USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

VT327- Conservation Cover

Job Sheet

Practice Lifespan - 5 Years

Producer: _____ **Project or Contract:** _____

Location: _____ **County:** _____

Farm Name: _____ **Tract Number:** _____

Purpose: Common Milkweed (Asclepias syrica) is a very high value nectar source for native bees and honey bees as well as many other insects. It is also the lone food plant for Monarch butterfly caterpillars. Common Milkweed is a perennial forb that grows from a deep rhizome and has distinctive pods containing wind-borne seeds. Flowers are pink and bloom from June-August. It generally grows from 1-4 feet high. It is most often found in upland sites and it requires partial to full sun for best growth.

Monarch butterfly need milkweed to survive. Female Monarchs only lay their eggs on milkweed. Monarch caterpillars need milkweed plants to grow and develop. However, monarch butterfly populations have declined significantly over the past 20 years. Loss of milkweed breeding habitat in the central United States is one of many factors believed to be leading to these declines. By managing or planting fields with milkweed, landowners or land managers can provide suitable milkweed breeding habitat and a valuable nectar source for various species of pollinators.

Monarch Caterpillar/Butterfly

Description of work:

NRCS Review Only

Designed By: _____ **Date:** _____

Checked By: _____ **Date:** _____

Approved By: _____ **Date:** _____

The Practice Purpose(s):

____ Reduce sheet and rill erosion and sedimentation
____ Reduce ground and surface water quality degradation by nutrients and surface water quality degradation by sediment
____ Reduce emmissions of particulate matter (PM), PM precursors, and greenhouse gases
____ Enhance wildlife habitat, pollinator and beneficial organism habitat
____ Improve soil health

Field Number/Location: _____ **Acres Installed:** _____ **Seeding Date:** _____

Planting Description: Site Preparation and Planting Method

SEEDING RATES AND SPECIES

Plant species	lbs/acre of seed (PLS)	Total lbs of seed for planned acreage
TOTALS =>	0.00	0.00

FERTILIZERS AND AMENDMENTS

Fertilizer Element	Fertilizer Form	Fertilizer Amount (lbs/acre)
N	*e.g. DAP*	as N
P	*e.g. DAP*	as P_2O_5
K	*e.g. K_2SO_4*	as K_2O
S	*e.g. K_2SO_4*	as S
Lime		
Gypsum		

Operation and Maintenance: (check all that apply)

____ Mowing and harvest operations in perennial crop systems such as orchards, vineyards, berries, and nursery stock shall be done in a manner which minimizes the generation of particulate matter.

____ If wildlife habitat enhancement is a purpose, maintenance practices and activities shall not disturb cover during the reproductive period for the desired species. Exceptions should be considered for periodic burning or mowing when necessary to maintain the health of the plant community.

____ Control noxious weeds and other invasive species.

____ To benefit insect food sources for grassland nesting birds, spraying, or other control of noxious weeds shall be done on a "spot" basis to protect forbs and legumes that benefit native pollinators and other wildlife.

____ Re-vegetate bare spots.

Additional Operation and Maintenance

Follow the Attached VT327 – Conservation Cover - Job Sheet Addendum for Establishing and Maintaining Milkweed in Vermont.

_____

Signature Designated Conservationist or Technical Service Provider **Date**

VT327 – Conservation Cover - Implementation Requirements
Addendum - Establishing and Maintaining Milkweed in Vermont

Planting

Soil Preparation and Planting Methods

Milkweed will respond best if planted in early summer when the soil has reached a temperature of at least 65 degrees Fahrenheit. This generally occurs in mid-June with most plantings being completed between the 10 and 15th of June.

Prior to planting it will be important to properly prepare the seedbed to assure good germination and adequate establishment of the milkweed.

Milkweed seeds are quite small and require good seed-soil contact to germinate. The soil should be prepared similar to planting a new seeding of forages (grass/legumes), creating a firm, even seedbed using various tillage equipment and field finishers. Milkweed can potentially be no-till seeded into a herbicide terminated sod crop, however, caution should be taken as the seed needs to be planted at shallow depths and into warm soil for adequate germination.

Milkweed can be seeded using a variety of seeders including air-seeders, brillion seeders, and standard grain drills that are equipped with grass seed boxes. With whatever implement you are using, it is important that the seed be planted no deeper than 0.25-0.75 inches. If planted too deep you will see poor germination, uneven emergence, and likely face high weed pressure. If broadcasting seed is your only option, make sure the soil is adequately prepared and moist when seeding. Once seed has been broadcasted use a roller or cultipacker to lightly incorporate the seed.

Weed competition during milkweed germination, emergence, and initial establishment is the primary cause for stand failure during the establishment year. Selecting a field with known low weed seed bank and/or low weed pressure will help improve the success at establishing the milkweed field. Fields that generally have known low weed seedbanks are those that have been in healthy perennial sod production for 5 or more years. During the sod (perennial forage) years the weed seed bank declines steadily over time. Likely a field that has been in continuous row crops with heavy manure applications would have a high weed seed bank.

Once a field is selected a strategy to remove weed pressure prior to planting should be incorporated into the cropping plan. If the field has been in annual crops a stale seedbed technique can be used to reduce weed seed banks prior to planting. First the field should be lightly tilled to disturb the very top layer of soil to encourage the weed seeds in the soil to germinate. Repeating this method causes the weeds that germinated to be left to dry out on the soil surface as new weeds are stimulated to germinate. If done every few 10 to 14 days the soil weed seedbank will be depleted leaving the milkweed with less competition during its establishment. This procedure should be repeated a minimum of 2 times in the field prior to planting. A low residual herbicide (i.e. glyphosate) can be incorporated into the pre-plant weed control protocol if desired. In this case the herbicide would be applied to any actively growing weeds in the field prior to implementing the stale seedbed technique.

Seeding Rates and Species

When establishing a milkweed stand it is important to keep in mind how it will look a few years down the road. Some milkweeds can spread by sprouting new shoots from their roots, even if they are a few feet away from the initial plant. Common Milkweed is one of the colony-forming species. Therefore, each seed you plant will eventually become multiple plants creating a dense stand. Much like tillering in grains, if the seeding rate is too high the plants will limit this spreading, but if too low weeds will pose more competition. A seeding rate of 3 lbs per acre is used to accomplish this balance. Seeding rates may need to be increased when no-till seeding or broadcasting as existing vegetation and not covering the seed will likely lower establishment.

Milkweed seed needs to undergo a period in cold moist conditions that mimic winter, called stratification, to germinate. Seed should be stratified prior to being sent to a grower and should be received ready to plant. Seed should be stored in a refrigerator until planting to prevent reductions in germination.

Stand Management

Nutrient requirements

Milkweed can often be found growing along roadsides, in unmanaged meadows, and in agricultural fields. These sites tend to be poorer quality soils low in nutrients. Milkweeds are able to survive in these places because they have a root system of the plant can extend to great depths scavenging for nutrients and water from great distances. Therefore, milkweeds have low nutrient demands, however, specific fertility requirements of milkweeds have not been fully determined as they are not typically viewed or managed as a crop. Future research will provide insight into yield potential and subsequent nutrient uptake by milkweed in our region.

Maintenance

Managing weeds from before planting is necessary in establishing a dense stand of milkweed that will remain weed competitive through its lifespan. As previously described, this can be done through employment of a “stale seedbed” technique but can also be done with chemical herbicides. If herbicide use is desired prior to seeding, an herbicide with low residuals should be selected to limit potential germination reduction. Herbicides could also be used after planting during the fall or spring when winter annual weeds are present but the milkweed is not above ground or actively growing. In season weed management becomes much more challenging as mechanical cultivation would not be possible once the stand begins to fill in. Likewise chemical control can be tricky as choices of herbicides that will not harm the milkweed are limited and driving into the stand could be damaging. In addition, timing of spraying herbicides should be carefully determined to avoid damaging monarch caterpillar and other pollinator insect populations that colonize and utilize the milkweed. Mowing has also been suggested as a means of weed control by providing the milkweed a chance to outgrow the weeds during regrowth, however the efficacy of this method has yet to be fully researched.

After about 10 years milkweed plants slow in their production of seed pods and new shoots from the root system. To ensure a stand remains dense over the long term, reseeding may be required after 8-10 years or earlier if excessive thinning of the stand is noticed. Reseeding could be done in either the spring or the fall when the milkweed is underground. Seeding rates may need to be increased from the initial 3 lbs. per acre recommendation as there will likely be higher competition and seed loss due to vegetation.