

Results of Planting Check on the Cusino State Game Area  
June, 1946

The wildlife food and cover planting program on the Cusino State Game Area was initiated in the fall of 1939 and continued to and including the spring planting season of 1942 when it was interrupted due to the exigencies of the war. During that time a total of 598,609 trees and shrubs and 9,100 acorns were planted. Plantings were made on more than two thousand acres, however, this figure is not comparable to the acreages given for other project areas. A large percentage of the Cusino plantings were strip and patch plantings designed to produce food for sharptailed grouse and prairie chickens without closing in the planted areas to the extent the birds would not use them. Accordingly the patches or individual plants were widely spaced. In some plantings rows were as much as forty feet apart and plants ten feet apart in the rows. Consequently the area covered was large in comparison to the number of trees and shrubs planted and the labor expended.

The total cost of wildlife food and cover plantings made on the Cusino Area was \$5,469.30 or approximately \$2.42 for each acre improved. This low cost per acre is due to the wide spacing and small number of trees and shrubs planted per acre. The cost per thousand plants was approximately \$9.00 which is comparable to the cost of plantings on other game areas.

Since making a detailed check of plantings is one of the projects on the Cusino Experiment Station program no attempt was made to cover them in detail during this check. Results reported here are based on observation of the plantings and notes from the Cusino Experiment Station files.

The Cusino food and cover plantings are of two general types. First, those made in the vicinity of deeryards for deer browse and, second, those made on the plains areas for prairie chicken and sharptailed grouse food. The deer browse plantings have failed almost completely. In most areas mortality of the plantings has been excessive, and those plants still alive have made poor growth. Reasons for the heavy mortality appear to be competition from native plants, especially sod, stock not adapted to site or locality, browsing and poor planting. Of these mortality factors the first two seem to be most important. Some deer browse plantings were made in the swamps or along the swamp borders without soil preparation making it impossible to accurately check them but, at best, they are ineffective.

Practically all of the food plantings for upland game birds were made on open plains areas supporting very poor sod. The mortality of these plantings has been very high but a few species have demonstrated their ability to survive in fair numbers and they have made some growth. These species may establish themselves and eventually serve the purpose for which they were planted. The most important of these species are red oak, black cherry, hawthorne and wild plum. All other species planted on the plains areas have been unsuccessful, but sumac and mountain ash have been moderately successful when planted on heavier soils.

One small white spruce planting made to establish a living snow fence along the county road between Melstrand and Van Meer has been successful in establishing itself but is still too small to serve the purpose for which it was planted.

Table I gives a summary of all plantings made on the Cusino Area. Included in this table is the planting number, descriptions planted, season planted, acreage planted, species and number of each planted and brief notes on the success of each planting. A study of the table shows that most of the plantings have been unsuccessful and do not justify the planting costs. Therefore, it is recommended that the wildlife food and cover planting program be discontinued on the Cusino area except as experiment station projects. Such projects probably should be encouraged in an attempt to determine the feasibility of planting for various wildlife species and, if feasible, to determine the most satisfactory species of plants to use and the best planting techniques.

LAD:cb  
8/26/46

*L. A. Davenport*  
L. A. Davenport

Table I

Cusino State Game Area  
Results of Planting Check, June, 1946

Planting Number	Description	Season Planted	Acreage Planted	Species	Number Planted	Success
1	Sec. 30 T 46N R 16W Sec. 7 T 47N R 16W	S - 1939	37	Moose Maple Red-berried Elderberry Mt. Ash Red Maple	10,000 10,000 70,000 10,000	Practically all of this planting has died out. That planted in Sec. 7 could not compete with native hardwood growth and that in section 30 appeared could not withstand browsing and heavy sod competition
2	Sec. 16 & 20 T 48N R 15W	F-1939	480 approx.	Mt. Ash Black Cherry Choke Cherry Red-berried Elderberry Hawthorne Box Elder Wild Plum Wild Raisin Sumac Winterberry	25,000 10,000 10,000 10,000 1,000 25,000 6,400 10,000 4,075 10,000	Black cherry, Hawthorne and Wild Plum appear to be the only species used that could withstand the poor site conditions at this planting area. Specimens of these species that were observed had made very poor growth and the plants did not appear thrifty. The percentage of living plants is not high and it seems doubtful whether they can establish themselves and become effective wildlife food plants
3	Sec. 9 & 10 T 48N R 15W	F - 1940	349.9	Box Elder Black Cherry Juneberry Mt. Ash Nannyberry Red Oak Over-run on Order	40,000 51,755 5,000 10,000 40,000 5,000 445	Black Cherry and Red Oak were the only species that had survived in any numbers. Estimated survival rate of these two species was about 40%. The growth rate of all surviving plants was very slow. Late spring frosts had killed most of the leaves but they were leafing out again.
4	Sec. 9 & 16 T 48N R 15W	S- 1940	155.3	Wild Crab Apple Mt. Ash Box Elder Black Cherry Choke Cherry Hickory	78 15,000 10,000 25,000 25,000 100	Of the species used for this planting only Black Cherry, Red Oak and Wild Plum have survived in any numbers, but even for these species the growth rates have been very slow and the plants do not appear thrifty. Probably most of these surviving at

Planting Number	Description	Season Planted	Acreage Planted	Species	Number Planted	Success
4 continued				Red Oak	10,308	this time will be unable to establish themselves in sufficient numbers to be important as wildlife food producers. All oak found were red oak, however, the number of white oak planted was too small to be significant.
				White Oak	25	
				Wild Plum	2,500	
				Sumac	1,000	
				Black Walnut	100	
				Winterberry	2,000	
				Moose Maple	460	
5	Sec. 21 T 47 N R 17W Sec. 27 T 46N R 14W	S - 1941	69.1	White Spruce	10,000	The white spruce planted as a living snow fence are doing well. Approximately 65% have survived and after a few more years growth they should make an effective snow fence. Sumac and Mt. Ash have also survived in fair numbers in this area. Sumac is now about 3 ft. high and is producing seed. Other species used in this planting have practically all died out.
				Sumac	6,676	
				Box Elder	1,000	
				Common Elder- berry	4,212	
				Red-berried Eld- er berry	3,000	
				Hawthorne	292	
				Black Cherry	2,000	
				Mt. Ash	3,000	
6	Sec. 8, 18 & 19 T 47N R 16W. Sec. 17, 20 & 29 T 48N R 15W Sec. 31 T 49N R 15W	F - 1941	480	White Cedar	40,000	White cedar and Black spruce was planted along north side of Cusino Swamp. Natural reproduction made the plantings ineffective even if they survived. They were planted without soil preparation making it impossible to make accurate survival counts. Highbush Cranberry used for landscaping around Experiment Station Headquarters - they did well. Acorn plantings failed completely. Elderberry and black cherry plantings north of Kingston Lake unsuccessful.
				Highbush Cran- berry	123	
				Black Spruce	3,000	
				Black Cherry	2,000	
				Common Elder-- berry	2,000	
				Red Oak(Acorns)	4,500	
				White Oak(Acorns)	4,600	

Planting Number	Description	Season Planted	Acreage Planted	Species	Number Planted	Success
7	Sec. 16 & 17 T 47N R16W	S - 1942	692	White Cedar	23,000	White Cedar planting is at best ineffective. It was planted without soil preparation and could not be accurately checked. Ground Juniper used for landscaping around headquarters. Hawthorne planted around pot holes in White Rat Plains has high rate of survival, but growth rate is slow. Most of plantings north of Kingston Lake have died out. Sumac appeared to start well but is all dead now.
	Sec. 21 T 47N R 17W			Black Cherry	10,000	
	Sec. 6 & 17 T 48N R 15W			Common Elderberry	9,850	
	Sec. 1 T 48N R 16W			Nannyberry	8,300	
	Sec. 31 T 49N R 15W			Hawthorne	1,060	
	Sec. 36 T 49N R 16W			Ground Juniper	125	
				Ninebark	6,300	
				Sumac	7,425	
Total			2267		598,609 9,100	Trees and Shrubs Acorns