Direct Seeding - Illinois

A Reforestation Guide

-2003-

ILLINOIS
NATURAL RESOURCES
SWCD

TABLE OF CONTENTS

TABLE OF CONTENTS

Table of Contents

Appendix

CHAPTER 1

INTRODUCTION TO DIRECT SEEDING

Row seeding with tree planter

DIRECT SEEDING SUBCOMMITTEE

of the Association of Illinois Soil and Water Conservation Districts (AISWCD) Forestry Committee

Bob Sloan
AISWCD Forestry Committee Chair

Dan Schmoker, Forester
IDNR-Division of Forest Resources

Ray Herman, Volunteer
Champaign County SWCD

Tom Ward, Agroforester
USDA-Natural Resources Conservation Service

SWCDs Promoting Direct Seeding

Direct Seeding Coordinators

Direct Seeding Coordinator Responsibilities

-
-

DIRECT SEEDING TECHNICAL CONTACTS

Technical Contact Responsibilities

Brown County
Todd Reische

Jersey County
Jacquie Simon
DC, SWCD

Jo Davia0.63sunty

Lee County
Brenda Merriman
RC, SWCD

Logan County
Steve Bracey
RC, SWCD

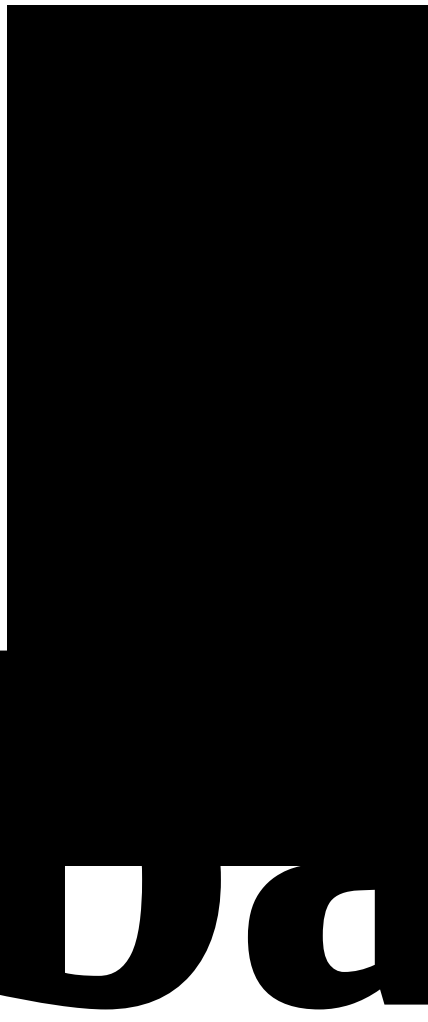
Marshall-Putnam
Randy Edwards
DC, USDA-NRCS

McDonough County
David King
RC&D Coordinator
Prairie Hills RC&D Inc.

Piatt County
Abbie Sperry
RC,SWCD

Direct Seeding Coordinators & Technical Contacts by County

Coordinators	Technical Contacts
Schuyler County	
Larry Shelts RC, SWCD	Matt Peterson District Forester, IDNR
Vermilion County	
Resource Conservationist SWCD	Jay Hayek District Forester, IDNR
Wabash County	
Charles Trimble RC, SWCD	Clint Patterson District Forester, IDNR



List of County Contacts

Name	Address	Telephone, E-mail	Resource Provided

List of County Support Persons

Name	Address	Telephone, E-mail	Resource Provided

***Direct Seeding.**

***Direct Seeding.**

***Direct Seeding Hardwoods on the Cache River Joint Venture.**

Growing Illinois Trees From Seed.

"Growing Illinois Trees from Seed" *IL Steward Magazine,*

Guide to Regeneration of Bottomland Hardwoods.

*** "Nuts to Forestry: New Technology for New Forests."** *Iowa Conservationist*

Oak Regeneration: Serious Problems, Practical Solutions.

CHAPTER 2
OVERVIEW OF DIRECT SEEDING

I

Illinois

Contact name	Location and Telephone Number	Type of activity

Adjoining States

Contact name	Location and Telephone Number	Type of activity

Opportunities and Challenges

Opportunities

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Challenges

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Items that will make direct seeding successful:

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REFERENCES

*__Direct Seeding.__

*__Direct Seeding.__

*__Direct Seeding Hardwoods on the Cache River Joint Venture.__

__Growing Illinois Trees From Seed.__

__Growing Trees from Seed.__ *IL Steward Magazine*

__* "Nuts to Forestry: New Technology for New Forests."__
Iowa Conservationist

__Seed Collection Manual.__

__"Seven Rules for Direct Seeding Success."__

Copy provided in Appendix of Direct Seeding Handbook.

NOTE: *Copies of all of the above are available for up to a 2-week loan from the NRCS State Agroforester. Some references may also be available from IDNR District Foresters, the IDNR Forest Management Staff Forester, and the State Cooperative Extension Forester.*

Species Lists and Species R

PLANT SUITABILITY Z Z ZABILITY

Species Lists

Bottomland Species

highest, best drained sites to those adapted to the lowest, most poorly drained sites.

Common Name	Scientific Name	Planting Zone *

Common Name	Scientific Name	Planting Zone *

*See planting zone map on page 3-3.

Upland Species

Common Name	Scientific Name	Planting Zone *

*See planting zone map on page 3-3.

SPECIES REFERENCE SHEETS

REFERENCES

Missouri's Oaks and Hickories.

Seed Collection Manual.

Seeds of Woody Plants in the United States.

Seeds of Woody Plants in North America.

Silvics of North America,

Trees of Missouri.

USDA PLANTS database.

Photographs and Illustrations:

CHAPTER 4
ORGANIZING FOR LOCAL COLLECTION

Local Collectors

The following space is reserved to record local collectors.

Collector List for _____ County, Illinois

Copy this form and keep the original in your binder.

Name (individual or group)	Address	Telephone, E-mail

SEED NEEDS

Copy this form and keep the original in your handbook.

Seed Needs for Fall or Spring Direct Seeding - _____ County, Illinois

Cooperator Name	Address	Telephone	E-mail	Farm and Tract Number	Acres	Species	Pounds

SEED NEEDS

Copy this form and keep the original in your handbook.

Seed Needs for Fall or Spring Direct Seeding - _____ County, Illinois

Cooperator Name	Address	Telephone	E-mail	Farm and Tract Number	Acres	Species	Pounds

Conservation Trees and Shrubs.

Forest Trees of Illinois.

Missouri's Oaks and Hickories.

Summer Tree Finder.

CHAPTER 5
COLLECTING THE SEEDS

-
-
-

Sites, and Methods of Collection

-
-

When, Where and How of Woody Seed and Nut

When, Where and

Pecan	Persimmon	Sycamore
Normal Seed Maturity	Normal Seed Maturity	Normal Seed Maturity
Quality Collection Sites	Quality Collection Sites	Quality Collection Sites
Methods of Collection	Methods of Collection	Methods of Collection

Key Points

1.
2.
3.
4.
5.
6.
7.
8.

Specific Points

Ash

Baldcypress

Black Cherry

Tuliptree *Yellow-Poplar*

Black Walnut

REFERENCES

Growing Illinois Trees From Seed.

Seed Collection Manual.

Seeds of Woody Plants in the United States.

OR
Seeds of Woody Plants in North America.

NOTE: *Copies of all of the above are available for up to a 2-week loan from the NRCS State Agroforester. Some references may also be available from IDNR District Foresters, the IDNR Forest Management Staff Forester, and the State Cooperative Extension Forester.*

INTRODUCTION

Handling and Storage Requirements by Species

General Rules of Thumb

1)

2)

3)

4)

5)

6)

7)

Baldcypress

Handling

Storage

Stratification

Black Cherry

Handling

Storage

Persimmon

Handling

Sycamore

Handling

Tuliptree *Yellow-Poplar*

Handling

Storage

Stratification

Black Walnut

Handling

Storage

Stratification

Simple Tests to Assure Quality

1)

2)

3)

Transportation and Delivery Requirements

1)

2)

3)

4)

5)

6)

7)

8)

REFERENCES

Seed Biology and Technology of Quercus

Seed Collection Manual.

Seeds of Woody Plants in the United States.

OR
Seeds of Woody Plants in North America.

NOTE: *Copies of all of the above are available for up to a 2-week loan from the NRCS State Agroforester. Some references may also be available from IDNR District Foresters, the IDNR Forest Management Staff Forester, and the State Cooperative Extension Forester.*

CHAPTER 7

ILLINOIS STANDARDS AND SPECIFICATIONS FOR DIRECT SEEDING

INTRODUCTION

NA

PLANS AND SPECIFICATIONS

Site Preparation

Species to Use

Seeding Rate

OPERATION AND MAINTENANCE

the seed. Seed may be planted mechanically or 1j

Seeding Methods

REFERENCES

Seeds of Woody Plants in the United States.

OR
Seeds of Woody Plants in North America.

Silvics of North America,

Growing Illinois Trees From Seed.

Seed Collection Manual.

Direct Seeding Hardwoods on the Cache River Joint Venture.

Oak Regeneration: Serious Problems, Practical Solutions.

Guide to Regeneration of Bottomland Hardwoods.

Seed Biology and Technology of Quercus.

Regeneration of Oaks by Direct Seeding.

NOTE: *Copies of all of the above are available for up to a 2-week loan from the NRCS State Agroforester. Some references may also be available from IDNR District Foresters, the IDNR Forest Management Staff Forester, and the State Cooperative Extension Forester.*

CHAPTER
PLANTATION ESTABLISHMENT

INTRODUCTION

CHEMICAL VEGETATION CONTROL*

your objective

Site Preparation:

* *Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. Persons using such products assume responsibility for their use in accordance with current label directions of the manufacturer.*

Preemergence

Table 1

Herbicides for First Year Preemergent Weed Control

Table 2

Postemergent Weed Control

		*may cause damage**
		*may cause damage**
		*may cause damage**
Exhibits both preemergent and postemergent activity		*may cause damage**

** Damage will be minor, usually consisting of leaf discoloration and arrested growth. Trees generally recover.*

Points to keep in mind

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Ö **Bottom Line:**

MECHANICAL VEGETATION CONTROL

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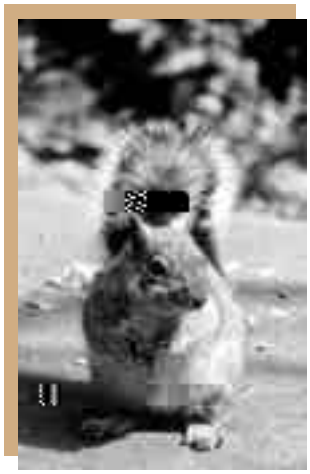
Wildlife Damage Management



Annual Inspection

DIRECT SEEDING INSPECTION DATA SHEET

Copy this form and keep the original in your binder.

Landowner _____ **Farm No.** _____ **Tract No.** _____

Sec. _____ **TWN** _____ **RGE** _____ **Acres** _____

Species Planted _____

Condition of Site Prep or Annual Weed Control _____

Planting Method _____ **Soil Series** _____ **Spacing and Seed/Ac** _____

Planted by _____ **Planting Dates** _____

Inspected by _____ **Inspection date** _____

Risk of Wildlife Damage _____

Plot No.	Species	Approximate Height and Condition	Plot No.	Species	Approximate Height and Condition

Direct Seeding Summary Data Sheet

Copy this form and keep the original in your binder.

Plot No. Species	**No./ac**	**Approximate Average Height and Condition**	**Plot No. Species**	**No./ac**	**Approximate Average Height and Condition**
Plot No. Species	**No./ac**	**Approximate Average Height and Condition**	**Plot No. Species**	**No./ac**	**Approximate Average Height and Condition**
Plot No. Species	**No./ac**	**Approximate Average Height and Condition**	**Plot No. Species**	**No./ac**	**Approximate Average Height and Condition**
Plot No. Species	**No./ac**	**Approximate Average Height and Condition**	**Plot No. Species**	**No./ac**	**Approximate Average Height and Condition**

SUBTOTALS

Species	**Avg No./ac**	**Average Height**	**Average Condition**

Grand Total **Average No./Acre ______** **Average Condition __________** **Average Height ________**

APPENDIX

Summary Table of Seed Data and Average Prices

Bottomland Species

Common Name	Ave Seed/#	Approx Retail Price *	IDNR Purchase Price **

* 1998 prices from several commercial seed vendors.

** Prices as of October 2000 are subject to change. Contact a local DNR Forester for the required seed collection permit.

Upland Species

Seed B

Contract Planters and Consulting Foresters

Who Advertise Direct Seeding (as of 10/2000)

Roy Bailey

Bundy Tree Farm

Mick Cherry

Cascade Forestry

Tony Colvin

Forest Improvement Services

Forest Management Services, Inc.

Full Circle Forestry

Michael G. Hamilton

Steve Hamilton

Jerry Heinz

Manning Tree Farm

Shane Morris

Oakwood Timber Improvement Service

One-Stop Forestry

Prairie Hills Forestry Consulting

Dan Price

Paul Roth

Dave Steere

Timber Services

Woodland Forestry Consulting

EQUIPMENT SUPPLIERS (TREE SEEDERS AND PLANTERS - MAY, 2000)

Seed Poundages Required for Direct Seeding

			*					
Bitternut Hickory	125-185	156	17	20	24	26	31	39
Black Oak	125-400	245	8	13	24	12	20	39
Black Walnut	11-100	40	30	75	272	48	120	436
Bur Oak	40-135	75	23	40	75	36	64	120
Cherrybark Oak	420-745	580	4	5	7	7	9	12
Chinkapin Oak	263-520	395	6	8	12	10	13	19
Mockernut Hickory	34-113	90	27	34	88	43	54	142
Northern Red Oak	75-256	125	12	24	40	19	39	64
Nuttall Oak	56-143	95	21	32	54	34	51	86
Overcup Oak	139-154	140	20	22	23	31	35	37
Pecan	151-174	162	18	19	20	28	30	32
Persimmon	665-1764	120.770.639610c (31) T68 0 TD2-15 0.23178-360 TD -0.639108 0 -20Tj 108 0 7460.286						

0 TD -0.2803 Tc 0 Tw (263-520) Tj 72 0 TD -0.4075 TTD 0.0725 Tc (0 TD -0.28 0.0725 Tc (4) T

40 19

completely dry. Crack open a bunch of the nuts to make sure they are OK. The nut meats should be moist, firm and brightly colored. If you think you have a bad batch, clean off the hulls and caps, and float them. Most of the bad seed will float. Keep and

If you have grass or weeds in or within 50 feet of your planting site, they must be eliminated as completely as possible for at least the first growing season. Plowing, disking or burning will provide some short-term control. These practices need to be followed up with herbicide applications to provide weed control for at least the first 90 days of the growing season. Mowing is not an acceptable grass control practice by itself because it does nothing to eliminate the grass roots, and even very short mowing may not reduce the mouse population to acceptable levels.

The new seedling that grows from the acorn or walnut uses almost all of the food reserves stored within the nut itself within the first 20 to 30 days of growth. At this time the seedling has only a few small leaves to collect sunlight and make food for the plant. Dry soil, shade from weeds, or insect or rodent damage at this stage can cause serious problems. Young seedlings are very vulnerable during the first 60 to 90 days of growth, and therefore, must have almost perfect growing conditions to make maximum growth. It is certainly possible to get seedlings firmly established and 6 to 12 inches tall by the end of the first growing season. Many people have observed that once the direct seeded seedling has completed its first growing season in good shape, it does exceptionally well in the following years. It seems to make up for a slower first year by not suffering the “transplant shock” a nursery seedling goes through.

Use machines for larger plantings. Tree planting machines can be used successfully if you can accurately limit their planting depth, and you have a very low gear on your tractor. You will need to go one m.p.h., and drop one nut every second (difficult to do) in order to have your seeds planted 18 inches apart.

High-density plantings seem to be the most successful. Planting seeds six inches apart in the row seems to help the new seedlings get off to a faster

60 walnut uses almost all of seedling ... 9 2 rototyp

Seven Rules
for Direct Seeding Success

Plant live seed.

Plant at the right depth.

Manage rodents and their habitat.

Use lots of seed.

Control competition.

Match species to the site.

Use combinations of species.

Direct Seeding Hardwoods
on the
Cache River Joint Venture

by
Dave Maginel and Max D. Hutchinson
The Nature Conservancy
January 1997

COLLECTION AND

Here are some considerations for the proper handling of acorns:

- Acorns loose their viability if they become dehydrated, therefore, collect them SOON after they drop.
- Store the collected acorns in breathable bags such as onion sacks, burlap bags or standard feed sacks. These bags will reduce heat buildup, allow the seed to breathe and permit excess moisture to drain off.
-

Species:	Seeding Rate:
· Ash (green, white, black combined)	1/2 - 1 bu./acre
· Red Oak	1/2 - 2 bu./acre
· White Oak	1/4 - 1 bu./acre
· Black Walnut	10 - 15 bu./acre
· Bur Oak	1/2 - 1 bu./acre
· Swamp White Oak	1/4 - 1 bu/acre
· Shagbark Hickory	1/4 - 1 bu./acre
· Sugar Maple	1/8 - 1/2 bu./acre
· Black Cherry	1/4 - 1/2 lb./acre

Seeding: The acorns, walnuts and hickory nuts should be seeded first by broadcasting over the entire field. Disk these in to a depth of 1/2 to 2 inches. Then broadcast the ash, cherry and maple seed and lightly disk, culti-pack, or drag to a depth of 1/4 to 1/2 inch. Seeding labor costs will range from $60/acre up to $110/acre depending on the size of the project and its proximity to Postville.

Maintenance: At least one other advantage of direct seedings is the shortened period of maintenance required to control competing grasses and broadleaf weeds. Ten thousand seedlings per acre will shade out the competition much sooner than 700, often within a period of three years. We have yet to settle on an exact prescription for chemical weed control, but we feel we're getting close. Currently, our first year weed control recommendation is a fall or early spring application of Goal herbicide at a rate of 2-3 qts/acre. Goal is a pre-emergent product that controls a number of annual grass and broadleaf weeds. Another option is to wait for the weeds to sprout, identify them and treat in early to mid June using Transline at a rate of 1/2 to 3/4 pint per acre to control broadleaves and Envoy at 1 pint/acre for grasses. Best results will be seen when spraying weeds less than 12" tall.

The second years' application will depend on the competition observed after the first growing season. Typically we are applying, in the fall or early spring a solution of 1/2 oz./acre of Oust and 2 qts./acre of Princep. Another alternative may be to repeat the Transline and/or Envoy treatment at the beginning of the second growing season. The need for chemical weed control after the second growing season should become more of a spot spraying concern. By the end of 3 growing seasons many of the seedlings should be 6' or more in height and 1" caliper. At this point the planting Is on its own until the first thinning after year 9 or 10.

Most of the above applications will run from $40/acre up to as much as $75/acre depending on herbicides and rates used.

For years the standard practice in tree planting has been the use of seedlings, with a planting rate of 500 to 1,000 per acre and 5 to 10 years of follow up weed control until the site is occupied by the trees.

F-363/November 1999

IOWA STATE UNIVERSITY
University Extension

Ames, Iowa

Species	Bushels per Acre
Green or white ash, hard maple	1
Oaks, hickory, coffeetree	3-4
Black walnut	10-15

Weed Control

Most tree plantations including seedling established or those established using seed, suffer from intense competition resulting in poor survival and growth until the trees fully occupy the site. Once the canopies or foliage area of the trees shade the site, weed and grass competition is no longer a growth factor. In fact, at that stage, the plantation begins to function like a forest, not an open or grass field. One potential advantage of using seed is the ability to plant larger number of trees, reducing the time to full occupancy of the site by the trees. Large number of trees may also aid in the development of better tree form. Trees which are crowded during early development form straighter trunks and begin self pruning at an earlier age; however, these plantations may require earlier thinning than wider spaced plantings. The practice of planting large number of seeds has had limited although expanding use in Iowa.

As with more traditional plantings, weed control is still essential for good survival and growth. Work with your district forester or consultant for the best method. The first growing season is critical as the seed germinates, begins to grow and must compete with weeds on Iowa's fertile soi3sCr sis ,o93 0.TMost ofchemticaks andtechniquees which ma.

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CONSERVATION RESERVE ENHANCEMENT PROGRAM

Riparian Forest Buffers CP22 Plan

Prepared for:

PROJECT DATA

IFDA/CREP DIRECT SEEDING PLAN

LANDOWNER GOALS

To establish a stand of forest trees in order to satisfy the program requirements of the Conservation Reserve Enhancement Program's CP22 practice, create/improve habitat for wildlife, generate raw material for wood production, provide recreational opportunities, and provide aesthetic beauty. Multiple benefits of your Riparian Forest Buffer practice may easily be derived with proper planning, patience, and effort.

BENEFITS OF DIRECT SEEDING AND EXISTING FORESTS

Trees beautify the landscape, enhance water quality by filtering sediment and absorbing excess nutrients and pollutants, protect and improve streams, regulate stream water temperatures for aquatic benefit, replenish water tables, conserve and stabilize soil, provide the raw materials for our homes, serve as preserves of biological diversity, shape the recreational landscape, mitigate flood damage, create riparian habitat and corridors for wildlife, prevent erosion of streambanks, increase global oxygen levels, reduce so-called green-house gases, sequester carbon, clean pollutants from the air, provide shade and buffers against high winds, and wate6 8 Tw latyoight tralleaovid be255tables,n, clrece sr stacernd imlxygenstatsiln

DIRECT SEEDING SITE RECOMMENDATIONS

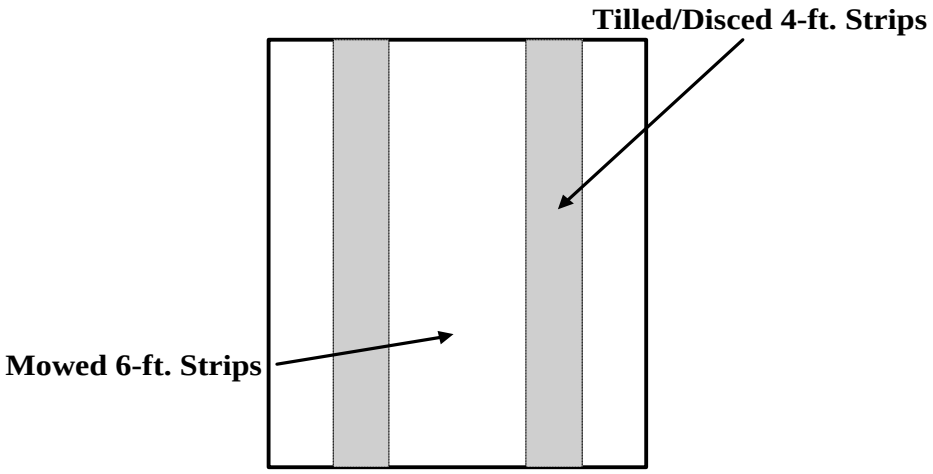
All direct seedings must meet the standards as set forth in **Appendix 2** - *Section 1536.30*. Approval and allocation of cost share monies will be contingent upon meeting these standards.

SITE PREPARATION

(In Central Illinois, the number one cause of plantation failure or stunted growth is the planting of seedlings into sod-forming grasses (brome, fescue, orchard grass, etc.). Therefore, it is in the best interest of the landowner and the trees to prepare the site for the establishment of a suitable and "tree-friendly" cover crop)

Direct Seeding - Site preparation will vary with the method of direct seeding that is used. If you are using a commercial direct-seeder, the rows should be worked as if you were planting a crop. If you are row seeding, mow the site to eliminate rodent/rabbit habitat and to facilitate the seeding process. Till/disc (tilling is more effective) 4-ft strips across the planting site while alternating with 6-ft non-disced/tilled strips. Areas to be broadcast seeded need to be completely worked prior to broadcasting the seed. If the area is in heavy grass/ sod, you should burn and then plow/chisel and disc the field. If the sod comes up in large clumps, then you must disc the field again to reduce the soil clod size. If the site is currently in soybeans, simply broadcast the seed following the bean harvest and disc-in the tree seed. If the field is in corn, disc the stubble once after the harvest, then broadcast the seed and disc-in. The final step using the broadcast method is to culti-pack the site to ensure firm soil-to-seed contact and to eliminate air pockets.

If the seeding site has been grazed by cattle, sheep, etc., then the areas to be seeded **must** be ripped/chisel-plowed to ameliorate the compacted soil – if this step is not completed, the survival and probability of a successful seeding may be virtually eliminated. Grassy fields may need to be mowed or broadcast sprayed with herbicide (see ***Herbicide Appendix***) to kill existing grass cover. To control perennial grasses such as brome, fescue, and orchard grass prior to seeding, mow in mid-August and broadcast 1 ½ - 2 qt. *RoundUp Pro* plus surfactant when regrowth is 6-inches tall. Add ½ pint of 2,4-D if legumes are present. The second best way to kill these perennials is in the Spring to mow or burn if there is much litter, wait for 6-inches of regrowth, then broadcast 1 quart *RoundUp Pro* and ¾ oz. *Oust* and wait as long as possible before direct seeding (residual *Oust* may negatively affect seed germination). After the grass has browned, plow and disc the areas in order to prepare a good seed bed. Plowing and then discing is the most effective means of site prep tillage. The field should look ready to plant corn. If erosion is a severe problem, then leave strips oriented across the slopes at variable spacing depending upon the steepness and length of the slopes.



TEMPORARY COVER CROPS

Row Seeding - If a commercial row-seeder is used, it is important that the site is disced heavily and a cover crop planted. Winter wheat at 15-35 lbs./ac, annual cereal rye at 15-35 lbs./ac, or oats at a rate of 15 lbs./acre should be applied prior to direct seeding. Oats is recommended over rye and wheat due to the fact that it is not as prolific in its re-seeding. The wheat, rye, and oats at this rate will not compete with the seedlings and will actually serve to protect (nurse) the young seedlings from the sun and wind during the hot summer

DIRECT SEEDING

Direct Seeding

Field 1 – *assuming broadcast seeding rates (5,000-hardmast seeds/ac)*.

All species substitutions **must be approved by the District Forester.*
*** Total seed per acre represents hardmast seed only.*

If you seed the practice yourself, please keep track of your hours as well as expenses (tractor gas, rental equipment, etc.) for potential cost share reimbursement. If you hire a contractor, do not pay the contractor until the District Forester has approved the direct seeding project.

VEGETATION CONTROL

Weed and grass control around each tree is required of your practice in order to receive *establishment* cost-share benefits. Herbicide applications are recommended as an effective and economical way to control both grasses and broadleaf weeds, to maintain rows (if row seeding) and to facilitate growth and survival of the new trees.

Table 1. Herbicides for First Year Pre-emergent Weed Control

Chemical	Controls	Rate/Acre
Pendulum	Grasses and Some Broadleaves	2-4 qts. or 3.3 lbs.
Surflan	Grasses and Some Broadleaves	2-4 qt.
Goal	Grasses and Broadleaves	½ - 1 lb.
Pennant	Grasses and some yellow nutsedge	16 – 32 oz.

Table 2. Herbicides for Post Emergent

Either apply a 48-inch band (if row seeding) or broadcast spray the entire site (if broadcast seeding) in the fall after the seed is incorporated into the soil using 2 –4 qt. or 3.3 lbs./acre of *Pendulum (or a selected herbicide in table 1)*. If a fall herbicide was not applied, use the above *Pendulum (or a selected herbicide in table 1)* treatment in the spring. By mid-June, an application of *Transline (or a selected herbicide in table 2)* at a rate of 8 – 12 oz./acre to control broadleaves and/or *Envoy (or selected herbicide in table 2)* at 17 – 34 oz./acre to control grasses may be needed. The second year's herbicide application will depend on the competition observed after the first growing season. The need for chemical weed control after the second growing season should become more of a spot spraying job (assuming broadcast seeding was used at higher rates).

Read and follow all herbicide label directions carefully. ***Two additional years*** *of vegetation control (post tree establishment) are required to control competing vegetation and to facilitate any mowing that* ***may*** *be needed. Cost-share assistance for two sprayings within the first 24 months of your practice establishment is available through your county FSA office. Additional assistance for spraying may be available to you from IFDA, but only if funding exists. However, you are obligated to spray even if cost-share funding is not available.* **Cost-share assistance will not be approved if the vegetation control is not applied.**

Mowing

Mowing does not control the roots of competing vegetation. However, it is an important aspect in controlling the height of competing vegetation, identifying tree rows, and reducing rodent habitat in the fall and winter. There is some indication (although not conclusive) that mowing may increase deer browsing on dormant seedlings in the winter. Therefore, my recommendations are:

1. Do not mow if you have a **well established**, recommended conservation cover crop (e.g., rye, oats, timothy and/or redtop) that is keeping out undesirable vegetation.
2. Mow once prior to May 1st to avoid affecting ground-nesting birds and to identify rows.
3. Mow only half of your plantation after September 30th
4. This is a test to see how prevalent deer browsing is around and in your tree plantation.
5. ***If deer browsing becomes a problem in your tree plantation...then discontinue mowing***
6. ***If deer are not a problem...then continue to mow***
7. If rodent (rabbits, mice, voles, etc.) damage is high…then continue to mow (nuisance permits for rabbits *may* be available from IDNR Wildlife Biologists).

Mowing is not eligible for cost-share reimbursement in CRP/CREP practices or with IFDA. A $5/ acre maintenance supplement is included with your annual payment from the Farm Service Agency (FSA) and should be used to offset the cost of mowing.

RESOURCE PROTECTION

Protecting your direct seeding project to ensure survival and growth is required at all times. Livestock grazing and fire ***must*** be excluded from your seeding area. Inspect your trees periodically during the growing season. Remedial steps may need to be taken when/if appropriate. Browsing damage from wildlife and damage from pest and pathogens may occur in your seeding site and should immediately be brought to the attention of the District Forester. If threatened or endangered species are discovered, this plan should be reviewed and modified, if needed, to protect those species.

MAINTENANCE SCHEDULE

(fall seeding)

The following schedule has been developed in order to give you direction and to help you prioritize the recommended practices in your plan. Deviation from this schedule must be cleared with the District Forester. Consulting foresters and contractors are available to perform many of the practices recommended in your plan. Regardless of how the work is carried out, you are responsible for seeing that these practices are carried out according to the specifications set forth in your management plan.

YEAR	PRACTICE	STAND	ACRES
Fall 2000*/Spring 2001	Establish Conservation Cover Crop (only if row seeding)	1	All
Fall 2001	Commence Direct Seeding Project (seeding site/rows must have received site prep) Apply Herbicide** from Table 1	1	All
Spring 2002	Apply Herbicide from Table 1 (if not applied the previous fall)	1	All
Early June 2002	Mow*** Non-Seeded Strips (if row seeding)		
Mid-June 2002	Apply Herbicide from Table 2 (use as rescue treatment **only if necessary**)	1	All

PERFORMANCE CRITERIA

Natural factors beyond our control, i.e., late-spring flooding that extends into summer, a droughty spring after planting, and deer and small mammal depredation – can cause failure. Therefore, this practice will be completed when at least 300 - 450 seedlings/acre of the desired species are in a "free to grow" condition, that is equal to or greater than the height of all competing vegetation, out of reach of deer browse (usually 5 feet), and with a ground level caliper of at least 1 inch, deterring rabbit girdling. Sample plots should be mil-acre (1/1000 of an acre) size for broadcast areas. This is a circular plot with a radius of 3 feet 8.7 inches, which can be measured using string from a center point or making a permanent plot. Twenty-five is the minimum number of plots for any seeded area. To get the number of seedlings per acre on the area, a two-step process in involved: (1) Get an average number of seedlings per plot by dividing the total number of counted seedling by the total number of plots (2) Multiply the average number of seedling per plot by 1,000…this then will provide you with the average number of seedlings per acre.

COST-SHARE ASSISTANCE

(be sure to read and understand)

Various State and Federal cost-share (C/S) programs are available to help you implement your practices as

PERFOR66ders0T

PROGRAM RESTRICTIONS

- If after (3) growing seasons you have failed to plant seedlings, direct seed, or naturally regenerate your CRP practice with a minimum stocking of 300 trees/acre, you may be removed from both the Federal and State program for noncompliance.

- Converting CRP tree plantings to other types of land use will result in repayment of state cost-share payments associated with the planting. This penalty applies to practices not maintained for a minimum of 10 years from the date the practice was established and approved. This does not necessarily coincide with the management plan approval date or any concurrent federal programs on this acreage.

- Repayment of all cost-share monies earned if the management plan is not followed. This penalty also applies in the event of land ownership changes and the new owner does not assume all obligations under this management plan.

- Any planting stock obtained from the state nurseries cannot be removed from the property with the roots attached. This restriction is binding to all subsequent landowners.

- Modifications to this plan must be approved by the landowner and the District Forester. Any changes must be submitted in writing and documented by amending the original certification indicating the change with the appropriate dates and initials. The original plan approval date does not change.

- Must return annual review letter to retain your participation in IFDA program.

- It is unlawful to use state produced plants and plant materials for ornamental plantings, shade trees, landscaping, banquet or party favors or commercial promotion (17 IL Adm. Code; Chapter 1; Section 1540.30; Paragraph d).

- **For direct seeding, the cost-share practice may be attempted a second time if, by no fault of the land-owner, fewer than 300 seedlings of acceptable size per acre survive after one full growing season.

- **For direct seeding projects, if after two full growing seasons there are fewer than 300 seedlings of acceptable size per acre no further attempts will be made to direct seed and seedlings will have to planted.

CONCLUSION

Signing the management plan certification initiates a partnership between you and the Illinois Department of Natural Resources (IDNR). By accomplishing the objectives in your plan, you will have demonstrated your commitment to the principles of land stewardship. It is important for you to read and understand your plan and the information in the appendices. Do not sign the certification page of this plan until all questions and concerns have been resolved to your complete satisfaction. Any future decisions regarding your forest resources should be carried out in consultation with a professional forester.

This plan prepared by

IDNR Seed Price List *

** October 2000 prices are subject to change. Contact a local DNR District Forester to obtain the required seed collection permit.*

Species	Price per Pound
	husked
	husked
	husked

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Represented

Not Represented

General Comments

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Represented

Not Represented

Mockernut Hickory

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Represented

Not Represented

General Comments

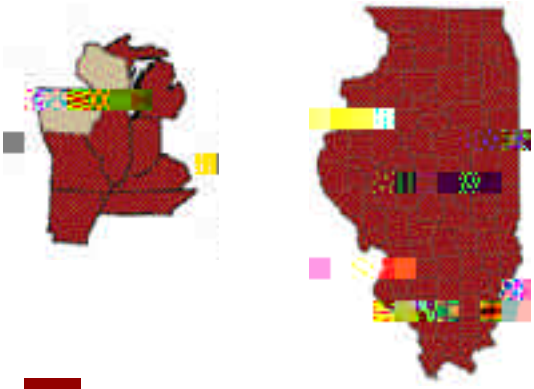
Special Notes

Seeds may be s

Pignut Hickory

Distribution & Adaptability

Neighboring States **Illinois**



Represented

Not Represented

Description:

Pignut hickory grows best on dry upland soils.

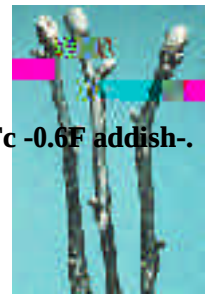
Stou us; 1ight2epachecial No56Q Bes

Gen ral om ents

Special Notes

Twigs:

Rounded buds with a short point at the ti.p0.045nded budaTf 0.012 T 1.1Tf 0.05170Tc -0.6F addish-. Shinutre



Bark:

Distribution & Adaptability

Neighboring States **Illinois**

Represented

Not Represented

General Comments

Special Notes

Description:

Shagbark hickory typically grows best on well drained bottomland soils, but more commonly occurs throughout upland woods.

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Represented

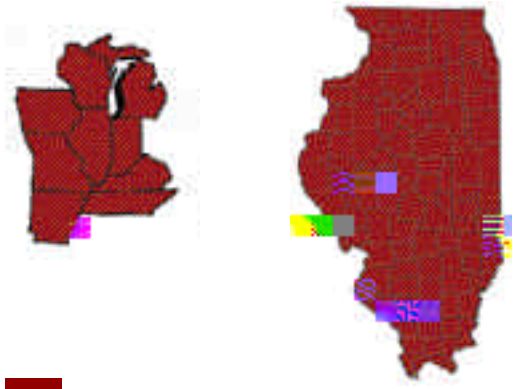
Not Represented

General Comments

Black Oak

Distribution & Adaptability

Neighboring States **Illinois**



Represented

Not Represented

General Comments

Special Notes

Description:

Leaves: **7 to 9 deep to shallow lobes in leaves 10 inches long and 8 inches wide. Tips of lobes separate into smaller lobes with bristled tips.**

often hairy along veins below.

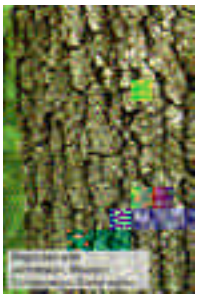
Fruit:

Scaly cap with ragged edges; covers approximately ½ of the nut.

Twigs:

Long buds, up to ½ inch; angular and hairy; usually gray to gray-brown.

Bark: **The bright orange to yellow inner bark distinguishes the black oak from red oak and Shumard oak.**



Bur Oak

Distribution & Adaptability

Neighboring States **Illinois**

Represented

Not Represented

Description:

the bur oak has the largest leaves and acorns of all native oaks.

Leaves:

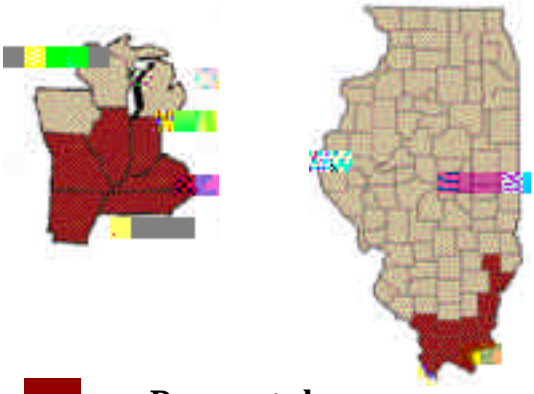
Lobes below the middle cut nearly to the midvein. Up to 14 inches long and 7 inches wide. Broadest at the top.

Fruit: **Up to 1¾ inch in diameter. Scaly cap; long, hairy fringe; covers over ½, sometimes nearly all, of the acorn.**

Cherrybark Oak

Distribution & Adaptability

Neighboring States **Illinois**



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Not Represented

General Comments

Special Notes

Description: **Cherrybark oak is named for the bark's similarity to that of black cherry.**

Leaves: **5 to 11 pointed lobes at nearly right angles to the midrib. Lobes cut almost ½ way to the midrib.**

Fruit: **Finely hairy cap; covers less than 1/3 of the length of the acorn. Bright orange nut when cut.**

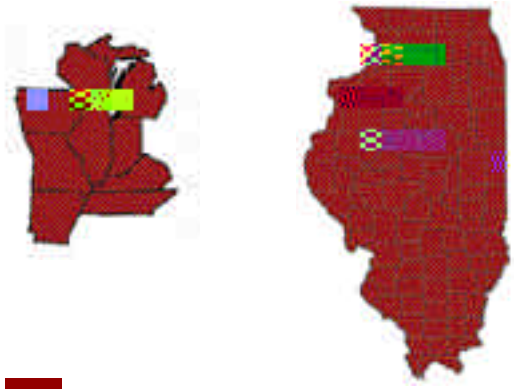
Twigs: **Stout.**

Bark: **Dark gray. Small scales with narrow ridges.**

Chinkapin Oak

Distribution & Adaptability

Neighboring States **Illinois**



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General Comments

Acorns have no dormancy and are similar to white oak in their tendency to sprout

Special Notes

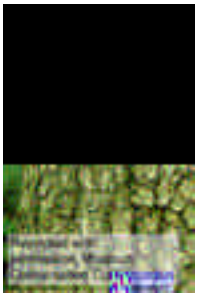
Description:

soil pH near or above 7.0.

Leaves: **Saw toothed margins, widening toward a pointed tip.**

Fruit: **Small, shiny, up to ¾ inch, oval-shaped, dark brown or black acorn**

Twigs:



Bark: **Ashy gray, mottled white, shallowly furrowed, rough and flaky.**

Pin Oak

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Represented

Not Represented

Distribution & Adaptability

Neighboring States **Illinois**

Distribution & Adaptability

Neighboring States

Distribution & Adaptability

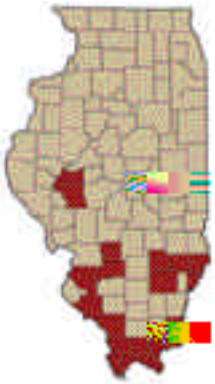
Neighboring States **Illinois**

Swamp Chestnut Oak

Distribution & Adaptability

Neighboring States

Illinois



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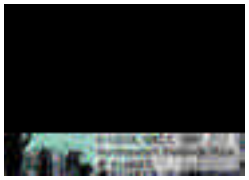
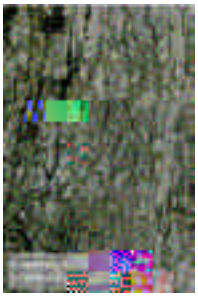
General Comments

Special Notes

Description:



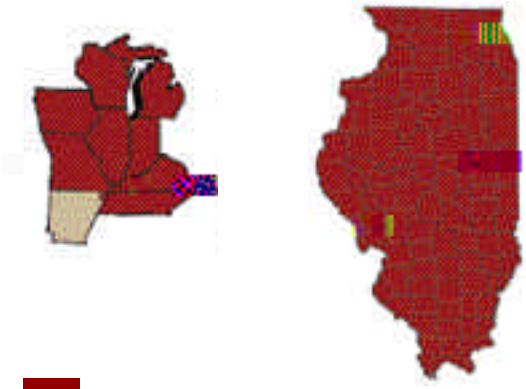


Bark:

Swamp White Oak

Distribution & Adaptability

Neighboring States **Illinois**



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Not Represented

General Comments

Special Notes

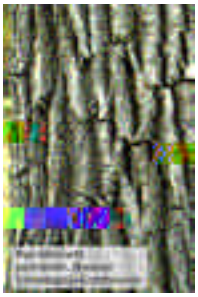
Description:

Fruit: **Appear singly or in pairs on stalks 1 inch or longer.**

Twigs:

Bark on twigs peels back in papery sheets.

Bark:



White Oak

Distribution & Adaptability

Description:

Neighboring States **Illinois**

Leaves:

Represented

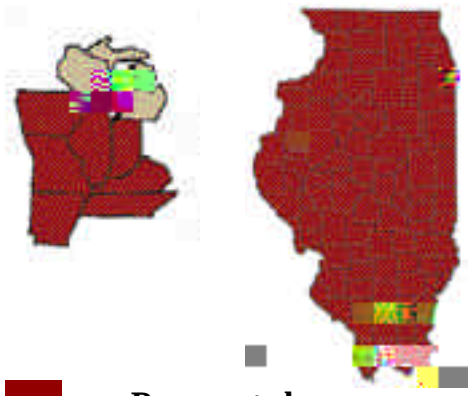
Not Represented

Distribution & Adaptability

Pecan

Distribution & Adaptability

Neighboring States **Illinois**



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General Comments

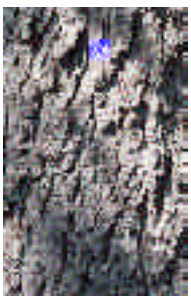
Special Notes

Description:

Leaves: **Alternate, compound with 9 to 19 spear shaped leaflets which curve to a long, pointed tip.**

Twigs:

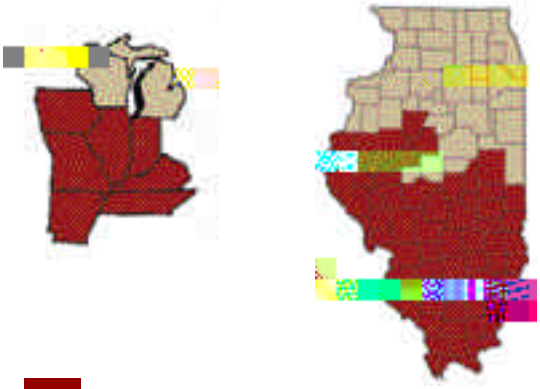
Buds have long points; up to ½ inch long with yellow glandular dots; lightly hairy.



Persimmon

Distribution & Adaptability

Neighboring States **Illinois**



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General Comments

Special Notes

Description:

Leaves: **Oval to elliptical with a pointed tip. Smooth edges.**

Dark green, smooth, shiny upper surface.

Fruit: **Fleshy, round berry. Up to 2 inches in diameter. Yellow-orange to orange as it ripens. Wrinked and sweet when fully ripe.**

Twigs:

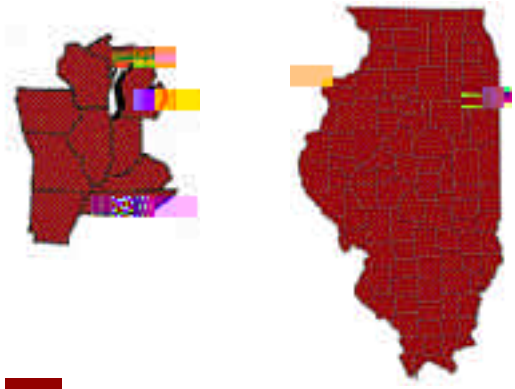
covered by two dark scales.

Bark: **Separates into thick, blocks at maturity. Resembles alligator skin.**

American Sycamore

Distribution & Adaptability

Neighboring States **Illinois**



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General Comments

Special Notes

Wear a dust mask when separating seeds.

Description:

Leaves: **with 3 to 5 shallow, coarsely toothed lobes.**

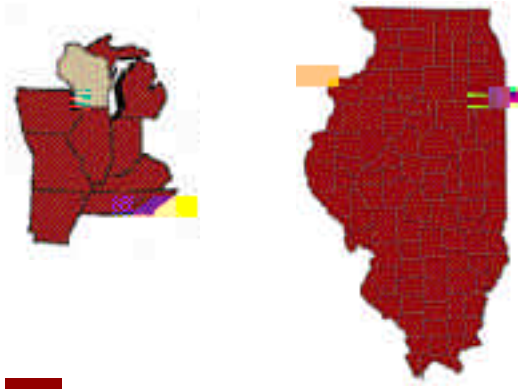
Fruit: **Round. Light brown. Approximately 1 inch in diameter. Long stalks. Many small seeds surrounded by hairs.**

Bark: **Later breaking away into thin, rounded, flat scales giving a brown and gray and white mottled appearance.**

Tuliptree

Distribution & Adaptability

Neighboring States **Illinois**



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General Comments

Special Notes

Description:

Leaves: **Large, with 4 wide lobes. Upper two lobes are broadly separated, giving the leaf a "saddle" shape.**

Fruit: **Seed cones. Approximately 2½ inches long. Overlapping seeds; winged and angled.**

Twigs: **Leaf scars nearly spherical. Flattened buds with 2 large scales; shaped like duckbills; up to 1 inch long.**

Bark:

Distribution & Adaptability

Neighboring States **Illinois**

Represented

Not Represented

Bark: