

**Plant Materials PreReleases/Releases
Field Planting Summaries by Species**

**Iowa Field Plantings
2005-2007**

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Iowa Field Plantings from 2005-2007
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**1) *Amorpha fruticosa*, Iowa Covey False Indigo Bush,
Selected Release**

False indigo bush is a native woody leguminous shrub maximum height of 18 feet. It is found in more open areas along lakes and streams, but can be planted in upland sites with different soil textures. Iowa Covey False Indigo bush is a selected release from collections from counties across the state.



Summary from Direct Seeding

The performance of this species by direct seeding from seed has proven this method is not a desirable application for establishment. The shading by weed species, especially broadleaf weeds, competes with the false indigo seedlings by stunting the seedlings with 36 inches of height and the stands are poor after three years. Seedling vigor is strong with light competition from weed species; however, in a field planting all competition cannot be controlled without detrimental effect on the false indigo bush seedling.

Summary for Bare Root Stock

The performance from bare root stock by direct planting has been the best method for establishment for the intended purposes. The bare root seedlings have excellent vigor in silt loam and in loam soils can obtain 60 inches of heights after two years. The bare root stock will compete with weeds for canopy closure for the purpose listed below.

Current Status Plants have been sold to a commercial grower for production.

The chart below lists all field plantings in Iowa for False Indigo bush in the past three years.
Amorpha fruticosa, False Indigo bush (Iowa, 9083249; Missouri, 9083248; Illinois, 9083250)

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-05-006	Clayton	1.2# PLS/.1 acre Mixture Species	SL	Wildlife planting	-	-	-	2005
					S	9	5 36"	2006
					M	8	5 38"	2007
IA-05-009	Scott	1.2# PLS/.1 acre Mixture Species	Silty Clay Loam	Covey HQ	L	9	5 2"	2005
					S	9	7 9"	2006
					M	0	0	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-05-011	Jefferson	1.2# PLS/ .1 acre Mixture Species	SL	Covey HQ	-	9	9 2''	2005
					-	0	0	2006
					-	0	0	2007
IA-06-003	Allamakee	60 plts Single species	SL	Stream bank Stabilization	M	1	3 24''	2006
					-	-	-	2007
IA-06-004	Webster	60 plts Single species	Silty Clay Loam	Streambank Stabilization	M	1	1 38''	2006
					L	5	1 48''	2007
IA-06-005	Boone	60 plts Single species	Loam	Covey HQ	L	1	1 27''	2006
					M	1	1 60''	2007
IA-06-006	Jefferson	60 plts Single species	Loam	Covey HQ	L	3	1 30''	2006
					-	-	-	2007
IA-06-007	Louisa	60 plts 5'x5' Single species	SL	Covey HQ	H	1	1 38''	2006
					-	1	1 -	2007
IA-06-007	Louisa	.62# PLS/ .5 acre 75'x30' Single species	SL	Covey HQ	H	5	5 12''	2006
					-	7	7 -	2007
IA-06-008	Louisa	60 plts 5'x5' Single species	SL	Covey HQ	S	5	7 15''	2006
					S	5	5 -	2007
IA-06-008	Louisa	.62# PLS/.5 acre Single species	SL	Covey HQ	L	9	5 1''	2006
					-	0	0 -	2007
IA-07-002	Osceola	5# PLS Mixture Species	Clay loam	FP	M	3	1 6''	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-07-003	Osceola	60 plts Single species	Clay loam	Covey HQ	-	7	5 -	2007
IA-07-004	Hardin	60 plts Single species	Lester loam	Covey HQ	L	1	5 24"	2007
IA-07-006	Fayette	60 plts Single species	SL	Covey HQ	L	1	3 39"	2007
IA-07-009	Washington	60plts Single species	SL	Covey HQ	M	1	1 33"	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

2) *Andropogon gerardii*, Refuge Big Bluestem, Selected Release

Refuge Big Bluestem initial release is based on the selection of short stature, less than 48", and its ability to withstand resistance to lodging throughout the winter. The three collections that make up the Refuge release were in the original assembly of 370 big bluestems; these three collection sources were Northern Arkansas.



Summary of plantings

Several field planting locations were completed on various soil textures to test stand emergence and seedling vigor of Refuge Big Bluestem in comparison to 'Rountree' Big Bluestem. In all the field plantings Rountree out performed Refuge in seedling vigor and density of stand after the second growing season.

Current Status- The Elsberry PMC will reselect for seedling vigor to improve performance. Field plantings will discontinue until improvements can be made to seedling vigor for Refuge Big Bluestem.

The chart below lists field plantings in Missouri for Refuge Big Bluestem in the past three years.

***Andropogon gerardii*, Big bluestem, Refuge (9078832)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-06-009	Osceola	5# PLS/.5 acre Mixture Species	SL	Filterstrip	M	5	5 21"	2006
					-	9	9 40"	2007
IA-06-010	Poweshiek	6# PLS/.6 acre Mixture species	SL	Filterstrip	S	0	0	2006
					S	0	0	2007
IA-07-005	Plymouth	5# PLS .5 acre Mixture species	SL	Filtersrip	S	0	0	2007
IA-07-011	Webster	5# PLS/.5 acre Mixture species	Clay loam	Filterstrip	L	9	7 4"	2007
IA-07-016	Washington	5# PLS Mixture species	SL	Filterstrip	M	7	5 3"	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

3) *Corylus Americana*, Sun Harvest American Hazelnut, Selected Release

This selection of Sun Harvest is a composite release of the best nut production collections from the Missouri and Illinois sources.

Summary of bare root plantings

Initial field plantings have fair vigor and stand of Sun Harvest when protected from competition and predation, mainly by rabbits and deer.

The chart below lists field plantings in Iowa for Sun Harvest American Hazelnut in 2007.



Current Status- Additional field plantings are needed for growth and fruit potential in Iowa. Seed has been allocated to a woody grower for commercial production.

***Corylus americana*, Sun Harvest American Hazelnut (9083247)**

Planting #	County	Rate (PLS)	Soil Type	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-07-007	Allamakee	25 plts Single species	SL	Fruit production	L	7	5 10"	2007
IA-07-010	Washington	25 plts Single species	SL	Fruit production	-	9	9 12"	2007
IA-07-012	Webster	25 plts 8'x8' Single species	SL	Fruit Production	N	5	5 12"	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

4) *Desmodium canadense*, Alexander Showy Tick Trefoil, Selected Release

Alexander is a native warm season perennial legume which occurs in prairies, wet meadows and open tickets.

Alexander was selected from a multiple state collection.

This selection source is Alexander County in Southern Illinois.



Summary of plantings

Alexander showy tick trefoil has excellent seedling emergence and good seedling vigor in addition it can tolerate shading of other species when planted in a mixture for a wildlife food plot at 5#/acre seeding rate. Control of grass competition is important in the establishment year with a post grass herbicide application. This species can produce seed the first growing season if not suppressed by competition. This native legume can provide good quality food for quail and cover; however it is a “stick-tight” and the seed will attach if you walk through a patch.

The following chart lists field plantings in Iowa for Alexander Showy Tick Trefoil in the past three years.

Current Status-The showy tick trefoil can perform for wildlife food and cover, this species is under utilized. . A mixture of Bobwhite soybeans, milo and showy tick trefoil can provide a perennial food plot and cover especially beneficial for quail and other wildlife species. Alexander is not currently available in the commercial market; but seed has been sold to a grower. The species is available of an Iowa source from a commercial grower.

***Desmodium canadense*, Tick Trefoil, Alexander (9057110)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-05-006	Clayton	.2# PLS/.1 acre Mixture species	SL	Covey HQ	-	-	1 -	2005
					S	5	3 36"	2006
					M	1	1 54"	2007
IA-05-009	Scott	.2# PLS/.1 acre Mixture species	Silty Clay Loam	Covey HQ	L	9	5 5"	2005
					S	9	7 42"	2006
					M	3	3 42"	2007
IA-05-011	Jefferson	.2# PLS/.1 acre Mixture Species	SL	Covey HQ	L	5	1 4"	2005
					-	5	1 24"	2006
					-	0	0	2007
IA-07-002	Osceola	5# PLS/ 1 acre Mixture Species	Clay loam	Food Plot	L	3	1 6"	2007
IA-07-006	Fayette	5# PLS 1 acre Mixture species	SL	Food Plots	M	5	5 30"	2007
IA-07-010	Washington	5# PLS/ 1 acre Mixture species	SL	Food plot	M	3	1 6"	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

5) *Elymus virginicus*, Cuivre River Virginia Wildrye, Selected Release

Cuivre River is a Missouri source, a native cool season open bunch grass that was selected for good seedling vigor and high seed production. Cuivre River is a lowland type of wildrye that was collected in Lincoln County Missouri near the discharge of the Cuivre River into the Mississippi River.

Summary of the plantings

Field plantings have occurred on many practices in lowland wet areas to upland sites. The performance of



this selection of Virginia wildrye has been consistent on soil textures, on loams, silt loams and clays. Cuivre River has excellent shade tolerance and can competition with weed species, but performs best in open sunlight. Cuivre River can tolerate flooding overland flow and inundation during the growing season for two weeks.

The species is listed as a short lived perennial; however, Cuivre River has maintained in stands as a single species where there was no removal of vegetative materials. This native species can provide the quick cover the first growing season to be used as a companion species or a single species for filterstrips, buffers, wet areas, and wildlife plantings. However in concentrated flow areas such as waterways, this species will not provide adequate erosion control as a single species. The wildrye has performed well in mixtures as the companion species.

Cuivre River Virginia wildrye needs to be planted as a mixture in a grazing or haying practice. Cuivre River quality data at the end of April was 28% crude protein, ADF 26%, and NDF 47%. Cuivre River was clipped for a forage sample on June 1 with results of 12% crude protein, ADF 34%, and NDF 60%. Booting of the seed occurs at the end of May to the first week of June.

Current Status- Proven performance can be incorporated in many conservation practices and is available on the commercial market.

The chart below lists field plantings in Iowa for Cuivre River Virginia Wildrye in the past three years.

***Elymus virginicus*, Virginia wildrye, Cuivre River (9083169)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-05-008	Sioux	15# total/1.5 acre Mixture species	SiCL	Waterway	L	1	1 8"	2005
					-	1	1	2006
					N	1	3 6"	2007
IA-05-008	Sioux	15# total/1.5 acre Mixture species	SiCL	Waterway	L	5	5 6"	2005
					-	3	3	2006
					L	1	3 24"	2007
IA-06-009	Osceola	6# PLS/.5 acre Mixture Species	SL	Filterstrip	M	3	3 12"	2006
					N	1	1 36"	2007
IA-06-009	Osceola	6# PLS/.5 acre Mixture Species	SL	Filterstrip	L	1	1 27"	2006
					-	-	-	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-06-010	Poweshiek	7.2# PLS/.6 acre Mixture Species	SL	Filterstrip	S	3	3 9"	2006
					S	1	1 40"	2007
IA-06-010	Poweshiek	7.2# PLS/.6 acre Mixture Species	SL	Filterstrip	0	3	3 -	2006
					-	-	-	2007
IA-07-005	Plymouth	6# PLS .5 acre Mixture species	SL	Filterstrip	S	0	0	2007
IA-07-005	Plymouth	7.2# PLS .6 acre	SL	Filterstrip	S	0	0	2007
IA-07-011	Webster	6# PLS/ .5 acre Mixture Species	Clay loam	Filterstrip	L	5	5 6"	2007
IA-07-011	Webster	6# PLS/ .5 acre Mixture Species	Clay loam	Filterstrip	L	7	7 4"	2007
IA-07-016	Washington	6# PLS Mixture species	SL	Filterstrip	M	9	3 5"	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

6) *Panicum virgatum*, low growing switchgrass, Not a Release

This switchgrass was a selection from collections from Iowa, Illinois, and Missouri that have the characteristics of low growing stature of 3 ft in height of vegetative materials, 4 ft with the seed heads.

Summary of plantings

The low growing switchgrass was sent out in field plantings. Performance has been poor in seedling emergence and establishment, especially for its intended practice use of waterways. Performance has been better on



coarse texture, well drained soils. The seedling performance has been good on soil textures that are limited to sandy loam and silt loam soils that have adequate moisture and well drained soils especially in the Loess Hills of Western Iowa.. This type of performance limits the use, especially for waterways in our region that consist of heavy texture clay soils that can be poorly drained. Previous field plantings took three years to establish a solid stand on silt loam soils for filterstrips.

The PMC will need to improve seedling performance before this switchgrass can be released to the commercial market.

Current Status

Additional field plantings are on hold until performance can be improved.

The chart below lists field plantings in Iowa for the switchgrass in the past three years.

***Panicum virgatum*, low growing switchgrass, (9083172)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-05-008	Sioux	11# PLS/1.5 Acre Mixture species	SiCL Loam	Waterway	L	1	1 7"	2005
					N	1	1 24"	2006
					N	1	1 24"	2007
IA-05-010	Hamilton	7.7# PLS/ 1.1 acre	Sil Cl Loam	Waterway	-	0	0	2005
					-	9	9	2006
					L	7	7 30"	2007
IA-07-005	Plymouth	6# PLS .5 acre Mixture species	SL	Filterstrip	S	0	0	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

7) *Prunus americana*, Midwest Premium American Plum, Selected Release

American Plum is a native small tree reaching a maximum height of 20 feet. Midwest Premium is a selected release of composite sources from Illinois, Missouri, and Eastern South Dakota. This selection was based on consistent fruit production.



Summary for bare root plantings

The survival rate from bare root seedlings for field plantings in Illinois was 100%, 70% in Missouri, and 66% in Iowa from 2001-2003. Overall there was good to excellent survival of the bare root seedlings with the majority of the field plantings receiving minimal maintenance with moderate weed and grass competition. The average vigor for the field plantings were rated fair/good. Growth rates were slowed by competition. In field plantings where the canopy was open to sunlight, there was no shading, and competition of weeds were controlled, it was documented that flowering and fruit development occurred within the third year after planted. Deer and rabbit pressure did affect the vigor and survival of some of the plantings.

Summary of direct seeding

Direct seeding field plantings are being conducted with positive results when the seed is seeded in early fall (September) for a warm stratification before the cold winter months. The seed sown in the fall will germinate the next spring. Several rates of seeding were tried for establishing Quail Covey Head Quarters (HQ) to obtain enough stems during the initial establishment year.

A rate of 1# bulk seed/1500 square feet (50ft. x 30ft.) of seeding area is resulting in 1 plant/10 square feet for the 3 replications in the first growing season for the Direct Seeding Replications Study at Elsberry PMC. A one time post application grass herbicide is required to control the competition in the establishment year.

Current Status

Additional field plantings are needed in Iowa for testing the fall planted direct seeding of American plum for wildlife habitat, especially for quail and pheasant cover. Seed has been allocated to a woody grower for commercial production.

The chart below lists field plantings in Iowa for Midwest Premium American Plum in the past three years.

Prunus americana, Midwest Premium American Plum (9083241)

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
IA-06-001	Des Moines	1.6# bulk	SL	Covey HQ	S	0	0	2006
					-	0	0	2007
IA-07-010	Washington	1# bulk Single species	SL	Covey HQ	-	2007 fall seeded	0	2007
IA-07-010	Washington	60 plts Single species	SL	Covey HQ	S	0	0	2007

Weeds=None, Light, Moderate, Severe

Rating for Stand and Vigor=1 Excellent, 3-Good, 5-Fair, 7-Poor, 9-Very Poor, 0-None

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