Hoof Overgrowth

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| **Location**  | **Cause and Consequence** |
| **Toe** | horn harder at the wall than heel so worn away more slowly from the toe than from the heel therefore, toe generally overgrown. Internally the pedal bone is rotated backwards, thereby putting even more pressure on its rear edge (the flexor tuberosity) and further increasing the risk of sole ulcers. |
| **Lateral Wall** | In some animals the wall of one claw grows faster than the other and starts to curl under the sole. This produces a corkscrew effect at the toe. Corkscrew claw may be a genetic trait or can be a result of coriosis/laminitis. |
| **Sole** | A ledge of horn is commonly seen growing from thesole and extending into the axial space. In some instances it may even overlap the adjacent claw, and may be so pronounced that it becomes the major weight bearing area of the foot. This has importance in the pathogenesis of sole ulcers, as the overgrowth of sole horn is immediately beneath the flexor tuberosity of the pedal bone and in an area whereweight bearing should be minimized. |
| **Disparity in Size** | The lateral claw of the hind foot is often considerablylarger than the medial claw. In the front feet the position is reversed: the medial claw is commonly larger than the lateral claw. |
| **Negative Net Overgrowth** | At housing, and especially when housing and calvingcoincide, heifers invariably undergo a period of *negative net growth*. The rate of hoof horn growth is reduced butat the same time there is a rapid increase in wear, especiallyat the toe. This leads to a shortening and increasedangle in the dorsal wall, plus a thinning of the sole resulting in erosion and exposure of the corium.  |
| **Hardship lines** | Temporary disruptions of hoof formation in the anterior wall lead to circumferential rings of variable thickness known as ‘hardship lines’. When horn production is poor, a groove is formed and in extreme cases results in total cessation of horn formation, leading to a horizontal fissure. Because the dorsal wall is longer than the heel, the hardship lines often run from the sole surface of the abaxial wall, across the dorsal wall to the sole surface of the axial wall. ‘Hardship lines’ can be used to establish the chronology of previous episodes of coriosis/laminitis, and therefore the potential causes of current hoof problems. |