



UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

HIGH DESERT CROP NOTES

LOS ANGELES AND
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Sudangrass Hay Production

Adapted from *Sudangrass Hay Production in the Irrigated Deserts of Arizona and California*. The University of Arizona, College of Agriculture, Tucson, AZ 85721

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General

Since 1989, high demand for fine-stemmed sudangrass hay by the Japanese has created a market opportunity for Arizona and California hay producers. Foreign sudangrass hay buyers want dust-free hay with a bleached light green color and a stem diameter less than one quarter of an inch.

Most growers use the variety 'Piper' because it is a well known time-proven standard. Many new sudangrass and hybrid sorghum-sudan hay varieties are available commercially, however there has been limited test for yield and quality under irrigated production in hot, dry climates. Non-adapted varieties can accumulate prussic acid and nitrate-nitrogen in concentrations that are toxic to livestock.

Sudangrass and related hybrids are annual warm season grasses grown for pasture, green chop, silage and hay. Sudangrass forages include common sudangrass (*Sorghum sudanense* Stapf.), sudangrass hybrids and sorghum-sudangrass hybrids. As many as 4 to 5 cuttings can be obtained in a season on a 21 to 30 day cutting cycle.

Sudangrass does well on all types of well drained soils, and it tolerates moderately saline soils with an electrical conductivity of the soil extract up to 4.0 (2560ppm).

Sudangrass is normally planted in late spring when the soil has become warm and exceeds 65° F. When soil temperatures at planting are from 50 to 60° F, sudangrass germination drops to 25-60%, and plants require 14 to 21 days to emerge. At soil temperatures above 60° F, germination is increased to 90-96%, requiring 4-6 days to emergence.

Seedbed Preparation and Planting

Sudangrass produces well on all soil types especially for well drained, and fertilized and irrigated frequently. Compacted soil layers below the plow depth should be broken by subsoiling prior to seedbed preparation.

The soil should be prepared well with a mellow, firm seedbed that provides good contact between seed and soil particles, similar to that for alfalfa.

Heavy (silt or clay) ground is often bedded prior to planting sudangrass due to its lower water infiltration rate, while sandier soils are normally planted flat in narrow basins with a grain drill.

Use certified seed since poor quality seed may contain Johnsongrass or other varieties of sorghum. Plant as soon as soil temperature is 60 degrees F at a 1 ½ inch depth for several consecutive days at 8:00am, along with favorable five days forecast. Suggested planting dates for the High Desert is April 1 through May 15.

Cultipack before seeding and use a grain drill with press wheels or other equipment that will accomplish a firm loose seedbed.

Seeding rates: the higher the finer the stems will be. It can vary from 20Lbs/A for grazing to 100Lbs/A when planted for exporting hay. Most people around this area usually plant it at 50Lbs/A.

Plant at 1 inch deep in heavy soils or 1 ½ inch deep in sandier soils with a 6 to 8 inch drill row spacing on flat ground, or with five to seven 6 to 8 inch wide rows on raised beds.

Piper is a variety that has done well in this region, with finer stem and better regrowth.

Fertilization and Irrigation

Typically, 40 to 80 Lbs of N per acre are suggested at planting, based on results from a preplant nitrate-nitrogen soil test. This should be followed by split application of 60 to 120 Lbs of N per acre

in irrigation water following each cutting – a common rate used in the High Desert is 80 Lbs/A. Phosphorus requirements can also be determined from a preplant soil test, but for cool soils (early Spring), a rate of 80 to 100 Lbs of P2O5 per acre can be beneficial.

Overfertilization with nitrogen, especially when combined with stand loss in the later cuttings, can result in unacceptably high levels of nitrate-nitrogen in the forage (>1000ppm).

Sudangrass uses from 7 to 11 acre-inches of water per month in May, June, July and August. During the hottest periods this means irrigation about every two to three weeks on heavy loam, silt loam and clay loam soils which hold more water than coarse textured sandy and sandy loam soils, which will require an irrigation interval of from one to two weeks. Sudangrass grown for hay on coarse textured soils will require from three to five inches of irrigation water applied every 15 to 25 days during April and September, and every 10 to 15 days, May through August.

Pest Management

Normally insecticide applications are not required, but a preplant or postemergence herbicide application may be necessary.

Certain annual grasses and broadleaf weeds can be controlled with glyphosate or atrazine applied preemergence. Buctril, 2,4-D or atrazine plus oil may be applied postemergence for control of certain broadleaf weeds.

Leaf blights which cause elongated straw-colored lesions with reddish margins on leaves and downy mildew which causes yellowish or reddish deformed leaves are the most serious sudangrass diseases. Insects including the greenbug, corn earworm, armyworms, wireworm, southwestern corn borer and spider mites are occasional pests.

Grazing and Hay Harvest

Harvest sudangrass when it is at least 18 to 24 inches tall at the first cutting. This generally occurs from four to six weeks after planting. It may be pastured or cut for hay every three to four weeks thereafter. When sudangrass is grazed down quickly it has a longer time for regrowth. Rotation of livestock in strips or sections will facilitate irrigation after quick grazing, promote better regrowth and avoid uneven grazing which can result in tall, unpalatable plants.

Highest hay quality is obtained when sudangrass is harvested at the boot growth stage prior to heading. The feed value of good sudangrass hay is about equal to that of millet, timothy, Johnsongrass and other grasses. Crude protein ranges from 9-12% and TDN ranges from 55 to 60%. Typical curing time range from 10 to 20 days, and it's easily baled when moisture content of the forage does not exceed 8 to 10%.

Potential Sudangrass Forage-Livestock Disorders

- *Nitrate Poisoning:* nitrate poisoning in livestock often results from the consumption of pasture or feedlot hay containing high levels of nitrate-nitrogen ($\text{NO}_3\text{-N}$). Sudangrass takes up nitrogen from the soil primarily in the form of nitrate. Under normal growth conditions this nitrate is converted to plant protein at about the same rate it is taken up by plant roots. However, when plant growth is slowed or stopped by stress conditions including low soil moisture, low humidity (hot, dry weather), cloudy conditions that reduce solar radiation, frost or herbicide application, nitrate can accumulate. Nitrate levels will be higher in the stalks or stems and lowest in the new leaf growth. Nitrate levels are usually higher in young plants and decrease as plant mature. Forages heavily fertilized with nitrogen often will accumulate toxic quantities of nitrate-nitrogen during periods of drought, cloudy weather or when stands start to thin. If you suspect nitrate accumulation in forage, it is a good idea to postpone the harvest for a few days and have the forage tested.

- *Hydrocyanic or Prussic Acid Poisoning:* naturally occurring glycosides may form prussic acid which can build up to toxic levels in young plants and leaves of sudangrass. As with nitrate accumulation, some stress usually triggers HCN production. Since prussic acid is most likely to build up to dangerous levels immediately after a killing frost, the last sudangrass hay cutting of the season can likely be suspect. Occasionally, hot, dry winds induce temporary moisture stress on sudangrass plants which also can increase the potential for prussic acid accumulation.

Basic Computer Technology Class

The use of computers and related technologies has become essential in our lives not only for communication purposes but for information acquisition, data management and much more. Specifically for agriculture, the use of computer related technologies has made it possible to improve many agronomic practices with the use of sensors and data loggers, for example. Additionally, there is innumerable resource information available in the internet that can be accessed with a simple computer and internet connection at home.

If you are interested in taking this class, please contact our UCCE office at (661)974-8824 and let Jennifer know what is a good time for you (day of the week, morning or afternoon etc). Knowing ahead of time how many people are interested and their availability will give me the flexibility to plan this class at different times and use fewer computers. As many of you already know, it has been difficult to find a computer lab to accommodate this class.

Please see below a summary of the topics that will be covered on this class:

How a PC works

History of computer;

Parts: processor, hard drive, RAM memory, monitor, backup battery;

Connecting cables: monitor to computer, computer to power supply;

Using the computer and software

How to access computer configurations;

Where store your files, how to create folders;

How to open, create and save Word, Excel and Power Point files;

Check on files characteristics, like size, extension type etc;

Internet

How to connect the computer to the internet;

How to verify if connection is ok;

Using Internet Explorer – search websites, useful websites, favorites;

Create an email account and use it.

New National Viticulture Resource Available Online

(Western Farm Press, January 2011)

The national online resource, eViticulture (eviticulture.org), offers the latest in science-based information for viticulturists.

This new resource, created by the Grape Community of Practice (GCoP) and eXtension (extension.org), is directed toward commercial viticulturists who need proven, tested information to improve their skills in the vineyard.

“This community of practice is made up of a nationwide group of professionals with experience in grape production,” said Eric Stafne, Oklahoma State University Cooperative Extension viticulture specialist. “All the states involved have a grape industry, from the very large to very small, and all have an increasing interest in grape production.”

Expertise within the GCoP includes integrated pest management, plant pathology, food science, distance education, variety selection, canopy management and rootstocks, to name a few.

2011 Kern Potato Variety Trial Field Day

Wednesday, June 22, 2011

10 a.m. – 1 p.m.

Hart Memorial Park (8 miles northeast of downtown Bakersfield via Hwy 178 and Alfred Harrell Hwy)

The Annual UC Cooperative Extension and CPRAB Variety Trial Field Day is an opportunity to see tubers of potentially new varieties, how they performed this year and compared to standard varieties. Entries include varieties from numerous USDA, state, and private breeding programs.

For more information please call (661)868-6222