South Dakota's Noxious Weeds

South Dakota State University Cooperative Extension

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South Dakota's Noxious Weeds

South Dakota's Weed Control Program is Set Up to Eliminate These Noxious Weeds on our Farms; Learn to Identify Them

Agricultural Extension Service
South Dakota State College, U. S. Department of Agriculture
And South Dakota State Weed Board, Cooperating
Preface

The weeds in this booklet have been designated as "Noxious Weeds" by the South Dakota State Weed Board. They have been printed in natural color so they may be identified easily.

These are South Dakota’s most troublesome weeds. If left alone they soon will take over the land, spread to other fields and cause heavy financial loss. South Dakota’s farms should be protected from these weeds—infestations must be eliminated.

The State weed law passed by the state legislature in 1945, created the South Dakota weed program. It concerns the control of these noxious weeds. Formerly, only individual attacks were made on weeds. Now, through state action, weed control has become a community or neighborhood program. This approach is essential because these weeds spread from farm to farm by wind, water, animals, machinery, etc. Counties have made surveys of noxious weed infestations and, through group action, have started control measures of ridding the land of these weeds.

Every landowner must recognize these noxious weeds and prevent them from taking over our land.

FIELD - BINDWEED
CONVOLVULUS ARvensis

A

B

C

D

E

F

1

2

3
Creeping Jenny or Field Bindweed (*Convolvulus arvensis*)

South Dakota's Worst Weed

Creeping Jenny is South Dakota's worst weed. It holds this rank because production orders show that, where it takes over, it causes 30, 50 to 100 per cent losses. The extent of the yearly loss depends upon the degree of infection and the moisture supply.

Deep Root System

Creeping Jenny is so troublesome because it has such an extensive root system which may penetrate to a depth of 8 to 20 feet. A 2 to 3 foot food supply is stored in this root system. It is hard to kill because the roots will live as long as the food supply lasts and because sprouts may reach the surface from buds 2 or more feet below the ground line.

Costs More To Keep Than To Kill

Due to the losses it causes, South Dakota farmers cannot afford to have Creeping Jenny cause it costs more to keep it than to control and eradicate it.

Learn To Identify Creeping Jenny

Enough of these colored pictures are being distributed so that every farm family, school, elector, bank and everyone interested will have a copy. Every citizen interested in the welfare of the state wants to learn to identify this weed. It is important to be able to tell the difference between Creeping Jenny and the weed generally called "Wild Morning Glory" or "Hedge Bindweed." This picture will help. Creeping Jenny's smaller (about one-inch) blossoms. Very curate identifications marks are the two scale-like bracts which grow on the flowstem of Creeping Jenny from ½ to 2 inches low the flower. Locate these on the picture.

Prevention Costs Less Than Eradication

Areas which are now weed-free may be kept free of noxious weeds by seeding grain free of noxious weed seed, feeding grain and forage free of noxious weed seed and by not spreading manure containing live weed seed. Therefore, the South Dakota Weed Program concerns not only areas already infested with weeds, but is designed also to protect clean areas from becoming infested. Everyone recognizes the importance of this principle.

Control and Eradication

Creeping Jenny and other perennial noxious weeds can be economically killed by intensive cultivation which starves the root system or by poisonous chemicals.

The method chosen will depend on the particular situation. Some areas are small and can be handled either by intensive cultivation or by poisonous chemicals. If the area to be treated is extensive and a return from the land is needed, the farmer may want to use the Root Starving-Rye method or other approved methods.

Good workmanship is essential and a specific program must be followed with any method. Complete directions are necessary. Specific instructions on control are available in separate circulars at County Extension offices.

Follow-up To Prevent Reinfestation

After old plants have been killed, watch out for young plants which may come from germinating seed. Such plants may continue to emerge for several years after the original stand has been eradicated. Directions for prevention of reinfestation will also be found in control circulars.

This is one of the colored pictures of South Dakota's noxious weeds. Others will be distributed as available. Keep each picture. Bind them together as issued. They will be valuable because they will enable you to make comparisons with specimens you may find on your farm. The sheets are punched for easy binding. Publications on control practices which will fit your loose leaf weed file are available. As control practices change, new circulars will be issued to replace the old ones.

The 1945 State Weed Law initiated by farmers, and directed by the farmers, sponsors an organized voluntary state-wide weed control program.

S. D. Agricultural Extension Service—U. S. Dept. of Agriculture, Cooperating
Leafy Spurge is one of our worst weeds

Leafy Spurge is one of the most harmful and dreaded weeds introduced into South Dakota. It probably ranks second in importance only to creeping Jenny. It adapts itself to many conditions.

Leafy Spurge Easily Identified

By referring to this illustration the weed can easily identified. The entire plant contains milky juice. Flowers, as shown, are greenish yellow. Seed is contained in 3-celled capsules which, when ripe, explode and shoot out seeds up to 15 feet. Leaves are narrow 1½ to 4 inches long.

Leafy Spurge Has Deep Root System

The strong reddish brown root stalks of leafy spurge may penetrate into the soil 15 feet or more. In addition to these long vertical roots, each plant sends out horizontal roots, which ve rise to new plants. The roots have numerous pink-colored buds. Some of these occur as deep as 10 feet. Shoots are produced from these buds if tops are cut, and new growth appears rapidly. The plant stores a 2 to 3 year's food supply in its root system which makes it difficult to kill except by poison chemicals or by intensive cultivation which eventually starves the roots.

Leafy Spurge Must Be Eradicated

Leafy Spurge is one of the weeds that cannot be tolerated on South Dakota farms. Where it becomes established it has crowded out other plants. Its vertical and horizontal roots form a densely interlaced network in the soil. Our farm crops cannot complete with Leafy Spurge. It will even invade meadows and pastures. Wherever it appears immediate action should be taken to destroy it because of its ability to spread rapidly by roots and seed. The seeds are scattered by the tiny pod "explosions." In addition, they are easily transported by water.

Leafy Spurge is a bad weed for several reasons. Livestock do not like to eat it. Its large amount of milky sap gums up farm machinery. Leafy Spurge starts early in Spring and remains green late in the Fall. This long growing season and denseness of stands enables Leafy Spurge to crowd out even Alfalfa or Sweet Clover.

Prevention Costs Less Than Eradication

Areas which are now weed-free may be kept free of noxious weeds by seeding grain free of noxious weed seed, feeding grain and forage free of noxious weed seed and by not spreading manure containing live weed seed. Therefore, the South Dakota Weed Program concerns not only areas already infested with weeds, but is designed also to protect clean areas from becoming infested. Everyone recognizes the importance of this principle.

Control and Eradication

Leafy Spurge and other perennial noxious weeds can be economically killed by intensive cultivation which starves the root system or by poisonous chemicals.

The method chosen will depend on the particular situation. Some areas are small and can be handled either by intensive cultivation or by poisonous chemicals. If the area to be treated is extensive and a return from the land is needed, the farmer may want to use the Root Starving-Rye method or other approved methods.

Good workmanship is essential and a specific program must be followed with any method. Complete directions are necessary. Specific instructions on control are available in separate circulars at County Extension offices.

Follow-up To Prevent Reinfection

After old plants have been killed, watch out for young plants which may come from germinating seed. Such plants may continue to emerge for several years after the original stand has been eradicated. Directions for prevention of reinfection will also be found in control circulars.

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CANADA THISTLE
CIRSIAU M ARVENSE
Canada Thistle—A Dangerous Weed

Canada thistle is one of the eight noxious weeds in South Dakota. It is a perennial, difficult to eradicate, and is one of the most feared weeds in the United States, having been declared noxious in at least thirty-seven states. The seriousness of the Canada thistle is due to its creeping root system, every piece of which can give rise to a new plant. The numerous seeds are easily scattered by the wind, and are capable of living a long time.

How To Identify This Weed

The flowers of the Canada thistle are small, about ½ to ½ the size of common pasture thistle and are light pink to rose-purple in color. The leaves are dark green and are very crinkly and spiny. Well developed, sharp spines are numerous on the outer edges of the leaves and on the branches and main stem of the plant.

Canada thistle has an extensive underground creeping root system. Vertical roots will penetrate to a depth of 10 feet or more, depending on soil conditions. Horizontal roots, from which the plant spreads underground, are usually about 6 to 12 inches deep.

Canada thistle is often confused with many of our other common pasture thistles. Whereas, the common thistles have a white cottony material on the leaves and stems, Canada thistle is always a dark green color. Circular patches of Canada thistle are found both in pastures and cultivated fields. These patches are often the source of spread to a much larger surrounding area.

Eradicate This Weed When In Small Patches

During years of abundant moisture, Canada thistle spreads much faster than in dry years. Most of the infestation of this weed in South Dakota is in patches. Eradication of these patches is practical and every land owner should start following a program of eliminating them from his farm.

A large area is as difficult to kill as field bindweed, therefore, every effort must be made to eliminate this weed while it is still in small scattered areas.

Control And Eradication

Canada thistle can be effectively controlled by intensive cultivation. Food reserves in the roots are lowest just before the blooming stage. Cultivation operations should start at this stage and continue during the rest of the season. Sodium chlorate and Borax are chemicals that are effective in eradicating small areas.

2,4-D has possibilities in controlling Canada thistle but cannot be expected to give complete kills in one or two treatments. Alfalfa is the best competitive crop on Canada thistle infested land, because repeated cuttings will control the weeds.

Because Canada thistle is generally found in small patches, the application of intensive cultivation or chemicals is practical. After a patch is apparently eradicated, continuous inspection is necessary in order to prevent reinfestation from seed or from any remaining root stocks.

More detailed control and eradication instructions for this weed are available in separate circulars at County Extension offices.

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S. D. Agricultural Extension Service—U. S. Dept. of Agriculture, Cooperating
SOW THISTLE
SONCHUS-ARVENSISS
Perennial Sow Thistle, A Bad Weed

Perennial Sow Thistle has been included in the noxious weed list because where established it takes over and smothers farm crops. Moreover, it is very dangerous because it spreads so rapidly by seed. It produces an abundance of tufted seed which is spread great distances, like dandelion seed, by the wind. Thus, Perennial Sow Thistle is especially a community weed problem. Its control requires such organized effort as provided in the South Dakota Weed Control Program.

Has An Extensive Root System

The roots of this weed penetrate the soil to a depth of from 5 to 10 feet. New plants can be established from root buds 15 to 20 inches below the surface. The horizontal fleshy roots are most numerous and usually do not penetrate lower than 4 inches. Small pieces of these roots as short as ¼ inch long will produce new plants under favorable conditions.

How To Identify This Weed

This colored picture will help identify this weed. Note the large bright orange-yellow flowers. Since the plant grows 2 to 5 feet tall, patches can often be recognized at a distance when the plant is in full bloom in June and July. The plant has milky juice throughout the stem and roots.

It is important to be able to distinguish Perennial Sow Thistle from Annual Sow Thistle and Prickly Lettuce. The last two weeds do not have underground creeping rootstocks. Prickly Lettuce has very small pale yellow flowers and leaves are spiny on the midrib beneath. Perennial Sow Thistle has larger flowers than Prickly Lettuce, as illustrated, and its leaves do not have spines on the midrib beneath.

Prevention Costs Less Than Eradication

Areas which are now weed-free may be kept free of noxious weeds by seeding grain free of noxious weed seed, feeding grain and forage free of noxious weed seed and by not spreading manure containing live weed seed. Therefore, the South Dakota Weed Program concerns not only areas already infested with weeds, but is designed also to protect clean areas from becoming infested. Everyone recognizes the importance of this principle.

Control and Eradication

Perennial Sow Thistle and other perennial noxious weeds can be economically killed by intensive cultivation which starves the root system or by poisonous chemicals.

The method chosen will depend on the particular situation. Some areas are small and can be handled either by intensive cultivation or by poisonous chemicals. If the area to be treated is extensive and a return from the land is needed, the farmer may want to use the Root Starving-Rye method or other approved methods.

Good workmanship is essential and a specific program must be followed with any method. Complete directions are necessary. Specific instructions on control are available in separate circulars at County Extension offices.

Follow-up To Prevent Reinfestation

After old plants have been killed, watch out for young plants which may come from germinating seed. Such plants may continue to emerge for several years after the original stand has been eradicated. Directions for prevention of reinfestation will also be found in control circulars.

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S. D. Agricultural Extension Service—U. S. Dept. of Agriculture, Cooperating
PERENNIAL PEPPER GRASS

LEPIDIUM DRABA.

3 FEET OR MORE
Perennial Peppergrass, A Real Threat

South Dakota farmers can be glad that the weed illustrated here is not widespread in the state. There are relatively few bad infestations yet, but since the weed is very drought resistant and adapted to a wide set of conditions it is a real threat and, if not controlled, promises to be one of our worst weeds. Farmers who have had experience with this weed report that its effect on crop yields is even worse than that of creeping Jenny.

What Makes It Such A Bad Weed?

This weed is one of the most difficult plants to kill because of its extensive underground structures. Vertical roots have been known to grow 30 feet deep. Numerous horizontal roots are formed and these send up shoots at frequent intervals.

The plant is hard to kill because of its extensive root system and the enormous amount of food stored there. It sometimes takes three years to starve the root system by intensive cultivation. It produces an abundance of small seeds which are very difficult to separate from alfalfa and other crop seed of similar size.

Perennial Peppergrass is so aggressive that it will in time choke out a field of Alfalfa. The plant has a disagreeable mustard taste. Livestock eat only the young plants.

How to Identify This Weed

This colored picture will help you to know this pest. This weed is sometimes called "white p" or "hoary cress" because of its numerous snowy compact blossoms, snow-white in appearance. It starts very early in spring, blooming in May.

The leaves are oblong, ½ to 3 inches long. Note how the base of the upper leaves clasps them. The seed pods, as shown, are heart shaped, containing two seeds. The plant grows 10 to 20 inches high.

Prevention Costs Less Than Eradication

Areas which are now weed-free may be kept free of noxious weeds by seedling grain free of noxious weed seed, feeding grain and forage free of noxious weed seed and by not spreading manure containing live weed seed. Therefore, the South Dakota Weed Program concerns not only areas already infested with weeds, but is designed also to protect clean areas from becoming infested. Everyone recognizes the importance of this principle.

Control and Eradication

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The method chosen will depend on the particular situation. Some areas are small and can be handled either by intensive cultivation or by poisonous chemicals. If the area to be treated is extensive and a return from the land is needed, the farmer may want to use the Root Starving Rye method or other approved methods.

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RUSSIAN KNAEPEED
CENTAUREA PICRIS
Russian Knapweed—Keep it out

Russian knapweed is a relatively new weed in South Dakota. The total acreage of infestation is not large, however, there are small patches in about every county in the state.

This weed is one of the bad perennial noxious weeds. Once established, it occupies the ground to the extent that no crop will grow. Patches will spread and enlarge in alfalfa fields, although the spread is more rapid in cultivated fields.

Russian knapweed seed is most difficult to remove from alfalfa and sweet clover seed. Many of the infestations in South Dakota have been established by the planting of these small seeded legumes containing Russian knapweed seed.

How To Identify

Russian knapweed belongs to the thistle family, having a small thistle like flower, ½ to ½ inch in diameter and ranges in color from lavender to white. The leaves and stems are covered with short, stiff hairs, giving it a knap appearance—hence its name.

The stems and leaves have a distinctive, bitter taste which is one definite way of identifying the weed.

It is a perennial and spreads by underground rootstocks and by seed. The roots penetrate downward many feet, and several inches underground lateral rootstocks are formed which give rise to numerous new plants.

The rootstocks of this weed are dark brown, or black, woody and scaly. These root characteristics provide easy identification of the plant.

Russian knapweed plants have two types of leaves. The leaves on the upper stems are small and narrow with unbroken edges. The lower leaves and leaves of seedlings are large, with edges indented and resemble the leaves of dandelions.

Note the two types of leaves on the colored picture.

Livestock Do Not Eat This Weed

Some of our other noxious weeds do have some feed value for livestock, but not so with Russian knapweed. Because of the bitter taste of the stem and leaves, it is not eaten by any type of livestock. Hogs will eat the heavy, thick roots.

How To Control

The weed is not ordinarily killed by one year's cultivation. Intensive cultivation, 15 to 20 cultivations the first year, and about 10 the second year are required in order to eradicate a patch. Broken pieces of the roots will grow and produce new plants so that care must be taken in not scattering the roots with cultivating equipment.

Sodium chlorate, applied at the rate of 4 to 6 pounds per square rod, preferably in the fall of the year, will eradicate small patches. Borax applied at the rate of 20 pounds per square rod is effective.

More detailed information on control practices is available in separate circulars at County Extension offices.

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S. D. Agricultural Extension Service—U. S. Dept. of Agriculture, Cooperating
Quackgrass—An Expensive Grass

Quackgrass is a perennial, reproducing by seed and by shallow underground rootstocks. It is particularly wide spread in the northern counties of the state, but is found in all parts of the state. Uncontrolled, quackgrass will crowd out all farm crops. Cultivation control methods are of very little value during years of abundant moisture. Quackgrass spreads very rapidly if control measures are not applied. The seed is easily scattered both through harvesting operations and through planting infested crop seeds. The seed can live for a period of years before germinating.

Small patches of quackgrass will be enlarged if farm implements are operated through the patches. Of all the eight primary noxious weeds in South Dakota, quackgrass spreads the easiest by dragging pieces of root parts.

How To Identify

Quackgrass has a dark green color, wide shiny leaves and a somewhat flattened head. It has extensive shallow underground rootstocks with fibrous roots at the nodes. The roots are whiter and more succulent than the roots of brome grass or western wheatgrass.

Control And Eradication

Intensive cultivation during summer and fall months is the most practical means of eradicating quackgrass. An implement such as a springtooth cultivator that will bring the roots to the surface and expose them to the sun and wind is more effective than a duckfoot type cultivator.

Control With Small Grain and Sweet Clover Plus Intensive Cultivation

First Year: Raise small grain that is seeded to sweet clover.

Second Year: Cut sweet clover for hay. Plow the area 5 inches deep, immediately after harvesting the hay. Cultivate intensively with a spring tooth harrow until fall.

Third Year: Plant a row crop and do a thorough job of cultivating. Mop up stray plants.

This method has proved to be successful and practical in South Dakota. Quackgrass does best under favorable moisture conditions. Sweet clover hay crop shades the quackgrass and removes most of the soil moisture, preparing the land for fallowing operations. Mid-summer is usually dry and that is the time to kill quackgrass.

Specific instructions on control are available in separate circulars at County Extension offices.
Horse Nettle (Solanum Carolinense)

Horse Nettle

Horse nettle is not very common in South Dakota, being generally confined to the eastern and southern parts of the state. It has been declared noxious in South Dakota because it is very difficult to control and eradicate in cultivated fields. Horse nettle is one of the most serious weeds in Iowa and other states to the east and south.

How To Identify This Weed

One definite characteristic of horse nettle is the stiff yellow spines found on the main stem, on the branches and midrib of the leaves. The blossoms are shaped much like those of a tomato and are usually purple or whitish with a yellow center. It is a perennial reproducing by underground rootstocks and by seeds. The roots go down as far as 8 feet or more, which is one of the reasons why it is very difficult to kill.

The horse nettle plant grows to a height of about 2 feet. The vertical roots are generally killed back for about 18 inches under South Dakota winter conditions, thus it appears rather late in the spring, usually not until late in June. Plants left undisturbed grow rapidly, blossom in late July and August, and produce seed in September. The seeds are borne in small green fruit or berries which turn to a yellow brown when ripe.

Control And Eradication

To control or eradicate an established stand of horse nettle is very difficult. Regular cultivation practices are not sufficient. Summer and fall cultivations are the most effective because this weed appears in late spring. A fall crop (rye or winter wheat) followed by systematic cultivations with a duck-foot cultivator is effective. Two years or more will be required.

Small scattered patches should be killed with chemicals. Every effort should be made to prevent any plants from producing seed.

In South Dakota, the program for horse nettle is one of prevention. We should learn how to identify this weed so that if any plants get started immediate steps can be taken to eradicate them before they spread. More detailed control and eradication instructions for this weed are available in separate circulars at County Extension offices.

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