

ABSTRACTS
*** Author Presenting Paper**

526 Tasco™: Influence of brown seaweed on antioxidants in forages and livestock. V. G. Allen*¹, K. R. Pond¹, J. P. Fontenot², K. E. Saker², C. P. Bagley³, R. L. Ivy⁴, R. R. Evans⁴, R. E. Schmidt², J. H. Fike², and D. B. Webster¹, ¹Texas Tech University, Lubbock, ²Virginia Tech, Blacksburg, ³Sam Houston State University, Huntsville, TX, ⁴Mississippi State University, Prairie.

Increased antioxidant activity in both plants and animals diminishes oxidative stress. Seaweed (*Ascophyllum nodosum*) is a known source of plant growth regulators and application of Tasco™-Forage (a proprietary seaweed-based product) to grasses increased activity of the antioxidants superoxide dismutase (SOD), glutathion reductase, ascorbate peroxidase, and vitamin precursors in several forage grasses. Tasco was applied to tall fescue (*Festuca arundinacea* Schreb.) pastures infected and non-infected with the endophyte fungus, *Neotyphodium coenophialum*. Both monocyte major histocompatibility complex class II expression and phagocytic activity were decreased ($P \leq .05$) in steers due to endophyte infection but this effect was reversed ($P \leq .05$) by Tasco application. Effects on immune function were measured after cross-country transportation to the feedlot and throughout the finishing period. Steers that had grazed the Tasco-treated pastures had higher ($P \leq .05$) marbling scores regardless of the endophyte and this was reflected in higher ($P \leq .15$) USDA quality grades. At slaughter, vitamin E in liver was increased ($P \leq .06$) in steers that had grazed the treated pastures. Color stability and beef shelf-life were enhanced. The mode of action may be at least in part through effects on antioxidant activity including vitamin E. Direct supplementation of Tasco to beef, swine, and horses has provided further evidence of improved immune response and/or increased shelf-life. Tasco may provide opportunities to reduce oxidative stress in plants and animals.

Key Words: Immune function, *Ascophyllum nodosum*, Carcass characteristics