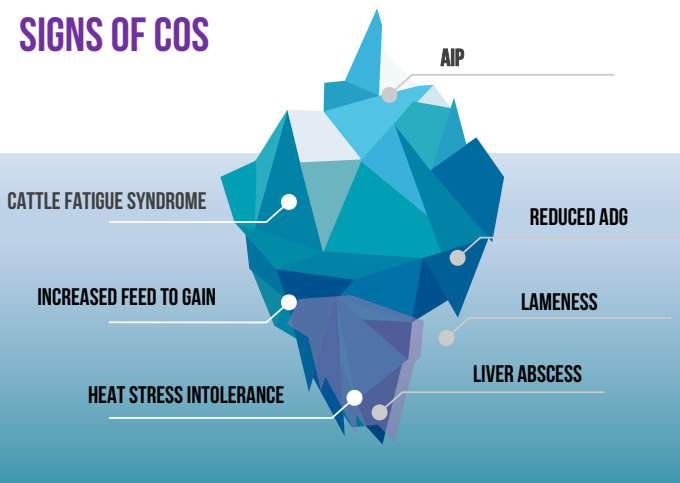


# AN OVERVIEW OF CHRONIC OXIDATIVE STRESS IN FED CATTLE

Chronic Oxidative Stress (COS) occurs more frequently in high performing feedyards. Because it is these yards that push cattle the hardest, resulting in a greater challenge for cattle to maintain their natural metabolic processes.

Cattle with high COS risk metabolic shutdown. Metabolic shutdown then results in a number of clinical and subclinical signs.

## CLINICAL AND SUBCLINICAL SIGNS OF COS



## KEY FINDINGS

- Chronic Oxidative Stress (COS) was present in a 83.9% of cattle tested on the kill floor.
- Acute clinical signs of COS can be reversed.
- Sub clinical signs of COS can be reduced.
- High levels of COS, when allowed to run unchecked, can result in tissue destruction

## CHRONIC OXIDATIVE STRESS

A METABOLIC SYNDROME CHARACTERIZED BY AN ABNORMAL BUILDUP OF METABOLIC TOXINS IN CATTLE DURING RAPID GROWTH AND HIGH ENERGY PRODUCTION.

## TOXIN BUILD UP

- Cells must produce energy to survive.
- Metabolic toxins are 2% of the by-products of energy production.
- Detoxification is dependent on adequate trace minerals
- Cattle have an internal pump to deliver trace minerals necessary for detoxification
- During rapid growth the internal pump reaches full capacity and cannot absorb and transport additional trace mineral
- Toxin production exceeds the trace mineral pump capacity.
- This limits detoxification and causes toxins to begin to build up (Chronic Oxidative Stress).
- Toxins slow growth. Performance levels off and cattle are no longer able to reach their full genetic potential.

# TREATING CHRONIC OXIDATIVE STRESS

Fed cattle are pushed hard to maximize weight gain but this comes at a price... abnormal metabolic toxin build up.

Research indicates it takes 90 days for DuoPort<sup>GPX</sup> to reach full effect, but shorter periods also delivered significant results.

**DUOPORT<sup>GPX</sup> FED THE LAST 60 DAYS (IN ADDITION TO TRACE MINERALS IN THE RATION) SHOWED GAINS OF 15 LBS/HD MORE THAN CONTROLS (.25 LBS/HD/DAY)**

Since May 2016 over 200,000 head have been treated for Chronic Oxidative Stress (COS) fed a continuous rate of DuoPort<sup>GPX</sup> (7 grams/HD/Day) until harvest, in addition to conventional trace minerals in the rations. Below is a composite comparison of treated cattle (10,268 heifers and 15,337 steers) vs Professional Cattle Consultants Central Plains index specific to sex and weight class.

