

Climate Change & Forage Production

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Historical records show average annual temperatures are increasing in most parts of the world. Precipitation patterns are also changing where, in general, storm intensities are increasing with drier areas getting drier and wetter areas getting wetter. These changes are primarily driven by increasing carbon dioxide concentrations in the atmosphere due to the burning of fossil fuels. Models predicting future climate trends indicate ambient temperatures will continue to increase along with further changes in precipitation. These changes may increase alfalfa yields as long as adequate water is available to maintain this production. Increased carbon dioxide in the atmosphere can stimulate growth of some crops including alfalfa. In some regions, increased ambient temperature may also be beneficial. In areas where precipitation is increasing, this may also be beneficial; however, higher temperatures increase evapotranspiration which may offset the additional rainfall. In regions depending upon irrigation, the greatest threat to long-term sustainability of the production of alfalfa and other forage crops is water availability. Management changes such as earlier harvests and additional cuttings will be needed to adjust to the changing climate. In regions where precipitation is increasing, more frequent rainfall can exacerbate challenges of field curing hay. Another consideration is changing climate may increase weed and insect pressures. Climate change and related atmospheric changes can have both positive and negative impacts on alfalfa and other forage crops, and these impacts will vary across global regions. Although climate change is presenting challenges to forage production, flexibility in management can provide a sustainable future.