

Grasses

a brief introduction by Dr. David W. Hall

The grass family (Gramineae or Poaceae) is the fourth largest family of vascular plants and is comprised of 700 genera and ten thousand species. Grasses grow on all continents and are found in marine, freshwater, and arid habitats at all but the highest elevations. Grasses dominate some natural communities, including African veld, Asian

steppe, North American prairies and plains, and South American campos and pampas. These communities comprise 24 percent of the vegetation of the world. Seventy percent of the world's crops are grasses, and 50 percent of the human population's calories come from grasses. Cereals have been cultivated for ten thousand years and have enabled the rise of civilizations. The four most important agricultural crops — sugar cane, wheat, rice, and corn — are grasses. Grasses feed people and livestock, control erosion, make turf, and provide a sugar source for alcohol.

Grasses are generally herbaceous, sometimes annual or biennial, but mostly perennial. Bamboos and a few other grasses are woody. Leaves of grasses are alternate, usually two-ranked (in two rows), and often bunched at the base of the stem. They are

comprised of a sheath and a blade. Leaf sheaths are wrapped around the stem and usually open at the margins. Annual grasses consist of a stem and a fibrous root system. Often,

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fibrous adventitious roots arise from the stem or branches near the base. These roots are sometimes called "prop" roots. The majority of grasses are perennial by means of an underground creeping stem called a *rhizome* that turns upward to develop the aerial stems. Some perennials have a creeping aboveground rootstock from which arise lateral branches that after shorter or longer distances, grow erect to form aerial shoots. These creeping aboveground stems are called *stolons*. Turf formation is a result of an extensive production of stolons, branches, and fibrous roots that form a dense sod.

The fruit of a grass is usually a *caryopsis*, often called a grain. The fruits are contained in the *inflorescence*, or seed head. Inflorescences are at the end of stems and branches and vary considerably in form according

to the length of the axis and the arrangement of the inflorescence branches. The form may be a *spike* (unbranched with stalkless flowers), a *raceme* (simple axis with stalked flowers), or a *panicle* (branching with stalked flowers). The flowers are called *spikelets*.

One grass taxonomist has accurately portrayed the grasses as being created with one

single theme and then having been subjected to every possible variation imaginable. Complete descriptions of the grass family and its characteristics often comprise ten to twenty or more pages in textbooks. This brief introduction simply provides the reader with a better background for understanding the articles featured in this special issue of *The Palmetto*. 🌿

[Dr. Hall is a recognized expert in the field of plant identification and has published seven books and over 125 articles. At the University of Florida, he served as Director of the Plant Identification and Information Services. Hall is currently a senior scientist with KBN Engineering and Applied Sciences, where he is responsible for plant identification, endangered species, wetland jurisdictions, general ecology, and forensic botany. Be sure to read his article on aquatic grasses on page 17 and attend his taxonomy session at the conference—Editor]