

Climate impacts on crops and turfgrass: Building effective adaptation strategies

Jerry L. Hatfield¹

Keynote Address

Paper summary: Precipitation and temperature are the two primary factors affecting plant growth. These have both direct and indirect impacts on plant growth and productivity and development of effective adaptation strategies will depend upon understanding these impacts and their interactions. The changes in seasonal temperature will determine the rate of plant growth and will affect the performance of cool-season vs warm-season grasses. Effective adaptation strategies for turfgrass will require an understanding of how the changes in climate throughout the year will affect plant response and also the potential pressures from diseases. There are opportunities to enhance turfgrass performance through better understanding of how climate will affect management options.



Speaker Biography: Dr. Jerry L. Hatfield received a B.S. in Agronomy from Kansas State University in 1971, a M.S. from the University of Kentucky in 1972, and a Ph.D. from Iowa State University in 1975 in Agricultural Climatology with a minor in Statistics. From 1975 through 1983 he was a Biometeorologist at the University of California-Davis and in 1983 he joined USDA-ARS in Lubbock, TX as the Research Leader of the Plant Stress and Water Conservation Research Unit. In 1989, he was appointed the Laboratory Director of the newly formed National Soil Tillage Laboratory in Ames, Iowa which was renamed the National Laboratory for Agriculture and the Environment and he remains in this position. He is a national and international expert on soil-plant-atmosphere interactions and the development of indicators of plant response to stress and climate change. He serves on various advisory committees on agriculture and has received numerous awards from scientific and professional societies. He was named to the USDA-ARS Science Hall of Fame in 2014 for his research accomplishments on agriculture and the environment. He is the author or co-author on 423 refereed publications and 16 monographs.

¹**Corresponding author:** Jerry L. Hatfield, Laboratory Director and Supervisory Plant Physiologist, National Laboratory for Agriculture and the Environment, Ames, Iowa. Email: Jerry.hatfield@ars.usda.gov