

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

**Missouri Field Plantings  
2005-2007**

**Jerry Kaiser, Plant Materials Specialist  
Elsberry Plant Materials Center**

**January 2008**

## Table of Contents

1)	Missouri Covey False Indigo Bush ( <i>Amorpha fruticosa</i> )	
	Summary	3
	Field Plantings List and Status	3-5
2)	OZ-70 Big Bluestem ( <i>Andropogon gerardii</i> )	
	Summary	5-6
	Field Plantings List and Status	6
3)	Refuge Big Bluestem ( <i>Andropogon gerardii</i> )	
	Summary	6-7
	Field Plantings List and Status	7-8
4)	Sun Harvest American Hazelnut ( <i>Corylus americana</i> )	
	Summary	8
	Field Plantings List and Status	8-9
5)	Alexander Showy Tick Trefoil ( <i>Desmodium canadense</i> )	
	Summary	9
	Field Plantings List and Status	10
6)	Cuivre River Virginia Wildrye ( <i>Elymus virginicus</i> )	
	Summary	11
	Field Plantings List and Status	11-14
7)	Switchgrass ( <i>Panicum virgatum</i> ) low growing (Not Released)	
	Summary	14
	Field Plantings List and Status	15
8)	Midwest Premium American Plum ( <i>Prunus americana</i> )	
	Summary	15
	Field Plantings List and Status	16-19

**Field Planting Summaries by Species**  
**Missouri Field Plantings from 2005-2007**  
**Jerry Kaiser, Plant Materials Specialist**  
**January 2008**

**1) *Amorpha fruticosa*, Missouri 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. Missouri 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 less than 30 inches of height 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 70 inches of heights after three 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 Missouri for False Indigo bush in the past three years.

***Amorpha fruticosa*, Missouri Covey False Indigo Bush (Iowa, 9083249; Missouri, 9083248; Illinois, 9083250)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
MO-05-003 Iowa	Boone	.4#/1500 sq ft. Mixture species	SL	Wildlife Covey HQ	S	0	0	2005
					-S	0	0	2006
					-S	-	-	2007
MO-05-004 Iowa	Osage	.4#/1500 sq ft. Single species	SL	Wildlife. Covey HQ	M	5	1 24"	2005
					N	1	5 17"	2006
					-	3	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

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
MO-05-010 Iowa	Nodaway	6 plants Mixture species.	SL	Wildlife Covey HQ	M	1	3 5"	2005
					-	3	7 6"	2006
					L	3	3 29"	2007
MO-05-010 Missouri	Nodaway	.4#/1500 sq ft. Mixed species	SL	Wildlife Covey	L	1	1 30"	2005
					-	3	1 43"	2006
					L	1	1 57"	2007
MO-05-010 Illinois	Nodaway	7 plants Mixture species	SL	Wildlife Covey HQ	L	1	1 61"	2005
					-	1	5 57"	2006
					L	1	1 70"	2007
MO-05-021 Iowa	Pike	.4#1500 sq ft. Mixture. Species		Wildlife Covey HQ	S	5	1 8"	2005
					M	9	7 4"	2006
					-	3	5 24"	2007
MO-06-020 Missouri	Macon	60 plants/1500 sq. ft. Single species	SL	Wildlife Covey HQ	M	1	3 25"	2006
					M	1	1 45"	2007
MO-06-021 Missouri	Platte	60 plants/1500 sq. ft. Single species	SL	Wildlife Covey HQ	M	1	3 21"	2006
					-	-	-	2007
MO-06-026 Missouri	Osage	60 plants/1500 sq. ft Single species	SL	Wildlife Covey HQ	-	1	5 -	2006
MO-06-031 Missouri	Marion	60 plants/1500 sq. ft. Single species	Lindley loam	Wildlife Covey HQ	M	2	2 21"	2006
					L	2	1 24"	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
MO-06-032 Missouri	Monroe	60 plants/1500 sq. ft. Single Species	Leonard SL	Wildlife covey HQ	L	3	3 36"	2006
					-	-	-	2007
MO-06-036	Clark	50 plts	Loamy sand	Critical area sand	-	0	0	2006
					-	0	0	2007
MO-06-039 Missouri	New Madrid	120 plants/2 (1500 sq. ft each) Single species	Sandy loam	Covey HQ	-	0	0	2006
MO-07-012 Missouri	Mercer	60 plants/1500 sq ft/ Single species	Gara loam	Covey HQ	-	3	3 20"	2007
MO-07-015 Missouri	Stone	60 plants/1500 sq ft/ Single species	Noak Clarksville Complex Gravelly SL	Covey HQ	L	5	3 18"	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*, OZ-70 Big Bluestem, Selected Release

OZ-70 is a composite release of 70 collections of Big Bluestem from native prairie remnants from Southern Missouri, Northern Arkansas, Eastern Oklahoma, and Southern Illinois. These 70 were selected from the initial assembly of 370 collections, because of their forage production, later maturity, and disease resistant for this Southern region of the service area compared to 'Rountree' Big Bluestem who's origin is central Iowa.



**Summary of plantings**

This big bluestem has excellent vigor and stand performance in silt loam soils that receives management to insure stand establishment. The second year will provide a forage crop for grazing or haying; with 5.5 tons/acre total yields from two cuttings during the growing season. Previous field plantings provided quality data using fecal sampling. Projected animal performance was calculated using Nutbal program. The data resulted with an average crude protein of 14.66 and average Digestible Organic Matter (DOM) of 69.70 July through August. The projected animal performance was 2.77 lbs/day. Note: To convert (DOM) to Total Digestible Nutrients, multiply by 1.05.

**Current Status**-Additional field plantings are needed, especially on heavier texture soils for performance. Seed has been sold to commercial growers and is available in the market.

The chart below lists field plantings in Missouri for OZ-70 Big Bluestem in the past three years.

***Andropogon gerardii*, OZ-70 Big Bluestem (9078831)**

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
MO-06-024	Miller	25# PLS/2.5 acres Single species	SL	Grazing/Hay	N	1	1 -	2006
					L	1	1 25"	2007
MO-07-026	Lincoln	25.88# PLS/2 Mixture Species	SL	Pasture interseeding	-	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

**3) *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 370 assembly of 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*, Refuge Big bluestem (9078832)

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht.	Year
MO-06-023	Platte	2.5# PLS/.25 acre Single species.	Ladoga SL	Wildlife Planting	S	9	7 5"	2006
					M	9	5 8"	2007
MO-06-027	Osage	5# PLS/.5 acre Single species	SL	Buffer	-	0	0	2006
					-	0	0	2007
MO-06-033	Boone	.4 PLS/.0688 acres Single mixture	Clay	Filterstrip	-	0	0	2006
					L	7	7 8"	2007
MO-06-033	Boone	.4 PLS/.0688 acre Mixture Species	Clay	Filterstrip	-	0	0	2006
					-	9	7 6"	2007
MO-06-036	Clark	6# PLS/1 acre	Loamy sand	Filterstrip	-	0	0	2006
					-	9	9 8"	2007
MO-07-017	Osage	5# PLS/.5 acre	Jamesfin SL	Filterstrip	M	7	1 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

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht.	Year
MO-07-022	Putnam	5# PLS/.5 acre	Silt clay loam	Buffer strip	M	5	3 6"	2007
MO-07-025	New Madrid	5# PLS/.5 acre Mixture Species		Filterstrip	-	-	-	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) *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/good vigor and good stand of Sun Harvest when protected from competition and predation, mainly by rabbits and deer.

The chart below lists field plantings in Missouri for Sun Harvest American Hazelnut in the past three years.

**Current Status-** Additional field plantings are needed for growth and fruit potential in Missouri. 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
MO-05-010	Nodaway	6 plants 36". Mixture Species	Silt loam	Wildlife	-	1	1 25"	2005
					-	1	5 31"	2006
					L	1	5 32"	2007
MO-05-010	Nodaway	6 plants FKN. Mixture species.	Silt loam	Wildlife	L	1	1 31"	2005
					-	1	1 43"	2006
					L	1	5 33"	2007
MO-06-011	Grundy	10 plts bareroot		Demon- stration.	-	3	1 13"	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 Type	Purpose	Weeds	Stand	Vigor/Ht.	Year
MO-06-001	Grundy	5 plts RPM Single species		Demon- stration	-	3	1 13"	2006
					-	-	-	2007
MO-07-019	New Madrid	25 plts Single species	Loam	Nut production	-	-	-	2007
O-07-021	Pike	25 plts Single species	SL	Nut production/ Covey HQ	-	-	-	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) *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.



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

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

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
MO-05-003	Boone	.07#/1500 sq ft. Mixture species.	SL	Wildlife Food and cover	-S	0	0	2005
					-S	9	0	2006
					-	-	-	2007
MO-05-004	Osage	.07#/1500 sq ft. Mixture species.	SL	Wildlife Food and cover	M	9	5 20"	2005
					M	1	3 32"	2006
					N	1	1 36"	2007
MO-05-010	Nodaway	.07#/1500 sq ft. Mixture Species.	SL	Wildlife Food and cover	M	1	1 25"	2005
					-	1	1 48"	2006
					L	1	1 36"	2007
MO-05-021	Pike	.07#1500 sq ft. Mixture species.	SL	Wildlife Food and cover	S	7	1 8"	2005
					M	9	7 8"	2006
					-	1	5 12"	2007
MO-06-042	Howard	.1 # PLS/1500 sq. ft Single species	SL	Direct Seeding	S	7	7 18"	2007
MO-06-043	Randolph	.1# PLS/1500 sq. ft. Single species.	SL	Direct seeding	L	9	3 18"	2007
MO-06-045	Nodaway	.1# PLS/1500 sq. ft. Single species	CL	Direct seeding	M	1	3 15"	2007
MO-07-011	Mercer	5 # PLS/acre Mixture species	SL	Food Plot	L	3	5 3"	2007
MO-07-014	Stone	5# PLS Mixture species	SL	Food plot	S	0	0	2007
MO-07-016	Osage	5 # PLS/acre Mixture species	SL	Food Plot	N	5	5 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

**6) *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 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 Missouri for Cuivre River Virginia wildrye in the past three years.

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

Planting #	County	Rate (PLS)	Soil Texture	Purpose	Weeds	Stand	Vigor/Ht	Year
MO-05-001	Lincoln	24#PLS/acre. Single species	SL	Grazing	M	5	3 6"	2005
					M	3	1 19"	2006
					M	3	3 15"	2007
MO-05-018	Pettis	12#/ 1 acre Mixture species.		Waterway	L	9	7 3"	2005
					L	5	5 30"	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
MO-06-001	Newton	9# PLS/.75 acre Single species	SiCL	Buffer	-	-	-	2006
					M	5	3 16"	2007
MO-06-010	Pettis	8# PLS/.5 acre Single species	Clay	Waterway	L	5	5 30"	2006
						-	-	2007
MO-06-025	Cole	4# PLS/.25 acre Single species	SL	Critical Area	S	3	1 6"	2006
					-	-	-	2007
MO-06-030	Ralls	3.6# PLS/.3 acre Mixture Species	SL	Waterway	-M	0	0	2007
MO-06-030	Ralls	8.4# PLS/.7 acre Mixture species	SL	Waterway	-M	0	0	2007
MO-06-033	Boone	.8# PLS (.0688acre) Mixture species	Clay	Filterstrip #2	L	3	1 4"	2006
					-	5	3 -30"	2007
MO-06-033	Boone	.8# PLS (.0688acre) Mixture species	Clay	Filterstrip #3	L	3	1 4"	2006
					-	3	3 36"	2007
MO-06-033	Boone	8# PLS (.0688acre) Mixture species	Clay	Filterstrip #4	-	3	1 4"	2006
					N	5	3 -36"	2007
MO-06-033	Boone	8# PLS (.0688acre) Mixture species	Clay	Filterstrip #7	-	3	1 4"	2006
					N	5	3 36"-	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
MO-06-033	Boone	8# PLS (.0688acre) Mixture species	Clay	Filterstrip #8	-	1	1 4"	2006
					L	3	1 36"	2007
MO-06-037	Greene	3.8# PLS/.8 acre Mixture Species	SL	Critical area	-	-	-	2006
					L	0	0	2007
MO-06-038	Benton	172.8# PLS/7.2 acres Mixture Species	SL	Hayland which flooded in 2007 for 3 weeks	S	9	9 3"	2007
MO-07-010	Christian	80# PLS/4 acres Single species	SL	Ungrazed; flooded sinkholes	M	9	5 4"	2007
MO-07-010	Christian	80# PLS/4 acres Single species	SL	Grazed; flooded sinkholes	H	9	7 3"	2007
MO-07-017	Osage	6# PLS/.5 acre Mixture Species	SL	Filterstrip	M	9	5 -	2007
MO-07-017	Osage	6# PLS/.5 acre Mixture Species	SL	Filterstrip	M	9	5 -	2007
MO-07-018	Ray	85# PLS/ 3.7 acres Single species	SiCL	Pasture grazing; fall 2007 planted	-	-	-	2007
MO-07-022	Putnam	4# PLS/.5 acre Mixture species	SiCL	Buffer strip	M	3	3 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
MO-07-022	Putnam	4# PLS/.5 acre Mixture species	SiCL	Buffer strip	M	3	3 6"	2007
MO-07-025	New Madrid	6# PLS/.5 acre Mixture Species		Filterstrip	-	-	-	2007
MO-07-025	New Madrid	6# PLS/.5 acre Mixture species		Filterstrip	-	-	-	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) *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 best on soil textures that are limited to sandy loam soils that have adequate moisture and well drained loess. 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.



#### Current Status

Additional field plantings are on hold until performance can be improved. The PMC will need to improve seedling performance before this switchgrass can be released to the commercial market.

The following chart lists field plantings in Missouri 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
MO-05-018	Pettis	9.4# PLS/1.0 acre Mixture species		Waterway	L	9	9 6"	2005
					L	9	8 12"	2006
					-	-	-	2007
MO-06-010	Pettis	7# PLS/.5 acre Mixture species	Clay	Waterway	L	9	9 12"	2006
MO-06-030	Ralls	9.8# PLS/.7 acre Mixture Species	SL	Waterway	M	7	7 4"	2007
MO-06-033	Boone	.7 # PLS/.068 acre Mixture Species	Clay	Filterstrip	-	0	0	2006
					-	7	1 12"	2007
MO-06-036	Clark	3.5# PLS/25% Mixture Species	Loamy sand	Filterstrip	-	0	0	2006
					-	9	9 26"	207

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

**8) *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 cover. Seed has been allocated to a woody grower for commercial production.

The chart below lists field plantings in Missouri 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
MO-05-010	Nodaway	6 plant Mixture Species	SL	Wildlife Covey HQ	L	1	1 19"	2005
					-	3	3 28"	2006
					L	1	3 23"	2007
MO-05-010	Nodaway	6 plants FKN Mixture Species	SL	Wildlife Covey HQ	L	1	1 55"	2005
					-	1	3 66"	2006
					L	1	1 74"	2007
MO-06-002	Osage	.25 # bulk Single species	Gravelly SL	Covey HQ	M	5	1 10"	2006
					S	9	7 9"	2007
MO-06-003	Benton	.25# bulk Single species	SL	Wildlife	-	0	0	2006
					-	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
MO-06-004	Carroll	.5# bulk Single species	Silt Clay Loam	Covey HQ; seeded fall	M	0	0	2006
					M;Drought	0	0	2007
MO-06-005	Buchanan	.25 # bulk Single species	Si Clay Loam	Covey HQ; fall Seeded.	M	0	0	2006
					M	0	0	2007
MO-06-005	Buchanan	.50# Bulk Single species	Si Clay Loam	Covey HQ; fall seeded	N	0	0	2006
					L	9	5 4"	2007
MO-06-005	Buchanan	.75# bulk Single species	Si Clay Loam	Covey HQ; Fall seeded	N	9	9 8"	2006
					L	5	5 4"	2007
MO-06-018	Gentry	.25# bulk/1500 sq. ft. Single species	Clay Loam	Covey HQ; seeded early spring	-	-	-	2006
					L Drought	0	0	2007
MO-06-019	Macon	.25# bulk/ 1500 sq. ft. Single species	SL	Covey HQ; spring seeded	M	0	0	2006
					M	0	0	2007
MO-06-021	Platte	.25# bulk/ 1500 sq. ft. Single species	SL	Covey HQ; spring seeded	-	0	0	2006
					-	0	0	2007
MO-06-034	Johnson	.25# bulk/ 1500 sq. ft. Single species	SL	Covey HQ; spring seeded	-	0	0	2006
					-	0	0	2007
MO-06-042	Randolph	1# bulk/1500 sq. ft. Single mixture	SL	Direct seeding; fall seeded	S	7	7 18"	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
MO-06-043		1# bulk/1500 sq. ft. Single mixture	SL	Direct seeding; fall seeded	L	3	3 6"	2007
MO-06-044	Vernon	1# bulk/1500 sq ft. Single mixture	SL	Fall direct seeded	M	9	3 15"	2007
MO-06-045	Nodaway	1# bulk/1500 sq ft Mixture species	CL	Direct seeding; fall seeded	M	1	3 18"	2007
MO-06-046	Boone	1# bulk/1500 sq. ft. Mixture seeding	SL	Direct seeding; fall seeded	M	9	7 15"	2007
MO-07-009	Sullivan	1# bulk/1500 sq ft Single species	Clay Loam	Fall seeded 2007	-	-	-	2007
MO-07-012	Mercer	60 plts/1500 sq ft. Single species	Loam	Covey HQ; spring planted	S Drought	9	7 18"	2007
MO-07-012	Mercer	1# bulk Single species	Loam	Covey HQ; fall planted	-	-	-	2007
MO-07-015	Stone	60 Plants/1500 sq ft Single species	Nourk/Clarks ville Complex SL	Covey HQ; spring planted	L	3	3 26"	2007

Weeds=None, Light, Moderate, Severe

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

<b>Planting #</b>	<b>County</b>	<b>Rate (PLS)</b>	<b>Soil Texture</b>	<b>Purpose</b>	<b>Weeds</b>	<b>Stand</b>	<b>Vigor/Ht</b>	<b>Year</b>
MO-07-020	New Madrid	60 plts Single species	SL	Covey HQ	-	-	-	2007
MO-07-020	New Madrid	1# bulk 1500 sq ft Single species	SL	Covey HQ	-	-	-	2007
MO-07-028	Gentry	1# bulk 1500 sq ft Single species	Silty Clay	Covey HQ; fall 2007 seeded	-	-	-	2007
MO-07-029	Ralls	1# bulk 1500 sq ft Single species	SL	Covey HQ; fall 2007 seeded	-	-	-	2007

Weeds=None, Light, Moderate, Severe

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

\*\*\*\*\*

"The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer."