

The 267th Asia Seminar:

Multipurpose Use of Forage Crops: Germplasm Search and Evaluation



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Forage crops are essential components of the world agriculture. In the USA, especially on cattle ranches of the Intermountain and Great Plains region, forage crops play an important role, even in the face of climate change scenarios. Unfortunately, the yield and quality of many of these grasslands are low and have declined over time, which has been further accelerated by soil degradation and poor management practices. Drought stress is one of the most important constraints on agricultural profitability and sustainability worldwide.

Crops with high-use efficiency for all types of limiting resources, including water, are critical to producer success. Forage crops can produce high levels of net biomass per unit area with minimum inputs because of their low requirements of fertilizers, herbicides, and soil preparation. Forages allow producers to harvest important commodities, like fiber and animal feed, and even biomass for biofuel, from marginal lands that would otherwise be incapable of high productivity. Introduction of novel (highly productive, palatable, and nutritious plant that does not cause toxicity problems to animals), drought tolerant, and winter hardy forage systems in these pastures may have potential to increase productivity, quality, sustainability, and profitability.

Demand for new and suitable plant materials is a long-term issue and is increasing continuously. Major limitations are lack of appropriate cultivars or selections, limited growth response to added resources (e.g., fertilizers, irrigation, rainfed conditions), and poor adaptation. A few promising germplasms and their potential use in the production systems will be discussed.