Article title	DSSAT CERES-Teff Model Development
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Keywords	Waterlogging, Gluten-free, Hay, Transplanting
Abstract	Crop models are powerful tools that describe crop development and growth as a function of crop management, weather, and soil conditions. However, a comprehensive model that captures these factors and their interaction for Teff [Eragrostis tef (Zucc.) Trotter], was initiated only recently. Teff is the most important cereal in Ethiopia grown in about 3.1million hectares (24.17% of the total grain crops). Teff's popularity is increasing globally due to gluten-free grains with high in calcium and iron content. This presents a growing economic opportunity for Ethiopia and its farmers. Teff is also becoming a viable source of high quality and high yielding hay and silage in a relatively short growing season in the USA. Teff straw is valued as a high quality, low input, warm season fodder. CERES-Rice model within the Cropping System Model platform of the Decision Support System for Agrotechnology Transfer (DSSAT) was used as the module to develop the teff model. Rice model offered options for direct-seeding and transplanting of teff, cultivar-specific tillering effect, and the ability to simulate wide range of hydrologic regime from anaerobic flooded/saturated to aerobic upland conditions, all of which capture teff's characteristics and growing conditions. The CERES- teff model as presented here simulated the effect of water, nitrogen, carbon dioxide, and daylength on crop growth and development. A concerted effort is needed to conduct knowledge-gap research on teff and evaluate teff model under a wide range of conditions. Teff can play greater role in food and nutritional security and as a climate resilient crop.
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