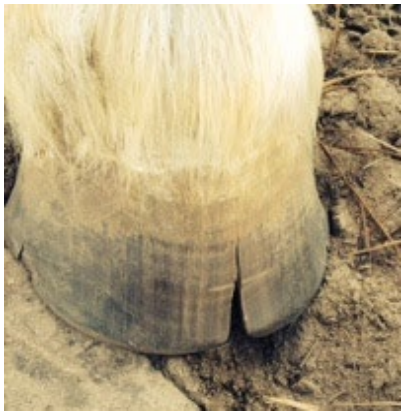
Cracking the Code to Hoof Cracks

Persistent Hoof Wall Cracks

Sand Cracks, Grass Cracks, Toe Cracks, Quarter Cracks plague so many horses that there is an entire segment of the hoof care product industry dedicated to producing products to treat them. A week does not go by that we do not receive a call or email concerning hoof cracks. Just this week I received a call from a horse owner that wanted a second opinion on how the veterinarian suggested treating a persistent toe crack. Apparently she and her trimmer have been battling sand cracks on several of her horses for the better part of two years. In one case the crack had become so bad that the veterinarian prescribed a hoof wall resection be performed (treat instability with removal of that which is meant stabilize?). The owner was ordering Clean Trax, a deep penetrating hoof wash that works exceptionally well in the treatment of infections of the hoof wall. We received pictures and a small history in which to make our assessment. The type of hoof wall defect seen in this case was of no great mystery.

The Cause



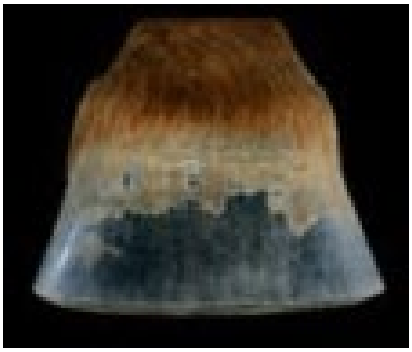
The truth of the matter is that the majority of hoof cracks seen are the result of poor hoof wall matrix development.

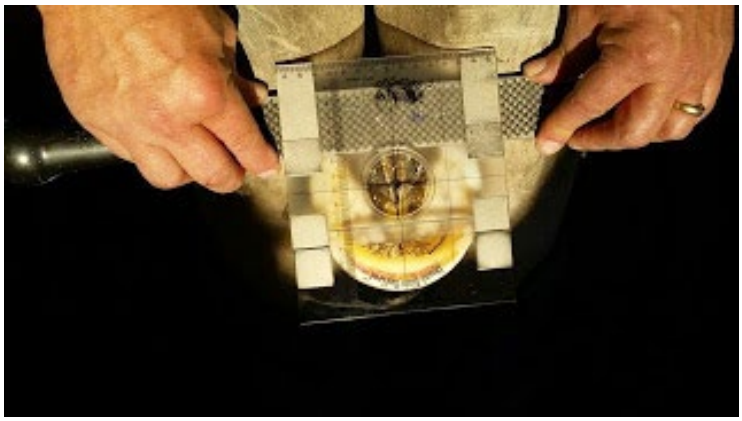
Having a strong understanding of how the hoof wall develops and the function of the hoof wall at any given location in the hoof capsule is paramount to treating hoof cracks. Yes, metabolism and nutrition are important to treating cracks, and for the most part owners of horses with persistent cracks have done their best to address these components.

Then why is it that the cracks persist? I have already answered that; poor hoof wall matrix development. Yes, hoof wall matrix is affected by nutrition and metabolism, but the real culprit in persistent hoof cracks is the failure of the mechanism for the creation of a strong wall matrix. The hoof wall matrix originates at the junction of the coronary band dermis and dermal lamellae. This area is identifiable by the manifestation of the stratum externum (Periople). Roughly speaking it is the top ten percent of the hoof capsule. It is in this area that the tubules produced at the coronary band matrix with the horn developed by the lamellae. The periople aids in slowing the keratinization process allowing for the migration of intertubular horn around and in between the primary tubules. The mechanism that makes this posible is “distortion”. Think of distortion as a kneading process creating the necessary pressures for the development of a healthy matrix.

Wall function is determined by the ratio of primary tubules to that of intertubular horn (laminae derived horn and within the matrix the higher the ratio of tubules, the harder the wall (less resistant to flexion), the lower the ratio the more flexible. So what has this got to do with hoof wall cracks? In many of the cases we see involving sand, grass or persistent toe cracks we have found that the fault has been that the mechanism for the creation of a healthy matrix was simply weak or faulty.

Just this week we met our new neighbor, a new home has just been completed adjacent to our property. The owner is a horse owner who has several horses. She is an avid dressage rider. Naturally the conversation turned to horses and their hooves. According to my new neighbor all of her horses suffer from persistent sand cracks. The horses are stabled about 10 miles from this new property and would be moving here shortly. The owner asked how we prevented sand cracks. We have seven horses on our property here in SW Florida. The environment is less than ideal for horses, being extremely wet most of the year and the pasture is comprised mostly of sand (sugar sand). The environment is identical to the environment our new neighbor has been stabled in for the past several years. Why is it that we don't have problems with persistent cracks, but she does?





The answer in my opinion is quite simple, "Imbalance". When a hoof is trimmed and it is not balanced, the mechanism for the development of a healthy strong matrix is compromised. Couple that with the dubbing of the toe (backing the toe up), cross hatching, or the application of a rigid horseshoe and you have the recipe for failure. For over eighteen years I have been treating sand, grass, and toe cracks successfully without applying shoes, lacing, staples, or acrylics. There are times when there is instability and dynamic stability must be achieved, but that type of stability is not found in acrylics, staples, or rigid shoes.

Treatment

The first step in the treatment of cracks is to achieve dynamic balance of hoof to foot. Balancing to what is called the Live Sole Plane (Axis Plane). You can use the Dynamic Balance Hoof Level to confirm balance; this tool offers a reliable plane of reference.

Once balance is achieved treat infection. I recommend Soaking in Clean Trax, with daily follow up application of Silvetrasol Hoof and Wound Wash. If it is determined that the crack or cracks have resulted in unacceptable instability, then I recommend using Perfect Hoof Wear for several trim cycles.

I have said it more times than I can remember, if the mechanism for producing a healthy Matrix is comprised, then no supplement, drug, or dressing is going to help alleviate hoof wall failures. Sure you can attempt to hold it all together with a horseshoe, uarter clips, staples, acrylics, and a host of other products developed as Band-Aids for the dreaded hoof wall crack, but until the mechanism for the development of a healthy matrix (balanced dynamic distortion) is returned you are simply placing a finger in the dyke so to speak.

Evidence Based

Having been a hoof care professional for over three decades and having graduates in eleven countries all applying the principles of dynamic balance we can say that we have a large sampling of horses that once suffered persistent hoof wall cracks, but no longer do. If your horse is suffering from persistent hoof wall cracks, you may want to investigate Applied Equine Podiatry further by visiting www.appliedequinepodiatry.org