SOLUTIONS IN THE LAND

CROP PROFILE

JAPANESE MILLET

Echinochloa esculenta
Species of grass in the Poaceae family

History

Japanese millet is a domesticated relative of the seed barnyard grass. It is grown for grain in Australia, Japan, and other Asian countries.

Climate Needs

Japanese millet can grow at low and medium altitudes and is better suited for colder climates and wetter soils. This crop requires warm temperatures for germination and development and is sensitive to frost.

Japanese Millet Description

Japanese millet is a warm-season annual grass grown primarily as forage or for wildlife habitat. This plant is an excellent weed-suppressing cover crop that can grow up to 4ft in 45 days, reaching maturity in 50-60 days. This plant has a fibrous root system which helps control erosion. Japanese millet produces a large amount of seed and is tolerant to frequent cuttings.

Soil

Soil temperatures should be between 68°F and 86°F on well-drained loamy soil. Seedbed preparation is similar to that for spring-seeded small grains. It is adapted to soils with a pH as low as 4.5 and a salinity of 2,000-3,000 parts per million. Japanese millet can grow in flooded soils and standing water as long as a portion of the plant remains above the waters surface.

Seeding

Applying fungicide may be a good idea as it protects against head smut (sphacelothaca destruens) and may increase seedling survival. Weeds should be controlled before planting, and the seedbed should be firm and well-worked. Seeding dates for Wisconsin range from June 15th to July 15th. Japanese millet can be broadcasted at 20lbs per acre and covered lightly, ¼ inch deep or directly seeded into mud flats or well-prepared fields. Seeding should be done in full sun.

Risk

There is little risk when growing Japanese millet. This crop is capable of becoming weedy if not properly harvested.

SOLUTIONS IN THE LAND

CROP PROFILE

Highlights

Japanese millet can occur in wetlands and non-wetland sites, depending on the region. It has been shown to reduce the dry weight and number of yellow nutsedge through root competition for nutrients and water. Due to its fibrous root system, Japanese millet helps control erosion and can add 35 lbs per acre of nitrogen. It has also been shown to increase the bearing capacity in waste clay settling ponds produced by mining activities. This crop is useful as a fast-growing cash crop. Japanese millet is excellent for bird feed mixes, it can be used for wild and caged birds.

Fertility

Nitrogen is generally the most limiting nutrient in millet production. Rates of nitrogen should be based on yield goals and cropping history. Excess nitrogen, whether applied or residual, may result in lodging.

Weed Control

Because Japanese millet is planted late in the season, spring plowing and cultivation for weed control are practical. Millets compete poorly with weeds; therefore, high seeding rates are necessary to establish a dense stand.

Pest & Disease Managment

There are just a few pests to look out for with Japanese millet. First is grasshopper, this insect has been the most serious for this millet. Second is armyworms, this insect can be prevalent. Both of these pests can be controlled by insecticide.

Harvest

Japanese millet can produce up to 3,500lbs per acre of dried aboveground biomass. If used for multiple cuttings of hay, cut in the boot stage of maturity or earlier and leave 4 inches of stubble to allow for the best regrowth. If used for a single cutting, cut in the late boot stage through early seed head emergence for high yield without sacrificing quality.

Cleaning & Storage

Millet should be stored at 13% moisture in a cool, dry, and dark container.

SOLUTIONS IN THE LAND

CROP PROFILE

Rating any crop's production opportunity or risk is subjective and depends on the region where the crop is to be raised. Genetic advancement for pathogen tolerance and adverse weather condition has been more significant for popular, high seed sales crops such as corn and soybeans. The below table lists some of the issues of producing specific crops and helps guide your process of selecting your cropping choice.

Average rating: 4

Issue	1	2	3	4	5
Seed availability			X		
Scouting requirements				X	
Drought tolerance				X	
Waterlogged soil tolerance					X
Disease pressure				X	
Wildlife concerns			X		
Yield swings			X		
Harvest ability				X	
Field loss				X	
Market demand		X			
Soil regeneration					X
Residue value					X
Storability					X
Benefit for following crop					X

1- very low 2- low 3- average 4- moderately high 5- very high

Seed availability – Price, lead time, and required lot size are consideration for these issues
Scouting requirements – What frequency does someone need to look at the crop?
Drought tolerance – Rainfall patterns are requiring crops go longer between rainfall events.
Waterlogged soil tolerance – Rainfall events tend to produce higher volumes than historical averages.
Disease pressure – Plant stress has increased with the rise of daytime temperatures
Wildlife concerns – Deer, rabbits, voles, resident geese, and others can destroy fragile crops.
Yield swings – How predictable will the income be when this crop goes to market?
Harvest ability – Do we need plans B & C if adverse conditions affect the harvest?
Field loss – How much will be left in the field and can we monetize field loss?
Market demand – Does this crop have an elastic delivery window and are there timing penalties?
Profitability – Is there potential for higher margins needed for a shrinking land base?
Soil regeneration – Does this crop support the next crop?
Residue value – What remains after the target crop? Can we monetize the residue?
Storability – How long can we hold this crop? Will quality be challenging to maintain?

JAPANESE MILLET