

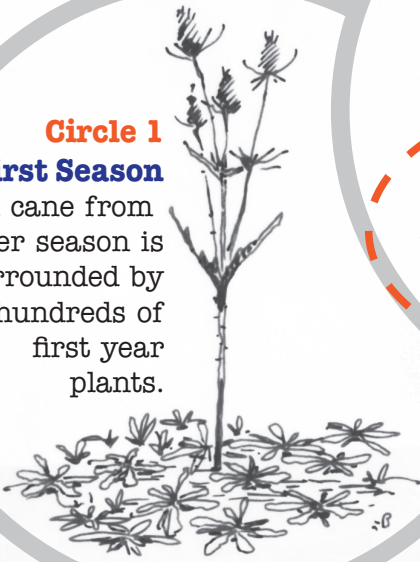
Teasel

Yearly Growth Chart

Latin name: *Dipsacus fullonum*, to be thirsty, meaning leaves hold water at leaf base. Teasel is a **monocarpic biennial** a plant that forms a basal rosette the first year. The second year the plant grows a stalk called a cane that flowers, sets seed and then dies. Hundreds of seeds produced by the parent plant begin the two year cycle over again.

Mowing can and will extend the life of a monocarpic biennial plant by several years until it flowers.

**Circle 1
First Season**
Old cane from former season is surrounded by hundreds of first year plants.



**Circle 2
Second Season**
6,000 seeds from one plant begin to germinate and form rosettes.



Seeds fall within a 5' circle around plant.

Circle 3
Teasel Rosette flowers are white or lavender



Each flower head can produce an average of **500 seeds**.

Circle 3a
Detail of basal rosette



**Circle 4
Third Season**

Is a good time to locate, map and spray out colonies of teasel.



Regenerating Rosettes

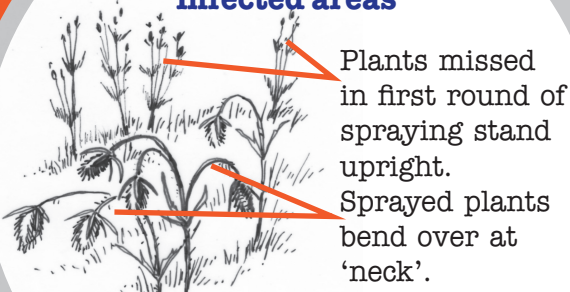
Circle 4a



Circle 11
Dime & Teasel seed size comparison.



Circle 10
Visually scout formerly infected areas

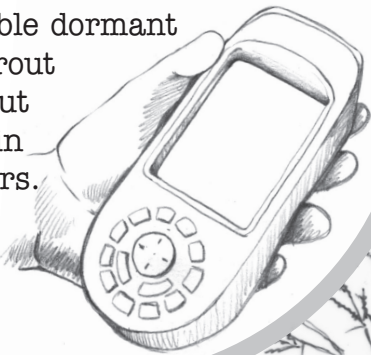


Plants missed in first round of spraying stand upright. Sprayed plants bend over at 'neck'.

Rosettes **MUST** be sprayed before plants have time to bolt & flower out.

Circle 9
Use available technology

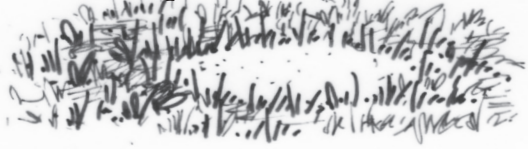
Track & mark teasel colonies using GPS technology, which keeps maps for 10 years. This can help track possible dormant seed & resprout areas to scout and spray in future years.



Circle 8
Nature abhors a vacuum

Bare spots **MUST** be re-seeded with prairie or desirable roadside plant material.

Bare spots are magnets for other invasive windblown seeds. Dormant teasel seed can wait up to 10 years before resprouting.



Circle 7
Reseeding is Vital

When a colony is sprayed out and no original turf remains, **the need to reseed is VITAL!**

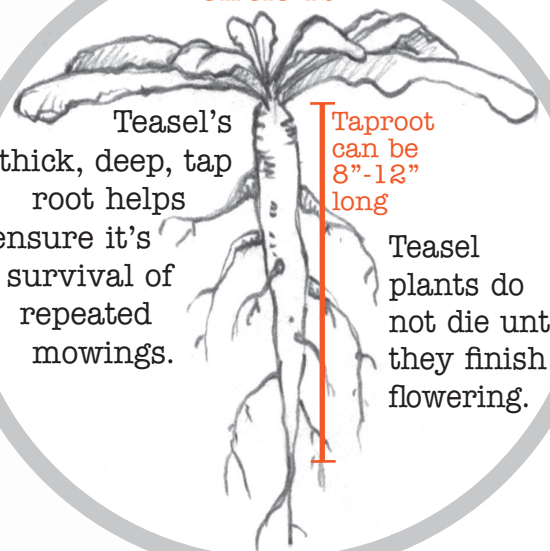


Circle 4b

Teasel's thick, deep, tap root helps ensure it's survival of repeated mowings.

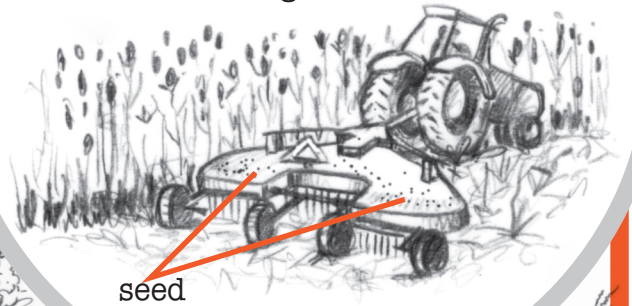
Taproot can be 8"-12" long

Teasel plants do not die until they finish flowering.



Circle 5
End of Third Season

Thick rosette carpets form, killing all original turf. Teasel seeds are spread far & wide by wind, water and as hitchhikers on the decks of riding mowers.



seed

Circle 6
Fourth Season

Rosettes that did not flower in the past season will bolt and flower before July 4th.



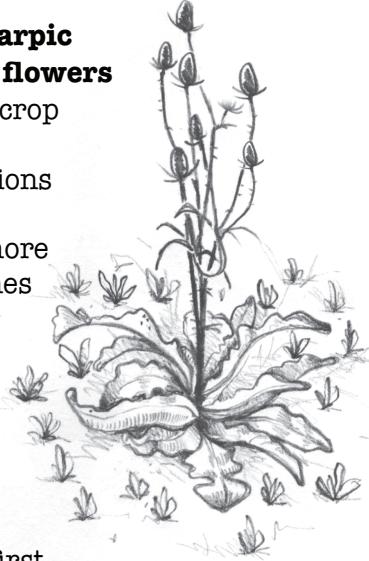
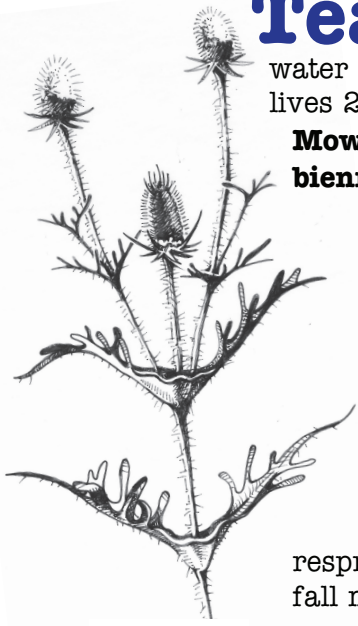
Spray BEFORE teasel flowers!

Teasel

Latin name: Dipsacus-to be thirsty, leaves hold water at leaf base. Teasel is a monocarpic biennial which normally lives 2 years, flowers and dies.

Mowing can extend the life of a monocarpic biennial plant by several years until it flowers

- * Introduced to US in 1700s as a crop
- * Heads were used to card wool
- * Escaped from old grave decorations being tossed into ditch/hillside
- * Plant grows up to 6 ft. tall or more
- * Teasel seed can float down ditches and streams
- * Mowers can spread seed over several miles
- * Teasel mown midsummer will resprout, flower & set seed in time for fall mowout.



Circle 1: First Season of Full Growth During the first growing season a single teasel plant can produce an average of 12 flowering heads per plant. Each head can produce an average of 500 seeds.

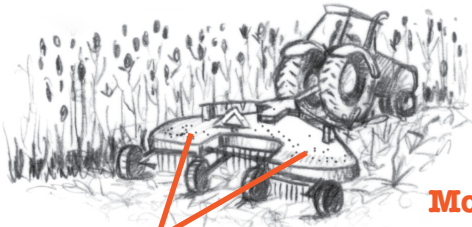
12 heads average/plant x 500 seeds per head = 6000 seeds per teasel plant

Under normal-non disturbance circumstances, seeds will drop within 5 ft. of the parent plant. Fall mowing operations can spread seed over several miles if mower decks are NOT cleaned off.

Circle 2: Second Season 6,000 seeds from each plant have the potential to germinate and form rosettes. Seeds will germinate in all types of turf, mowed and or prairie. Rosettes tolerate all soil types and conditions; waters edge, dry slopes, salty roadsides, woodland, wetland and prairie edges. Not all seed germinates the first year and can lay dormant for 10 years or longer.

Means of Seed Distribution

- Seeds wash downstream in rain events
- Seeds can be transported on mower decks
- Seeds can be transported via animals
- Seeds can be windblown



Seed hitchhiking on mower decks

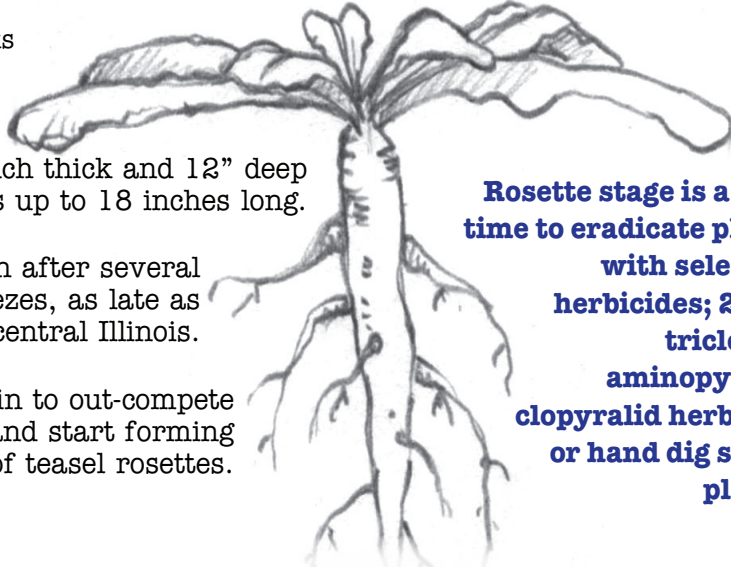
Mowing DOES NOT KILL the rosettes or canes

Plants remain in rosette stage throughout first season.

Taproots, one inch thick and 12" deep develop with leaves up to 18 inches long.

Rosettes stay green after several hard freezes, as late as mid-December in central Illinois.

Rosettes begin to out-compete existing turf and start forming carpets of teasel rosettes.



Rosette stage is a good time to eradicate plants with selective herbicides; 2-4 D, triclopyr, aminopyrid, clopyralid herbicide or hand dig single plants.

Circle 3: Third Season Rosettes regenerate from previous years old growth, forming new wide leaves 12-18" long. Teasel rosettes smother grass by forming rosette carpets. Plants send up a mainshoot, called a bolt, around mid-May. Teasel flowers are pollinated by bumble and common honeybees. Flowering begins just before the 4th of July in central Illinois. Teasel bolts and rosettes are helpful to locate plants and colonies in tall grass.

Season 3 is a good time to locate, map and spray out colonies of teasel.

Optimum time to spray teasel colonies is just before flowering.

If unable to spray in time, selectively mow out patch. Locate patch using GPS mapping. MARK ON MAP! Wait for plants to re-bolt, then spray. Don't confuse compass plant or prairie dock bolts for teasel bolts. The cost to replace lost prairie plants due to teasel displacement or inadvertent spraying is 8.2 cents per square ft. At an average of 3,600 prairie plants per acre, per 5 acre interchange can equal \$18,000 (based on average 2012 IL DOT prices).

Mowing will NOT control this plant

Teasel can and will reflower and set seed **after** mowing. Teasel MUST be sprayed or hand pulled. If not treated, **one plant** producing an average of 6,000 seeds per season, **can generate** over 3,000 plants.

Multiply each of those 3,000 plants by 6,000 seeds = **18,000,000 seeds by the second generation of teasel**

Circle 4: Third Season Mowed teasel will resprout and reflower producing viable seed. Teasel's thick taproot ensures the plants survival of repeated mowings. Teasel colonies are easily identified by lime green color and rabbit ear rosettes. Mown teasel will regenerate in time to flower and set seed before mowing out again in fall. All adjacent turf will be gone due to suppression by teasel rosette colonies.



Teasel Control Timeline

Jan.	SCT
Feb.	SCT
Mar.	SCT
Apr.	Spray 1
May.	Spray 2
June	Spray 2
July	Mow 1
Aug.	Mow 2
Sept.	Mow 2
Oct.	Spray 3
Nov.	SCT Spray 3
Dec.	SCT

SCT Scout on foot, I.D., mark locations on maps, quantify infested area locating rosette patches, teasel carpets and colonies that contain canes and rosettes. Mark on maps. Keep maps for future years to locate dormant seed re-sprouts. Add GPS units to track locations.

Spray 1 Spray single plants and colonies in cane bolt stage before flowering begins with aminopyralid/clopyralid/glyphosphate **DO NOT SPRAY STALKS THAT ARE IN FLOWER, IT'S TOO LATE. FLOWERS WILL SET-SEED!!**

Spray 2 Spray colonies and single plants that re-grow after mowing. Spraying is ok until plant flowers.

DO NOT SPRAY AFTER PLANT HAS STARTED TO FLOWER.

Mow 1 Mow colonies in flower, buying time to spray after re-growth.

Mow 2 Mowing may need to be done 2x to cut down canes that were flattened by tractor tires. Canes will re-grow with new flower heads.

Spray 3 Spray teasel rosette colonies and carpets missed and exposed during fall mowouts. Spraying can continue until 2nd hard frost causes damage to rosettes. During mild fall weather, spraying can continue until late November if there have been no hard frosts.

thick 'carpet' of rosettes. This stage is an excellent time to spray selective herbicides. Little to none of the desirable turf will remain in the teasel carpet patch. Rosettes stay green after several hard freezes. Teasel seed heads that manage to reflower and set seed are spread far and wide by fall mowouts. Teasel seed rides on top of mower decks, falling off on steep hills, embankments and bridge cones. Seed can be spread several miles as hitchhikers on mowers.

Circle 6: Fourth Season Teasel rosettes that did not fully flower the previous year will green up and reflower around the fourth of July. A motley ground cover of teasel carpet and bolting rosettes will form if left untreated.

Circle 7: Reseeding is vital When a colony is sprayed and no original turf remains, the need to reseed is vital. Map bare areas via GPS to monitor dormant seed resprouts.

Circle 8: Nature abhors a vaccum Bare spots must be reseeded with good prairie or desirable roadside plant material. Dormant teasel seed remains in soil and will re-sprout if not hindered by competition.

Circle 9: Use available technology Track & mark locations of teasel colonies with GPS units, maps etc.

Circle 10: Visually scout formerly infected areas Scout areas and track to spray rosettes before they bolt.