the left knee and cannon bone (below).



The Thermografie Institut Berlin has been making thermographic comparison studies between applications in human und veterinary medicine in relation to metabolic qualities, systematics and function since 2004. These are carried out in co-operation with the Freie Universitaet Berlin (Humanbiologische Fakultae, Institut fuer Anthropologie) and the Tieraerztliche Hochschule Hannover (Medizinische Physik, Veterinaermedizinische Fakultae) as well as with the Zoo Berlin and several medical and zoological facilities.

In the framework of examinations of the spectral changes of skin surfaces due to applied substances (per example by sodium lye - „chemical rapping of horses“, anti-inflammatory or pain-relief substances on junctions) these substances are detected with use of infrared technology. The density of the skin surface changes with the application of substances and is measurable by means of infrared thermography. With skin contact every substance causes a specific density change of the surface, which refers to the spectral pattern of a certain substance.

According to the spectral function of the substance - what can show increase as well as reduction of temperature - the measurement is carried out with a precision of 1/100K.

With infrared-imaging these changes in the surface's temperature can be surely detected and directly compared to normal skin temperature areas immediately. The measurement of applied substances is contactless and can be carried out up to a distance of 50 m.

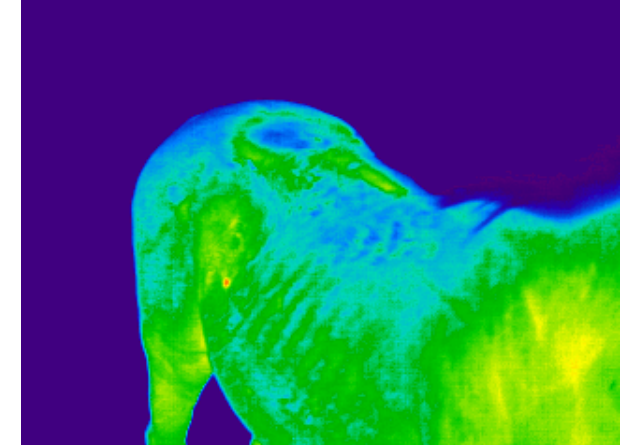
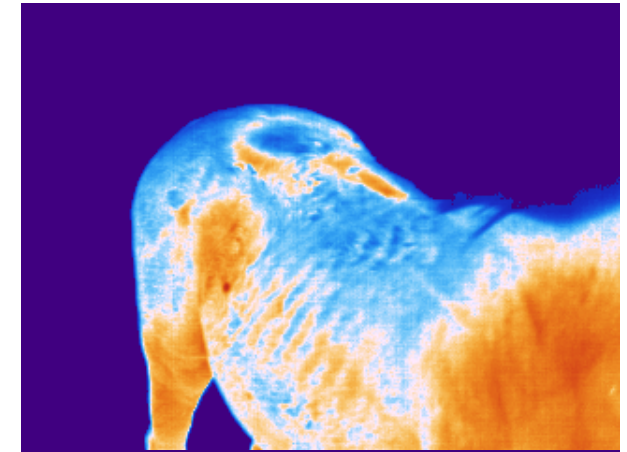


Fig.: Applied substance on the quarters in different colour schemes (above) and with activating depth effect (below)

