

Beef Cattle Handbook



BCH-6050

Product of Extension Beef Cattle Resource Committee

Range Plants Foundation of the Grazing Resource

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Range owners and managers should learn the identity of the important plant species. Each has a scientific name and a common name. It is important that proper nomenclature be used because some plants are known by more than one name and some names are used for more than one plant.

Why learn a plant's identity?

- It is necessary when you inventory.
- You can't rate your range without knowing the main species.
- Some species are grazed more than others.
- Some are more productive.
- Some indicate particular site conditions and particular ecological conditions.

Grasses, generally, are the most important plant category for beef producers, and this category is emphasized here. Each plant has specific parts with particular functions. Those for grasses are described next.

Plants usually have roots, crowns, stems, leaves, and seedheads. To tell one plant from another, you must know the names of the main parts and their differences. This is shown on page 2 for grasses.

Roots, unlike stems, have no joints, leaves, or flowers. The root's growing part is at the tip. The main functions of the roots are to take water and minerals from the soil to the stems, to store food over winter for spring growth, and to anchor the plant in the soil.

Rhizomes are actually creeping underground stems with joints and leaflike scales. You may have seen quackgrass or western wheatgrass rhizomes producing a new plant. Rhizomes store food and reproduce new plants.

Stolons are like rhizomes, except they grow above

the ground. They do the same job as rhizomes, food storage and reproduction.

Above ground, a plant may be divided into vegetative and flowering parts. Vegetative plant parts include the stems and leaves. The grass stem is made up of nodes (joints) and internodes (between the joints); it is usually hollow but sometimes has pith in the center, similar to corn. The main functions of the stem are to transport water, minerals, and food between the roots and the leaves and to support the leaves.

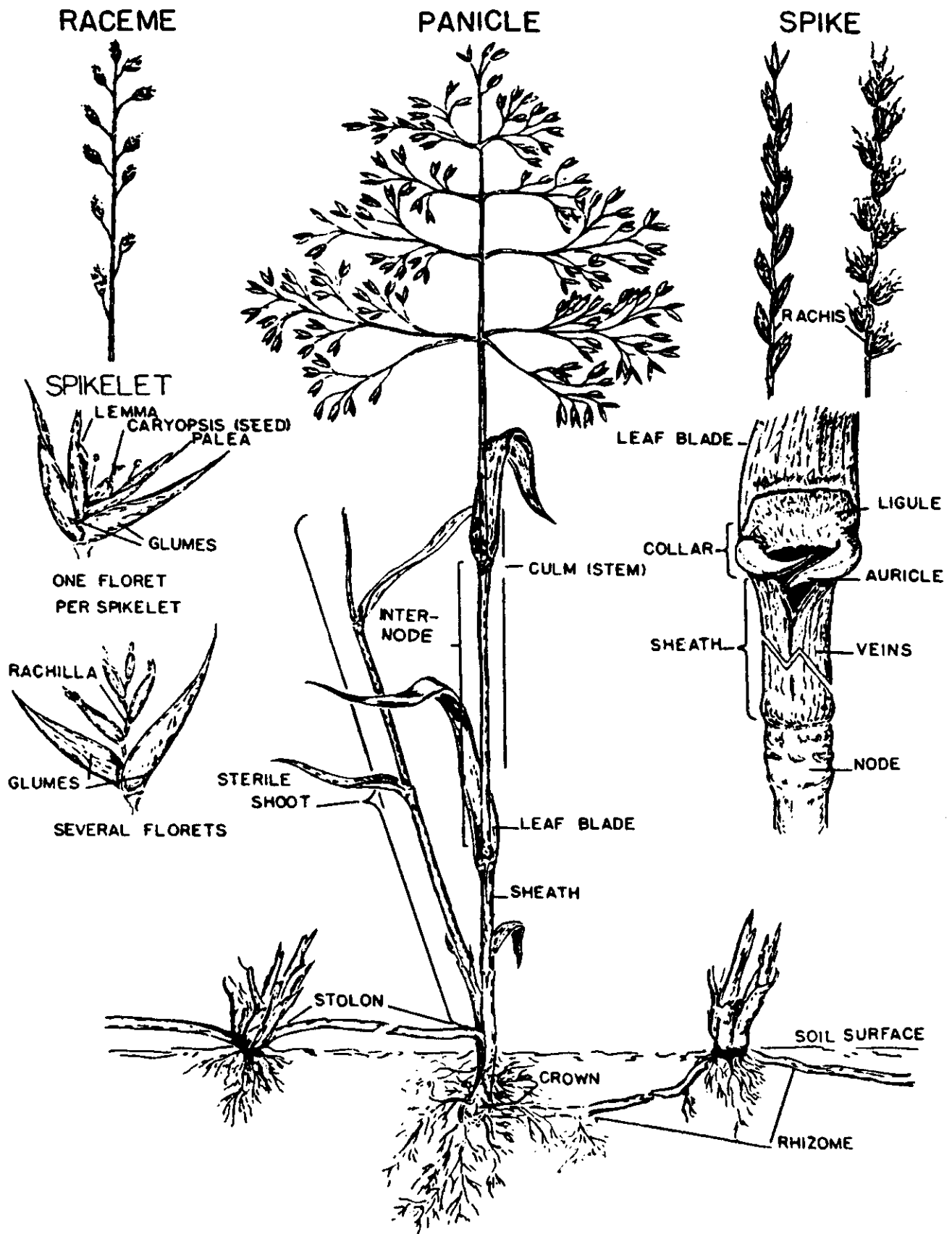
At each node (joint) on the stem, there is a bud, which may reproduce a branch or remain dormant. The leaf also arises from a node on the stem. The leaf is made up of two parts; the sheath, which fits closely around the stem; and the broad, expanded portion known as the blade. These two parts are jointed together at the collar, which has two parts. On the inside of the collar, next to the stem, is a small leaflike projection known as the ligule. On the outside of the collar, on some grasses, are two ear-shaped tips that clasp the stem. These tips are called auricles.

The growing point of the grass leaf is at the base of the leaf and the sheath rather than at the tip. That explains why grass leaves can be grazed and still grow and produce forage for livestock. The growing point of herb stems is at the tip. When the tip is grazed or clipped off, the stem quits growing.

The "flower" or head of a grass plant is made up of many smaller units known as spikelets. At the base of each spikelet there are two leaflike bracts known as glumes. When there is more than one floret (single grass flower) in each spikelet, each floret is supported

Figure 1. The Grass Plant and its parts

THE GRASS PLANT



on a short stem known as a rachilla. Each of these florets at maturity produces a seed. The seed is enclosed by two more leaflike bracts known as the lemma and the palea. In many grasses, such as bluebunch wheatgrass, the lemma and palea remain with the seeds after they ripen and fall.

If you do not have an identification key and need to know the name and importance of a plant, take the plant to your county Extension agent or to some other range technician. If they cannot identify it for you, keep one specimen and send another one to your Extension range specialist or to the herbarium of your state college or university. When collecting plants for identification, you should collect the entire plant. It will aid in identification and shipping or storing in a collection if you press each specimen.

Plants can be grouped according to how long they live and how they grow.

Annual plants live only one season. They must reproduce each year from seeds. They do not grow a second year from roots or crown. Examples are cheatgrass and Russian thistle.

Biennial plants live 2 years and reproduce by seeds the second year. Yellow sweet clover is one. There are no biennial grasses.

Perennial plants live over from year to year, producing leaves and stems for more than 2 years from the same crown. These plants reproduce by seeds, stems, bulbs, and underground rootstocks. There are both shortlived and longlived perennials.

Plants grow in different seasons of the year. Coolseason plants make their principal growth during the cool weather in the spring or late fall. Warmseason plants generally make their principal growth during the frostfree period and develop seed in the summer or early fall.

Plants are also grouped according to their growth form, that is, their shape or how they look as they grow. Because range plants are so numerous and so different in their forms and growth habits, they should be grouped for convenience in range management. There are five main kinds of plants: grasses, grasslike plants, forbs, shrubs, and halfshrubs.

Following is a description of the kinds of common range plants.

Grasses

Grasses and plants with jointed stems; stems are generally hollow, leaves are in two rows on the stem; veins on the leaves are parallel. These are "true grasses" and are among the most important kinds of range plants.

Examples are:

- Little bluestem (perennial bunchgrass)
- Quackgrass and western wheatgrass (perennial with creeping underground stems or rhizomes)
- Cheatgrass brome (an annual grass)

Grasslike Plants

These plants look like grass, but have solid (not hollow)

stems which are either triangular or round and have no joints. Veins are parallel in the leaves. These are sedges and rushes. Examples are:

- Elksedge (triangular in cross section)
- Baltic rush (round in cross section)

Forbs

A forb is a nongrass plant with annual stems (tops). There are usually netlike veins in the leaves. Examples are weeds and range flowers. We use the term "forb" instead of "weed" because weeds are best thought of as undesirable plants. Many of this group of range plants are not pests, for they are valuable as forage, especially for sheep and wildlife. Examples are:

- Yarrow (perennial creeping rhizomes)
- Tapertip hawkbeard (perennial roots)
- Bull thistle (biennial roots)
- Tumbling mustard (an annual forb)

Shrubs

A shrub is a woody plant; its stems and buds live over the winter above the ground and branch from near the base. (A tree resembles the shrub in growth form, but the tree has a definite trunk with branches well above the ground). Examples of shrubs are:

- Big sagebrush
- Rabbitbrush
- Bitterbrush

HalfShrubs

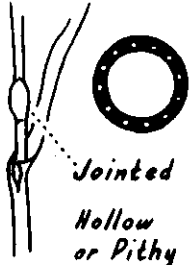


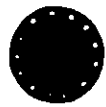


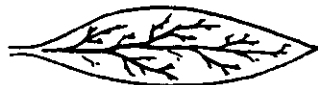


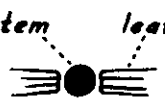

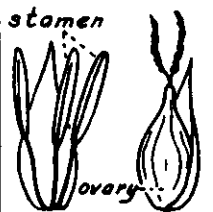

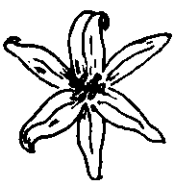






A halfshrub is a perennial plant that dies back each winter, not to the ground line, but to a perennial woody base or a bare ground stem. Examples are:

- Matchweed
- Winterfat

By knowing the groups of plants and plant parts, you can use an identification key. A key is an organized listing of plant characteristics according to structure (generally, flower parts). Plant keys are helpful in determining the correct names of plants.

See your Extension agent or range technician for a key to range plants in your county or state.

Figure 2. Distinguishing Features of Major Range Plant Groups

IMPORTANT RANGE PLANT GROUPS					
	GRASSES	GRASSLIKE		FORBS	SHRUBS (Browse)
		Sedges	Rushes		
STEMS	 <p>Jointed Hollow or Pithy</p>	  <p>Solid Not Jointed</p>		 <p>Solid</p>	 <p>growth rings Woody Solid</p>
LEAVES	 <p>Parallel Veins</p>			 <p>"Veins" are usually netlike</p>	
	 <p>stem leaf</p> <p>Leaves on 2 sides of stem</p>	 <p>stem leaf</p> <p>Leaves on 3 sides of stem</p>	 <p>stem leaf</p> <p>Leaves on 2 sides of stem; rounded</p>		
FLOWERS	 <p>(floret)</p>	 <p>stamen ovary male female (may be combined)</p>		 <p>Often showy</p>	
EXAMPLE	 <p>Western Wheatgrass</p>	 <p>Threadleaf Sedge</p>	 <p>Wire Rush</p>	 <p>Western Yarrow</p>	 <p>Big Sagebrush (twig)</p>

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This publication was prepared in cooperation with the Extension Beef Cattle Resource Committee and its member states and produced in an electronic format by the University of Wisconsin-Extension, Cooperative Extension. Issued in furtherance of Cooperative Extension work, ACTS of May 8 and June 30, 1914.

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