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A 1960 Survey... Grasses and Legumes in Nebraska

by J. C. Swinbank and Larry E. Wulf 1/

ACKNOWLEDGMENTS

Processing of the Nebraska Grass and Legume Variety Survey was started under the direction of Howard G. Frey, Agricultural Statistician, State-Federal Division of Agricultural Statistics. Upon the death of Mr. Frey, Larry E. Wulf, Student Trainee in Agricultural Statistics was given major responsibility in the processing and analytical work of the survey. James D. Greer, Student Trainee, assisted in the editing and tabulation of questionnaires. Jack L. Aschwege, Agricultural Statistician, formerly with the Nebraska office, assisted in the development and design of the sample and questionnaire and in the initial planning work. The analytical and statistical work was supervised by K.E. Logan, Agricultural Statistician, and Thelma M. Mahr, Statistical Assistant, State-Federal Division of Agricultural Statistics.

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INTRODUCTION

This report presents statistics on kinds and varieties of grasses and legumes grown in Nebraska. About 29 million acres, or more than half the farm and ranch land of the state, are devoted to grasses and legumes. These crops represent one of the most important resources of the state.

Questionnaires were mailed to a random list of farmers and ranchers throughout the state. Individual questions related to the acreage of grass and legumes on the place, seedings in native grassland, new seedings of grass and legumes and the varieties and kinds of introduced and native grasses seeded in present stands.

The survey and this report is a cooperative undertaking of the Agricultural Extension Service, College of Agriculture, University of Nebraska, and the State-Federal Division of Agricultural Statistics. Other agencies such as the Soil Conservation Service, Agricultural Economics, and the Agricultural Research Service of the U.S. Department of Agriculture contributed to the project through consultation and review of the questionnaire, design of the sample, and examination of results.

This survey is the first of its kind ever made in Nebraska. Hence, the information will provide a basing point, or bench mark, for future comparisons. At the same time, the results provide information on a subject for which little or no statistics were previously available. They give those interested in Nebraska's grass and legume crops from the standpoint of feed

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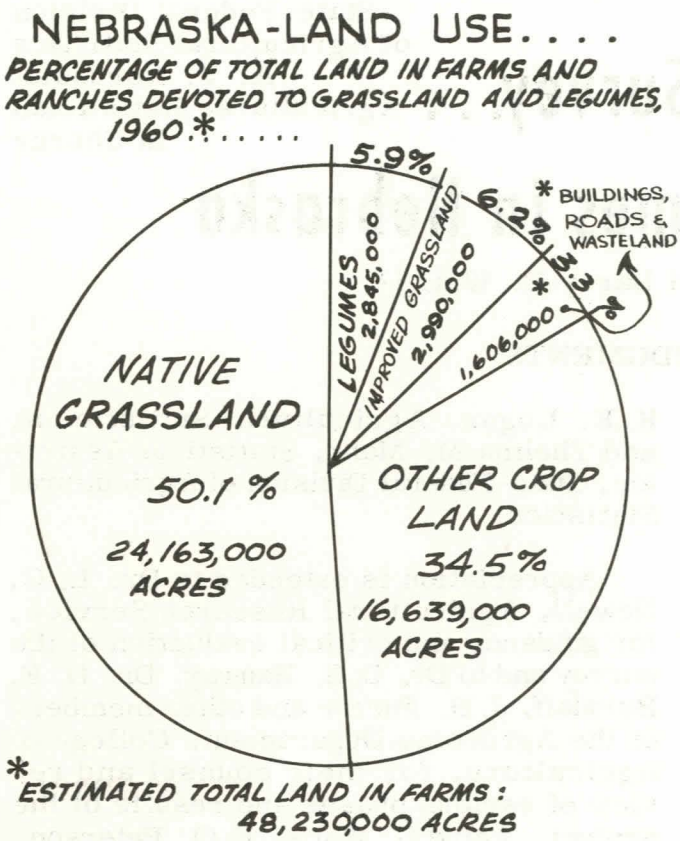


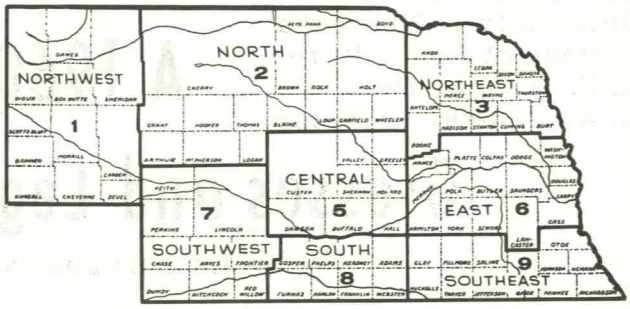
production, conservation, fertility of the soil or other phases of interest a better picture of the kinds, varieties and mixtures of grasses and legumes in the state.

Native Grassland Important In All Districts

The survey showed about 50 percent of the total farm and ranch land was devoted to native grasses. A little over 6 percent was in improved grasslands and a little less than 6 percent was in legumes. Table 1 shows by crop reporting districts the total land classified as (1) native grassland, (2) improved grassland (any acreage which has an adapted grass planted alone or in any mixtures including legumes), (3) legume crops such as alfalfa, clover, and other legumes, excluding soybeans and vetch. Other statistical comparisons of interest relating to new seedings are also shown.

The percentage of farm and ranch area devoted to native grasslands shows a wide range among crop reporting districts. District 2 (Sandhills) reported nearly 83 percent in native grassland. District 1 was 60 percent and District 7 about 59 percent. The lowest percentage was for District 6 (east central).

NEBRASKA CROP REPORTING DISTRICTS



For the state, about 2.7 percent of the native grasslands have had grasses and legumes seeded into established stands. The range was from 1.2 percent in District 2 (Sandhills) to 12 percent in District 6. Improved grasslands on farms and ranches ran from a low of 2.8 percent of the farm land in District 8 (south central) to a high of 13.6 percent in District 3 (northeast). The eastern districts all were higher than the central and western districts. New seedings during the period August 1959-July 1960 of grasses, or grass and legume mixtures, constituted 14 percent of the total stand of improved grasslands. Percentagewise by districts, the new seedings ranged from 11.2 percent in District 8 to 18.5 in Districts 1 and 5.

Legumes Important In Northeast and East Central Districts

The northeast district reported about 16 percent of its farm land in legume crops. District 6 reported about 10 percent; District 5 and 9, a little over 8 percent; District 8, 4.4 percent; and the remaining districts, less than 3 percent. New seedings of legume crops as a percentage of the standing acreage of legumes was computed at 35 percent for the state as a whole. The range was reported from about 20 percent in District 5 to over 52 percent in District 3. The high rate of new seeding in the eastern districts reflects the larger acreage of sweetclover and red clover grown in the eastern counties.

Large Proportion of Introduced Grasses Are Grown Alone

Table 2 shows how introduced grasses are grown in Nebraska. Approximately 57 percent of the total standing acreage of introduced grasses is grown alone, while 24.4 percent is mixtures of intro-

TABLE 1

Percentage of total land in grasses and legumes and new seedings, by crop reporting districts, 1960

Crop Reporting Districts	Land devoted to: Native Grassland	Land devoted to: Improved Grassland	Land devoted to: Legumes	Grasses and legumes seeded in established native grass stands	New Seedings of: a/ Grass and mixtures as a percentage of total standing acreage of improved grassland b/	New Seedings of: a/ Legumes as a percentage of the total standing acreage of legumes c/
1	59.7	5.1	2.6	2.2	18.5	22.7
2	82.8	3.9	2.8	1.2	11.7	21.9
3	18.5	13.6	16.1	9.3	11.4	52.4
5	53.9	7.0	8.2	5.8	18.5	20.2
6	10.0	8.9	10.1	12.0	12.2	42.4
7	58.7	4.0	2.5	1.5	17.9	21.6
8	34.6	2.8	4.4	2.7	11.2	21.5
9	15.6	8.4	8.3	7.3	12.1	35.1
State	50.1	6.2	5.9	2.7	14.0	35.3

a/ August 1, 1959 to July 31, 1960.
b/ The question asked for the number of acres of pasture, range or other grassland seeded with grass or grass and legume mixtures during the period August 1, 1959 to July 31, 1960.
c/ The question asked for the number of acres of alfalfa, clover and other legumes (excluding soybeans and vetch) seeded during the period August 1, 1959 to July 31, 1960.

duced grasses and legumes. Mixtures involving only introduced grasses amount to 4.4 percent of the total, while mixtures involving introduced and native grasses account for 6.4 percent. Mixtures of introduced and native grasses combined with legumes amounted to 7.8 percent, including mixtures.

New seedings during the period August 1, 1959 to July 31, 1960 represented about 14 percent of the total acreage. The distribution of the acreage into the various mixtures was somewhat different for new seedings than for the entire standing acreage. For the new seedings, more emphasis was placed on combinations involving native grasses. The percentage of mixed introduced and native grasses in new seedings was 12 percent while that involving mixed introduced and native grasses and legumes was close to 11 percent. In contrast, the acreage of introduced grasses seeded alone was 52 percent.

By crop reporting districts, rather wide variations are noted in the percentage of the total standing acreage represented by introduced grasses grown alone. The percentage ranged from 28.5 in the Sandhills to 71 in the southeast district.

TABLE 2

Percentages of the total standing acreage of introduced grasses grown alone or involved in mixtures, by crop reporting districts, 1960

Crop Reporting Districts	Introduced Grasses Grown Alone	Mixed Introduced Grasses	Introduced Grasses Mixed With: Native Grasses	Legumes	Native Grasses and Legumes	Unknown or not Specified	Total
1	63.3	4.5	8.6	13.1	10.5	---	100
2	28.5	5.2	4.5	43.6	18.2	---	100
3	59.6	a/	1.1	35.9	2.9	---	100
5	42.5	16.4	23.4	12.8	3.9	1.0	100
6	70.0	1.2	2.0	20.9	5.7	a/	100
7	46.0	4.5	14.0	11.4	22.8	1.3	100
8	41.8	----	9.2	18.0	31.0	---	100
9	71.3	2.9	a/	24.0	a/	---	100
State	56.8	4.4	6.4	24.4	7.8	.2	100
New Seeding b/	52.3	3.7	11.6	21.7	10.6	.1	100

a/ Relatively small acreage. Included in state total.
b/ Portion of the total state acreage that was seeded during the period August 1959 - July 1960.

For mixed introduced grasses and legumes, which includes the popular bromegrass-alfalfa mixtures, the variation among different parts of the state also was wide, ranging from 11 percent in the southwest district to 36 percent in the northeast district and 44 percent in the Sandhills. Mixtures of introduced grasses, native grasses and legumes are more popular in the western districts than in the east. This also is true of mixtures involving introduced and native grasses without legumes.

Bromegrass Most Important Among Introduced Grasses

The importance of the various introduced grasses in Nebraska is shown in Table 3. The survey showed that bromegrass and wheatgrasses accounted for 91 percent of the total introduced grasses for the state as a whole. The percentages for other grasses were generally small, with timothy and redtop each representing about 2 percent of the total. The distribution of new seedings among the various introduced grasses showed somewhat more emphasis on wheat grasses than bromegrass. For the period August 1959-July 1960, about 46 percent of the introduced grasses sown was wheatgrasses while 42 percent was bromegrass. Somewhat more emphasis was placed on new seedings for other types of grasses, such as orchard grass, ryegrass, and tall fescue than on timothy or redtop.

Bromegrass represented more than 86 percent of the introduced grasses in the northeast and east central districts and 84 percent in the southeast. Close to 40 percent of the standing acreage was bromegrass in the north central and central districts. The south central had 57 percent while the southwest showed a third of the introduced grasses as bromegrass. Northwest counties favored wheatgrasses (82 percent of the total) while bromegrass accounted for less than 12 percent. Wheatgrasses also are popular in the north central, central and the southwest districts, where the percentage exceeded that of bromegrass. Introduced wheatgrass varieties are much less important in the three eastern districts ranging from 10 percent in the northeast to less than 3 percent in the southeast district.

Redtop, timothy, and Kentucky bluegrass show some importance in the north central counties. Tall fescue, orchard grass and timothy make up about 11 percent of the standing acreage of introduced grasses in the southeast district.

New seedings represented about 14 percent of the total standing acreage of introduced grasses. The percentage of the total in new seedings was largest in the western districts and smallest in the south central and eastern districts. In the northwest, 21 percent of the standing acreage was in new seedings. In the south central district, it amounted to only 7 percent.

Lincoln Bromegrass and Standard Crested Wheatgrass Most Popular Varieties

The Lincoln variety of bromegrass was by far the most popular. Growers in all districts preferred Lincoln over other varieties. In the Panhandle, other Southern bromegrasses occupied over 50 percent of the acreage. For the state as a whole, 41 percent of the acreage was planted with Lincoln bromegrass and 16.5 percent with other Southern bromegrasses. Canadian bromegrass accounted for 3.8 percent of the acreage and Lancaster 2.7 percent. Other varieties such as Lyon, Ackenbach, and Homesteader represented only fractional proportions of the total acreage in bromegrass. Mixed and unknown varieties represented about 16 percent of the total. Another 19.2 percent was reported as bromegrass but varieties were not specified by growers. In the eastern districts, where the Lincoln variety also is preferred, the percentage by districts ranged from 40 to nearly 50 percent of the acreage. In these districts, Southern brome accounted for 16 to about 18 percent. Canadian bromegrass showed up in the southwestern district, but the acreage was relatively small. Some Canadian bromegrass was planted in the north central, northeast and east central districts.

Standard crested wheatgrass represented 40 percent of the introduced wheatgrass varieties for the state as a whole. Next in importance was common intermediate wheatgrass, followed by tall wheatgrass, Nebraska 50 (intermediate) and Nordan crested wheatgrass with somewhat less than 2 percent of the total. Minor varieties were Amur (intermediate), Rhee (intermediate) and Fairway. About 26 percent of the acreage was listed as introduced wheatgrass, but the variety was not specified, or it was listed in a mixture as wheatgrass but varieties were not indicated.

Standard crested wheatgrass is important in the northwest, southwest and south central districts. In the Panhandle, close to 55 percent of the wheatgrass acreage was reported as the Standard crested variety and 14 percent as common intermediate. In the central district, which was next in importance in total wheatgrass acreage, Standard crested amounted to about 30 percent of the total and common intermediate about 18 percent. Percentagewise, Nebraska 50 (intermediate) showed up strongest in the east central and some south central counties, with a fair proportion also in the north central district.

Among the tall fescues, Alta held the largest acreage and common orchard grass was the only orchard grass reported. For both, a fairly substantial percentage did not specify variety. All of the Russian wildrye was reported as Vinall and nearly all of the ryegrass was perennial.

Bromegrass and Alfalfa Mixtures Widely Grown

Bromegrass and alfalfa mixtures are grown throughout the state, although the percentage in the western districts is small. About 21 percent of the bromegrass is grown as a mixture with alfalfa.

Growers have not been able to identify varieties of bromegrass-alfalfa mixtures as readily as they have for some of the other grasses and legumes. A fairly large percentage was classified as "bromegrass-alfalfa, variety not specified." For old stands, many farm operators were not able to identify varieties or were not aware of the varieties planted in past years. In many cases, original operators no longer farmed the tracts on which the seeding was made. For new seedings, varieties

TABLE 3

Percentage of total standing acreage, alone or mixed, of introduced grasses, by crop reporting districts, 1960

Kinds of Grasses	Crop Reporting Districts								State		
	1	2	3	5	6	7	8	9	Total	New a/ Seedings	All Other Stands
Bromegrass	11.8	39.0	86.5	39.5	86.1	33.2	57.0	84.3	54.0	42.3	55.9
Wheatgrasses. . . .	82.2	34.8	10.2	57.8	7.6	58.0	41.6	2.7	36.9	45.7	35.5
Tall Fescue.	1.4	b/	1.5	----	b/	2.8	----	3.1	1.1	2.8	.8
Orchardgrass. . . .	1.3	b/	b/	1.5	b/	1.5	----	4.6	1.4	4.5	.8
Russian Wildrye . .	b/	b/	----	----	b/	----	----	----	.1	.3	.1
Kentucky Bluegrass.	b/	2.7	1.2	----	1.9	----	----	2.0	1.2	----	1.4
Ryegrass	1.9	----	b/	b/	b/	----	1.4	----	.6	3.1	.2
Redtop.	b/	11.4	b/	b/	b/	3.5	----	b/	2.1	.2	2.4
Timothy.	b/	11.4	----	----	1.6	----	----	3.1	2.4	1.0	2.6
Other and Unknown .	----	----	----	b/	b/	1.0	----	----	.2	.1	.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Seedings c/ . .	20.7	11.8	9.0	17.3	11.6	15.6	7.2	11.7	14.0	----	----

a/ Seeded during the period August 1, 1959 - July 30, 1960.
b/ Relatively small percentage. Included in state total.
c/ New seedings as a percentage of the total standing acreage of all introduced grasses alone and mixed.

TABLE 4

Percentage of total standing acreage, alone and mixed, of introduced grasses in each variety by crop reporting districts, 1960

Kinds or Varieties	Crop Reporting Districts								State
	1	2	3	5	6	7	8	9	
Bromegrass									
Southern									
Lincoln	19.3	27.4	48.4	32.8	40.6	45.8	62.0	45.6	41.0
Lancaster	----	3.5	1.8	2.6	3.8	a/	a/	3.3	2.7
Lyon	----	----	----	----	a/	a/	----	----	.1
Ackenbach.	----	----	----	----	a/	----	----	----	.2
Other Southern . .	50.4	5.8	17.3	11.4	16.2	10.6	7.4	17.8	16.5
Homesteader	----	----	----	a/	----	----	a/	----	.1
Canadian.	a/	6.6	5.7	----	3.4	29.0	1.1	1.2	3.8
Mixed, unknown . .	5.9	5.3	11.3	19.5	23.3	----	9.3	21.4	15.8
Not specified. . . .	24.0	51.4	15.3	33.3	11.6	9.2	18.8	10.7	19.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wheatgrasses									
Standard crested. .	54.6	22.8	15.0	29.5	4.2	36.6	45.4	19.2	40.0
Nordan crested. . .	2.7	3.2	----	----	----	3.4	----	----	1.9
Fairway crested . .	a/	----	----	----	----	----	----	----	.1
Amur Intermediate.	a/	----	a/	a/	a/	----	----	----	.7
Nebraska 50 " .	3.5	9.7	7.1	8.8	26.3	10.2	12.2	----	6.8
Rhee Intermediate .	a/	----	----	a/	----	----	----	----	.4
Common " .	14.0	4.9	12.8	18.2	22.4	5.5	5.2	64.3	13.7
Tall.	7.0	3.0	4.7	8.0	11.6	21.3	----	----	7.1
Pubescent	----	----	----	----	----	----	----	----	----
Mixed, unknown . .	2.0	6.9	14.1	.4	1.6	8.8	1.4	----	3.1
Not specified. . . .	15.1	49.5	45.5	32.9	29.4	14.2	35.8	16.5	26.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tall Fescue									
Kentucky 31	----	----	39.9	----	----	----	----	8.9	12.4
Alta.	34.9	----	17.2	----	68.9	----	----	29.0	27.9
Not specified. . . .	65.1	----	42.9	----	31.1	100.0	----	62.1	59.7
Total.	100.0	----	100.0	----	100.0	100.0	----	100.0	100.0
Orchard Grass									
Common	60.6	----	90.6	----	45.7	46.7	----	37.4	37.5
Potomac	----	----	----	----	----	----	----	----	----
Not specified. . . .	39.4	100.0	9.4	100.0	54.3	53.3	----	62.6	62.5
Total.	100.0	100.0	100.0	100.0	100.0	100.0	----	100.0	100.0
Russian Wildrye									
Vinall.	100.0	100.0	----	----	100.0	----	----	----	100.0
Other.	----	----	----	----	----	----	----	----	----
Not specified. . . .	----	----	----	----	----	----	----	----	----
Total.	100.0	100.0	----	----	100.0	----	----	----	100.0
Ryegrass									
Annual	----	----	a/	----	a/	----	----	----	4.3
Perennial.	a/	----	----	----	a/	----	----	----	82.9
Not specified. . . .	----	----	----	----	a/	----	----	----	12.8
Total.	a/	----	a/	----	a/	----	----	----	100.0

a/ Relatively small acreage. Included in state total.

TABLE 5

Distribution of acreage in bromegrass-alfalfa mixtures, 1960

Crop Reporting Districts	Percentage of Total Bromegrass in Bromegrass-Alfalfa Mixtures	Varieties of Bromegrass-Alfalfa Mixtures					
		Lincoln Bromegrass mixed with:		Southern Bromegrass mixed with:		Varieties not specified	Total
		Common Alfalfa	Ranger Alfalfa	Common Alfalfa	Ranger Alfalfa		
	Percent	Percent	Percent	Percent	Percent	Percent	
1	18.5	----	----	21.4	----	78.6	100.0
2	28.9	15.7	7.5	----	----	76.8	100.0
3	30.7	16.3	5.5	2.1	----	76.1	100.0
5	9.1	1.8	59.8	----	----	38.4	100.0
6	17.0	11.5	20.1	.9	4.4	63.1	100.0
7	15.4	----	----	----	----	100.0	100.0
8	17.1	43.3	----	----	----	56.7	100.0
9	14.6	5.5	14.9	----	.4	79.2	100.0
State	20.7	12.7	12.0	1.9	.9	72.5	100.0

were more generally known, but even here nearly half of the new seedings were not identified as to varieties by respondents.

In the northeast district, somewhat over 30 percent of the bromegrass acreage was mixed with alfalfa and in the north central counties close to 30 percent was mixed. In the central district only 9 percent was in alfalfa mixtures. Most other districts have 15 to 17 percent in mixtures.

By varieties specified, Lincoln bromegrass was reported most frequently in mixtures with alfalfa. Lincoln bromegrass and common alfalfa made up about 13 percent of the total mixed bromegrass-alfalfa acreage and Lincoln bromegrass-Ranger alfalfa was reported at 12 percent. For the state, approximately 3 percent of the mixed acreage was designated Southern bromegrass mixed with either common or Ranger alfalfa. A large percentage of the mixed bromegrass-alfalfa acreage was not reported by varieties.

Native Grasses Mostly Seeded In Mixtures

Table 6 classifies the seeded acreage of native grasses grown alone or involved in mixtures. For the state as a whole, about 17 percent of the native grasses were seeded alone, while 83 percent were seeded in mixtures. About 22 percent of the seeding involved mixed native grasses only and a little under 25 percent involved mixtures of native grasses with introduced grasses and legumes. The distribution of new seedings during the August 1959-July 1960 period was reported without much change from the general pattern. About 15 percent of the total represented kinds and varieties seeded alone and the balance of about 85 percent involved native grasses seeded with mixtures.

The east central and southeast districts preferred seeding native grasses alone, with over 30 percent of the total following this practice. The Sandhill dis-

TABLE 6

Percentages of total seeded acreage of native grasses grown alone or involved in mixtures, by crop reporting districts, 1960

Crop Reporting Districts	Native Grasses Seeded Alone	Mixed Native Grasses	Native Grasses Mixed With:			Total
			Introduced Grasses	Legumes	Introduced Grasses and Legumes	
1	13.6	3.7	37.2	----	45.5	100.0
2	23.0	31.5	7.4	8.2	29.9	100.0
3	13.9	4.4	12.6	34.3	34.8	100.0
5	9.7	21.6	52.0	8.0	8.7	100.0
6	32.3	4.9	15.8	1.0	46.0	100.0
7	13.9	22.4	5.6	49.0	9.1	100.0
8	8.6	35.4	7.5	23.4	25.1	100.0
9	29.6	39.2	7.8	15.9	7.5	100.0
State	16.9	21.6	20.0	17.0	24.5	100.0
New Seedings a/	14.6	23.7	23.1	17.4	21.2	100.0

a/ Portion of the total state acreage that was seeded during the period August 1959-July 1960.

trict reported about 23 percent native grasses seeded alone. Other districts were mostly under 15 percent. Wide variations were reported in seeding of mixed native grasses ranging from small amounts in the northeast and east central districts to over 30 percent in the Sandhills, south central and southeast. Wide variations also existed in seeding mixed native grasses with introduced grasses, legumes and combinations. A fairly large proportion of the seeded acreage involving native grasses with these mixtures was reported in the northwest and central districts. Native grasses with legumes proved popular in the southwest and native grasses with introduced grasses and legumes represented a fairly heavy proportion of the total in the northwest, northeast and east central districts.

Table 6 is a companion table to Table 2, which presented similar information on introduced grasses. In the case of Table 6, however, the classification shows the percentage of the total expressed in terms of seeded acreage of native grasses in present stands where such seeding occurred. In Table 2, mixtures were expressed as a percentage of the total acreage involving introduced grasses.

Sand Lovegrass and Switchgrass Favored

Table 7 shows the kind of native grasses most commonly seeded alone or mixed in the state. For the state as a whole, nearly 20 percent of the native grasses seeded alone or in mixtures was seeded with sand lovegrass. Switchgrass comprised 18 percent. A little less than 22 percent of the total was in bluestem and bluestem mixtures while wheatgrass made up about 11 percent of the total. Blue grama comprised about 10, while side-oats grama and Indiangrass were each around 5 percent. Buffalograss made up a little less than 4 percent.

Distribution of new seedings among the various kinds of grasses was quite similar

TABLE 7

Percentage of Seeded Native grasses, alone or mixed, classified by kinds, by crop reporting districts, 1960

Kinds of Grasses	Crop Reporting Districts								State		
	1	2	3	5	6	7	8	9	Total	New a/ Seedings	All Other
Wheatgrasses . . .	36.6	6.6	2.5	16.1	----	2.9	11.0	b/	11.1	10.9	11.1
Side-oats Grama . .	1.9	b/	9.2	9.1	6.8	1.7	11.8	14.4	5.3	6.1	5.1
Blue Grama	6.7	8.6	----	19.8	----	7.4	10.9	b/	9.8	10.4	9.5
Hairy Grama	----	----	----	b/	----	----	3.3	----	.6	.9	.5
Reed Canarygrass .	----	9.7	b/	1.9	22.2	b/	----	b/	3.5	1.8	4.1
Indiangrass	----	6.2	9.4	5.6	6.9	3.7	b/	11.1	4.6	7.2	3.7
Big Bluestem . . .	1.9	2.4	9.7	5.2	b/	b/	11.9	11.1	4.3	5.4	3.9
Little Bluestem . .	b/	b/	7.9	5.1	----	3.7	6.6	7.2	3.6	2.7	3.9
Sand Bluestem . .	----	----	b/	1.5	----	----	----	----	.3	1.2	----
Bluestem Mixtures.	18.7	14.7	8.0	11.6	11.7	16.4	6.0	13.7	13.4	10.6	14.3
Sand Lovegrass . .	12.6	26.3	19.3	7.6	5.0	35.9	13.6	10.3	19.6	17.8	20.2
Dropseed	----	----	b/	----	----	----	b/	b/	.1	----	.1
Switchgrass	19.3	21.8	27.2	9.0	41.7	22.9	8.5	17.7	18.0	19.9	17.5
Buffalograss	b/	----	b/	4.3	----	4.4	10.1	8.1	3.6	.6	4.7
Green Needlegrass.	b/	----	5.6	1.5	----	----	4.2	----	1.1	3.3	.4
Sand Reedgrass . .	----	----	----	----	----	----	----	----	----	----	----
Canada Wildrye . .	----	----	----	----	----	b/	----	----	.1	.3	----
Other Native and not specified grasses.	----	2.4	----	b/	5.2	b/	b/	b/	1.0	.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Seedings c/ . .	12.1	27.3	10.3	38.0	22.0	14.7	36.0	26.4	25.6	----	----

a/ Seeded during the period August 1959-July 1960.
b/ Relatively small percentage. Included in state total.
c/ New seedings as a percentage of the total seeded acreage of all native grasses alone and mixed.

to the seedings reported in the older stands. Indiangrass, however, seemed to be gaining some popularity, as was the case with green needlegrass. Bluestem and bluestem mixtures added up to somewhat less for new seedings than for the older stands and quite a decrease was indicated for buffalograss.

Wheatgrass was most widely grown in the northwest and central districts. Side-oats grama was scarce in the western and north central districts but more popular in the central and eastern counties. Blue grama was not reported in the eastern third of the state. Bluestem and bluestem mixtures are rather widely grown throughout the state, especially in the southern districts. Fairly heavy concentration of seeding for sand lovegrass was indicated for the southwest and central districts. These mostly appeared as mixtures or in combination with other grasses. The popularity of switchgrass showed up in all districts except the central and south central.

Seedings of all native grasses for the August 1959-July 1960 period represented about 26 percent of the standing acreage reported by respondents. Most new seeding activity for all native grasses was in the central and south central districts with 38 and 36 percent. The northeast district showed about 10 percent new seedings for native grasses alone or in mixtures; the northwest was 12 percent; and the southwest, nearly 15 percent.

Western Wheatgrass and Sand Lovegrass Among The Leaders

In contrast with their identification of varieties of introduced grasses and legumes, respondents found it difficult in many cases to report specific kinds of native grasses. Fewer varieties of native grasses are available and variety names are less well known. Native wheatgrasses and dropseeds, of which no varieties are in cultivation, were designated only as kinds.

The detail for the most frequently reported kinds and varieties of grasses is shown in Table 8. Figures are presented for crop reporting districts to show the incidence of reporting in the different parts of the state. However, the crop reporting district figures are subject to a larger error than is the case for the state averages. While the individual figures shown are less dependable for districts, they do have relative values in showing the variations in the different parts of the state in the use of native grass seeds. The district percentages are footnoted where relatively small acreages are reported, but those using the statistics are cautioned that the percentages shown by districts are not necessarily precise.

Western wheatgrass was by far the leading native wheatgrass reported as seeded alone or mixed, representing 86 percent of the total native wheatgrass seeded. Nebraska 54 Indiangrass significantly outranked other varieties. Common sand lovegrass made up 30 percent of the sand lovegrass seedings. In the case of switchgrass, Nebraska 28 was favored, although more than half of the seedings were not specified as to varieties. Little difference showed up in the designation of Kaw and Common big bluestem and most seedings of Reed canarygrass were unspecified as to variety or were classed as common.

Over Three-Fourths of Legume Crops Grown Alone

Table 9 shows how legume crops are grown in Nebraska. About 76 percent of the total standing acreage of legume crops is grown alone. About 15 percent of the standing acreage is mixtures of legumes and introduced grasses. Mixtures of legumes and native grasses constitute about 3 percent of the total standing acreage while mixtures with introduced and native grasses amount to about 5 percent. Table 9 is a companion table for Tables 2 and 6. However, the percentage calculations are made using legumes and legume and grass mixtures as a base.

New seedings during the period August 1959 through July 1960 were about 28 percent of the total standing acreage. The distribution of new seedings was somewhat different than for the entire standing acreage, with nearly 88 percent of the new seedings grown alone and close to 12 percent involved in mixtures with grasses, both introduced and native. Mixtures of

TABLE 8

Percentage of total standing acreage, alone and mixed, in each variety of native grass by crop reporting districts, 1960

Kinds or Varieties	Crop Reporting Districts								State
	1	2	3	5	6	7	8	9	
Wheatgrasses									
Slender	8.3	a/	----	13.4	----	----	a/	----	7.0
Western	81.0	90.6	46.8	86.6	----	81.8	97.0	a/	86.0
Not specified. . .	10.7	9.1	53.2	----	----	18.2	a/	----	7.0
Total	100.0	100.0	100.0	100.0	----	100.0	100.0	a/	100.0
Side-Oats Grama									
Trailway	58.0	----	----	16.4	54.5	----	1.6	20.6	13.7
Butte	----	----	9.4	----	----	----	----	----	.5
Common	----	----	----	----	----	----	----	38.6	5.6
Not specified. . .	42.0	a/	90.6	83.6	45.5	100.0	98.4	40.8	80.2
Total.	100.0	a/	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reed Canarygrass									
Ioreed	----	a/	a/	----	----	----	----	a/	3.1
Common	a/	98.7	a/	48.2	61.7	----	----	a/	81.8
Not specified. . .	----	----	----	51.8	38.3	a/	----	----	15.1
Total	a/	100.0	a/	100.0	100.0	a/	----	a/	100.0
Indiangrass									
Nebraska 54 . . .	----	48.8	19.3	36.6	16.4	100.0	a/	33.6	47.9
Holt.	----	----	----	----	22.1	----	----	a/	1.3
Common	----	----	----	----	36.9	----	----	64.8	10.2
Not specified. . .	----	51.2	80.7	63.4	24.6	----	a/	----	40.6
Total	----	100.0	100.0	100.0	100.0	100.0	a/	100.0	100.0
Big Bluestem									
Kaw.	a/	48.2	18.8	a/	----	----	----	29.0	12.1
Common	61.1	25.9	----	10.7	a/	----	----	30.0	13.3
Not specified. . .	37.2	25.9	81.2	86.9	----	a/	100.0	41.0	74.6
Total.	100.0	100.0	100.0	100.0	a/	a/	100.0	100.0	100.0
Sand Lovegrass									
Nebraska 27 . . .	31.7	16.0	a/	3.0	a/	17.7	a/	----	14.6
Common	20.9	51.7	a/	10.5	a/	20.5	30.4	33.9	30.0
Not specified. . .	47.4	32.3	97.8	86.5	a/	61.8	68.7	66.1	55.4
Total	100.0	100.0	100.0	100.0	a/	100.0	100.0	100.0	100.0
Dropseed									
Sand	----	----	a/	----	----	----	----	----	11.8
Mixed.	----	----	----	----	----	----	a/	----	9.8
Not specified. . .	----	----	----	----	----	----	----	a/	78.4
Total.	----	----	a/	----	----	----	a/	a/	100.0
Switchgrass									
Nebraska 28 . . .	78.8	9.6	25.0	3.9	46.5	17.5	----	48.2	24.5
Blackwell	----	5.7	----	29.5	6.1	a/	a/	a/	5.6
Common	----	47.8	a/	----	8.4	15.7	----	a/	18.2
Not specified. . .	21.2	36.9	73.9	66.6	39.0	65.2	98.3	44.4	51.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a/ Relatively small acreage. Included in state total.

TABLE 9

Percentage of the total standing acreage of legumes grown alone or in mixtures, by crop reporting districts, 1960

Crop Reporting Districts	Legumes Grown Alone	Mixed Legumes	Legumes Mixed With: Introduced Grasses	Native Grasses	Introduced and Native Grasses	Total
1	72.3	---	15.3	---	12.4	100.0
2	65.3	2.3	21.2	2.4	8.8	100.0
3	76.8	a/	19.8	1.6	1.6	100.0
5	87.6	---	7.8	2.2	2.4	100.0
6	83.5	a/	12.6	a/	3.4	100.0
7	58.5	---	3.0	32.5	6.0	100.0
8	76.0	---	5.6	8.9	9.5	100.0
9	82.6	a/	15.4	1.2	a/	100.0
State	76.5	.5	14.9	3.3	4.8	100.0
New Seedings b/	87.9	.4	6.2	2.5	3.0	100.0

a/ Relatively small acreage. Included in state total.
b/ Distribution of the total acreage that was seeded during the period August 1959-July 1960.

legume crops without grasses constitute a relatively small percentage of the total acreage. Seeding practices involving only mixed legume crops are largely confined to the north central district.

By crop reporting districts, fairly wide variations are noted in the percentage of the total standing acreage devoted to legume crops grown alone. Except for the north central district and the southwest district, other districts are mostly over 72 percent, ranging up to nearly 88 percent in the central district. In the southwest district, which reported about 58 percent grown alone, a fairly large part of the standing acreage was in mixed legumes and native grasses. The predominant mixtures were various combinations of alfalfa with bluestem, sand lovegrass, and switchgrass. In the north central district (Sand-hills) with 65 percent of the legume acreage grown alone, a fairly large percentage of the standing acreage was legumes mixed with introduced grasses or combinations which included legumes, introduced grasses, and native grasses. In the northeast district, the survey showed about 77 percent of the acreage grown alone and 20 percent of the legumes mixed with introduced grasses. The proportion mixed with native grasses or native grasses and legumes was relatively small in this district, as was the case for the east central and southeast districts.

Alfalfa Represents About Two-Thirds of Legume Acreage

The importance of the various legume crops in Nebraska is shown in Table 10. The survey showed that 65.6 percent was alfalfa and 16.6 percent was sweetclover. Other legumes were of minor importance except red clover, which accounted for 6.5 percent. Distribution of new seedings was different than the total standing acreage, largely because of rotation

TABLE 10

Percentage of total standing acreage classified by kinds of legumes, by crop reporting districts, 1960

Kinds of Legumes	Crop Reporting District								State		
	1	2	3	5	6	7	8	9	Total	New a/ Seedings	All Other
Alfalfa	58.6	73.7	57.3	77.6	59.3	71.8	92.7	59.8	65.6	47.2	72.8
Red Clover.	b/	7.9	4.5	----	11.1	1.2	----	17.9	6.5	11.1	4.8
White Clover. . . .	2.3	----	----	----	1.1	1.5	----	.3	.6	.6	.6
Sweetclover	21.9	4.6	32.6	5.7	21.1	10.4	7.3	12.5	16.6	38.2	8.2
Alsike Clover . . .	----	1.7	b/	----	b/	b/	----	b/	.6	.2	.7
Strawberry Clover.	b/	----	----	----	----	----	----	----	c/	.1	----
Birdsfoot Trefoil .	b/	----	b/	----	b/	b/	----	b/	.3	.1	.3
Lespedeza	----	----	----	----	b/	----	----	3.7	.5	.1	.7
Unknown and not specified. . . .	15.5	12.1	4.2	16.7	6.9	14.2	----	5.4	9.3	2.4	11.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Seedings d/ . .	22.5	14.5	42.7	19.4	37.3	18.9	20.2	30.6	28.1	----	----

a/ Seeded during the period August 1959-July 1960.
b/ Relatively small percentage. Included in state total.
c/ Less than one-tenth of one percent.
d/ New seedings as a percentage of the total acreage of all legumes alone and mixed.

practices involving sweetclover and red clover. Thirty-eight percent of the new seedings was sweetclover and about 11 percent red clover. Alfalfa constituted only about 47 percent of the new seedings during the 1959-60 period. For the older stands, the percentage of the standing acreage in alfalfa was 73 percent; for sweetclover, 8 percent; and for red clover, 5 percent. White clover and alsike clover were of minor importance with less than 1 percent of the total in each case.

New seeding was 28 percent of the total legumes for the state, with district percentages ranging from 14 in the north central district to 43 in the northeast district. The eastern districts, which practice rotations with legumes, showed the highest percentage of new seedings, whereas the north central and southwest districts showed the lowest. In the latter two districts, sweetclover is relatively unimportant and alfalfa stands are maintained for quite a number of years. In the commercial alfalfa area of central Nebraska, new seedings represented 19-20 percent of the total standing acreage in legume crops. In these districts, sweetclover is relatively unimportant and red clover is rarely grown.

Ranger Alfalfa Leads

Ranger was the most popular variety of alfalfa in the State. Growers in all but two districts, the south central and the southeast, preferred Ranger. About 39 percent of the alfalfa acreage was devoted to Ranger. Over half of the acreage in the northwest and central districts was Ranger. Lowest was 29 percent in the north central district and Ranger was second best in the southeast. It was nearly as popular as Common alfalfa in the south central district.

Common alfalfa occupied 29 percent of the standing acreage, ranging from 16 percent in the Panhandle district to 48 percent in the southeast district. Other varieties were relatively unimportant. Cossack alfalfa made up about 5 percent of the state acreage and Grimm averaged 3 percent. Nomad alfalfa had somewhat over 1 percent. Most other varieties were an insignificant part of the total. Nearly 13 percent of the alfalfa acreage was not specified as to varieties. Another 8 percent was reported as mixed or unknown varieties.

Common red clover made up two-thirds of the red clover acreage in the state. Kenland represented 14 percent. Another 20 percent was not specified as to variety. Common red clover was most popular in the northeast and southeast districts, while Kenland showed up strong in the north central counties. The state averages for white clover show Common White Dutch with 38 percent of the acreage, Ladino with 12 percent, and about 50 percent not specified.

Common yellow blossom was the favorite sweetclover in all districts, being 77 percent of the total. Common white blossom was 4 percent of the state total, and Madrid 3 percent. Hubam was less than 1 percent and other varieties insignificant. For the state as a whole, approximately 10 percent of the acreage was seeded to mixed or unknown varieties. Another 5 percent was not specified as to varieties. Most of the Birdsfoot trefoil was grown with mixtures of other legumes and grasses. A large part of the acreage was not specified as to variety. Empire was 6 percent and 60 percent of the total was designated as common.

Most of the lespedeza is grown in the southeastern district. The survey showed 60 percent of the standing acreage of lespedeza was planted with common lespedeza. Eight percent was the Iowa 6 variety, and 32 percent was not specified.

As in the case of grass varieties, the data by crop reporting districts are subject to error, but are presented to furnish general information about the distribution of the different varieties. For leading varieties, district data are believed to be reasonable good, but for the minor varieties district figures have much less precision.

Acreages of Alfalfa, Bromegrass, and Wheatgrass Are Impressive

Estimates of the standing acreages of

TABLE 11

Percentages of total standing acreage, alone and mixed, in each variety of legumes, by crop reporting districts, 1960

Varieties of Legumes	Crop Reporting Districts								State
	1	2	3	5	6	7	8	9	
Alfalfa									
Ranger	50.5	28.7	38.7	52.0	43.7	34.6	31.2	32.7	39.2
Buffalo	a/	a/	a/	1.7	a/	1.3	2.9	a/	.8
Vernal	a/	a/	a/	----	a/	a/	----	a/	.2
Cossack	5.2	11.7	2.9	2.5	5.1	1.5	2.2	1.8	4.8
Grimm	3.6	4.2	1.7	2.9	2.2	1.8	2.3	4.6	3.0
DuPuits	----	----	.2	----	----	----	----	a/	b/
Ladak	a/	----	----	----	----	----	----	----	.1
Lahonton	----	----	----	----	----	1.0	----	----	.1
Teton	----	----	----	----	----	1.2	----	----	.1
Nomad	5.0	a/	a/	1.2	1.6	a/	3.2	a/	1.4
Rhizoma	a/	----	----	----	----	a/	----	----	.1
Commercial Hybrid	----	----	a/	a/	----	----	a/	----	.1
Common	16.2	22.3	33.0	28.6	30.8	16.7	34.2	47.5	29.1
Mixed, unknown	5.2	15.6	9.7	5.6	2.8	3.4	9.8	8.1	8.2
Not specified	11.9	16.1	12.9	5.2	12.7	37.2	13.8	4.0	12.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Red Clover									
Kenland	----	31.4	6.3	----	15.6	----	----	5.3	13.5
Common	100.0	48.7	76.8	----	48.9	100.0	----	84.0	66.5
Not specified	----	19.9	16.9	----	35.5	----	----	10.7	20.0
Total	100.0	100.0	100.0	----	100.0	100.0	----	100.0	100.0
White Clover									
Ladino	----	----	a/	----	a/	a/	----	a/	12.3
Common White Dutch	----	----	a/	----	75.1	a/	----	a/	38.0
Not specified	100.0	----	----	----	a/	----	----	----	49.7
Total	100.0	----	a/	----	100.0	a/	----	a/	100.0
Sweetclover									
Madrid	a/	a/	3.7	a/	a/	a/	----	8.5	3.2
Spanish	----	----	----	----	----	----	----	a/	.1
Hubam	----	----	a/	a/	a/	----	a/	a/	.8
Common									
Yellow Blossom	30.4	65.5	89.3	92.0	84.7	89.6	96.7	72.1	77.2
White Blossom	4.7	13.4	3.0	a/	4.0	a/	a/	a/	4.0
Mixed, unknown	41.5	8.7	1.3	a/	5.7	----	----	11.2	9.5
Not specified	22.8	5.7	2.2	----	a/	a/	----	a/	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Birdsfoot Trefoil									
Empire	----	----	a/	----	a/	----	----	----	5.6
Common	----	----	----	----	a/	----	----	a/	15.7
Not specified	100.0	----	a/	----	----	a/	----	a/	78.7
Total	100.0	----	a/	----	a/	a/	----	a/	100.0
Lespedeza									
Iowa 6	----	----	----	----	----	----	----	a/	7.7
Common	----	----	----	----	a/	----	----	58.8	60.0
Not specified	----	----	----	----	----	----	----	33.3	32.3
Total	----	----	----	----	a/	----	----	100.0	100.0

a/ Relatively small acreage. Included in state total.
b/ Less than one-tenth of one percent.

TABLE 12

Legumes and grasses, estimated standing acreage, 1960

Legumes and Grasses	Alone	In a/ Mixtures	Total, including mixtures a/
	000 acres	000 acres	000 acres
Legumes			
Alfalfa	1,400	450	1,850
Sweetclover . . .	370	100	470
Red Clover. . . .	145	39	184
White Clover. . .	5	12	17
Lespedeza	3.5	10.7	14.2
Birdsfoot Trefoil.	2.0	6.5	8.5
Grasses			
Bromegrass . . .	680	445	1,125
Wheatgrass. . . .	330	511	841
Timothy	5	45	50
Redtop	1	43	44
Orchard Grass . .	2	27	29
Tall Fescue . . .	.5	22.5	23
Ryegrass.	1	11.5	12.5

a/ Mixed acreage is reported for each crop, i.e., bromegrass-alfalfa mixtures show up in both the bromegrass and the alfalfa figures on acreage including mixtures.

various kinds of legumes and grasses are shown in Table 12. The estimated standing acreages were based on indications derived from the grass and legume survey. Agricultural data usually collected on legume and grass crops classify such crops according to primary use, such as for hay or seed or for pasture or soil improvement. Thus, it is not possible to determine from U.S. Census data, for example, the standing acreage of crops such as alfalfa where part of the acreage is listed as cut for hay and part included in cropland used for pasture or for soil improvement but not pastured. The total standing acreage of alfalfa, including mixtures, as estimated, exceeds the official estimate of the acreage of alfalfa and alfalfa mixtures harvested for hay.

The importance of crops such as alfalfa, bromegrass, wheatgrasses and sweetclover is brought out in these estimates. The estimated acreage also provides a base for determining approximate acreages of different varieties of legumes and grasses grown in the state.