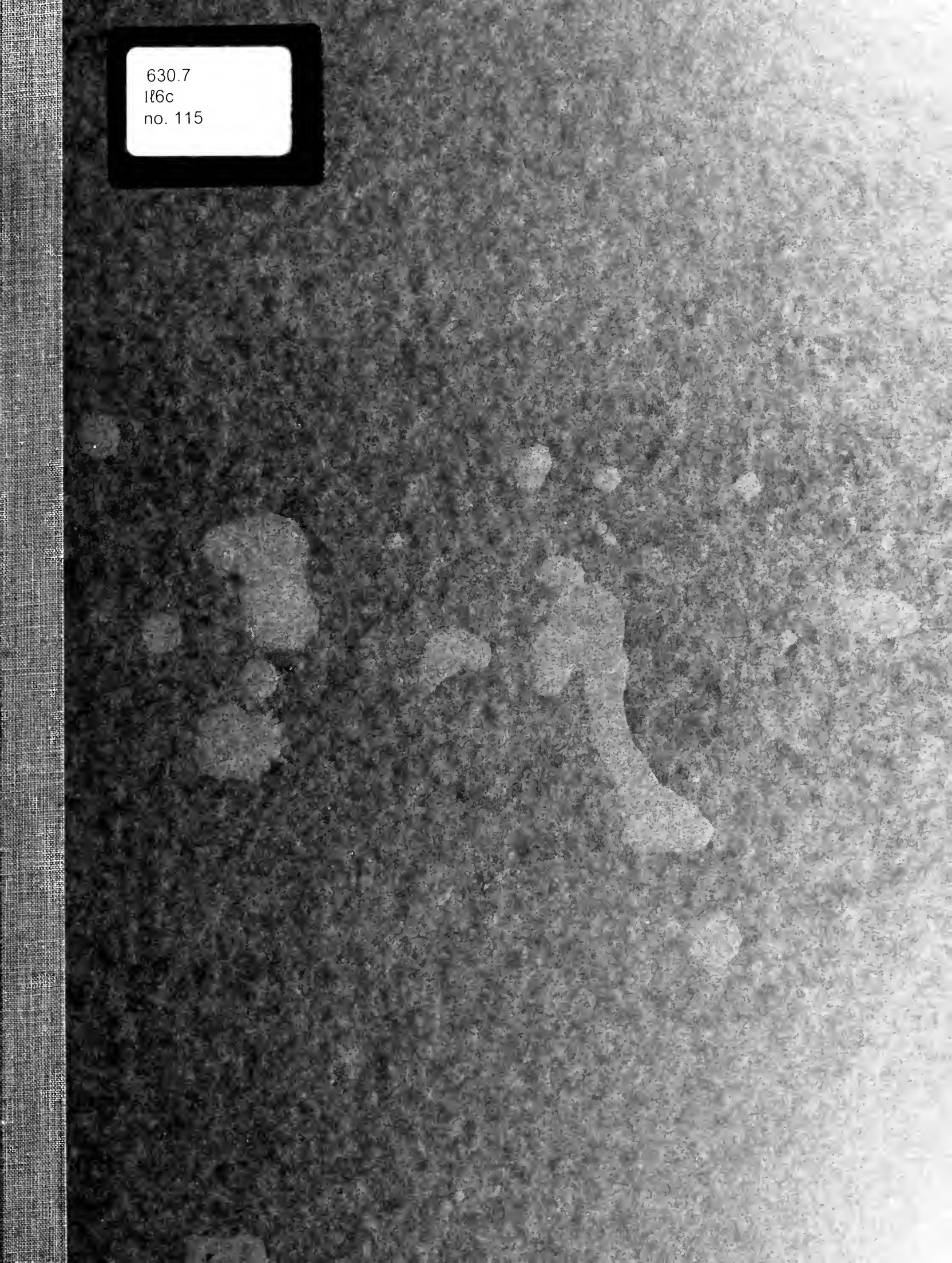
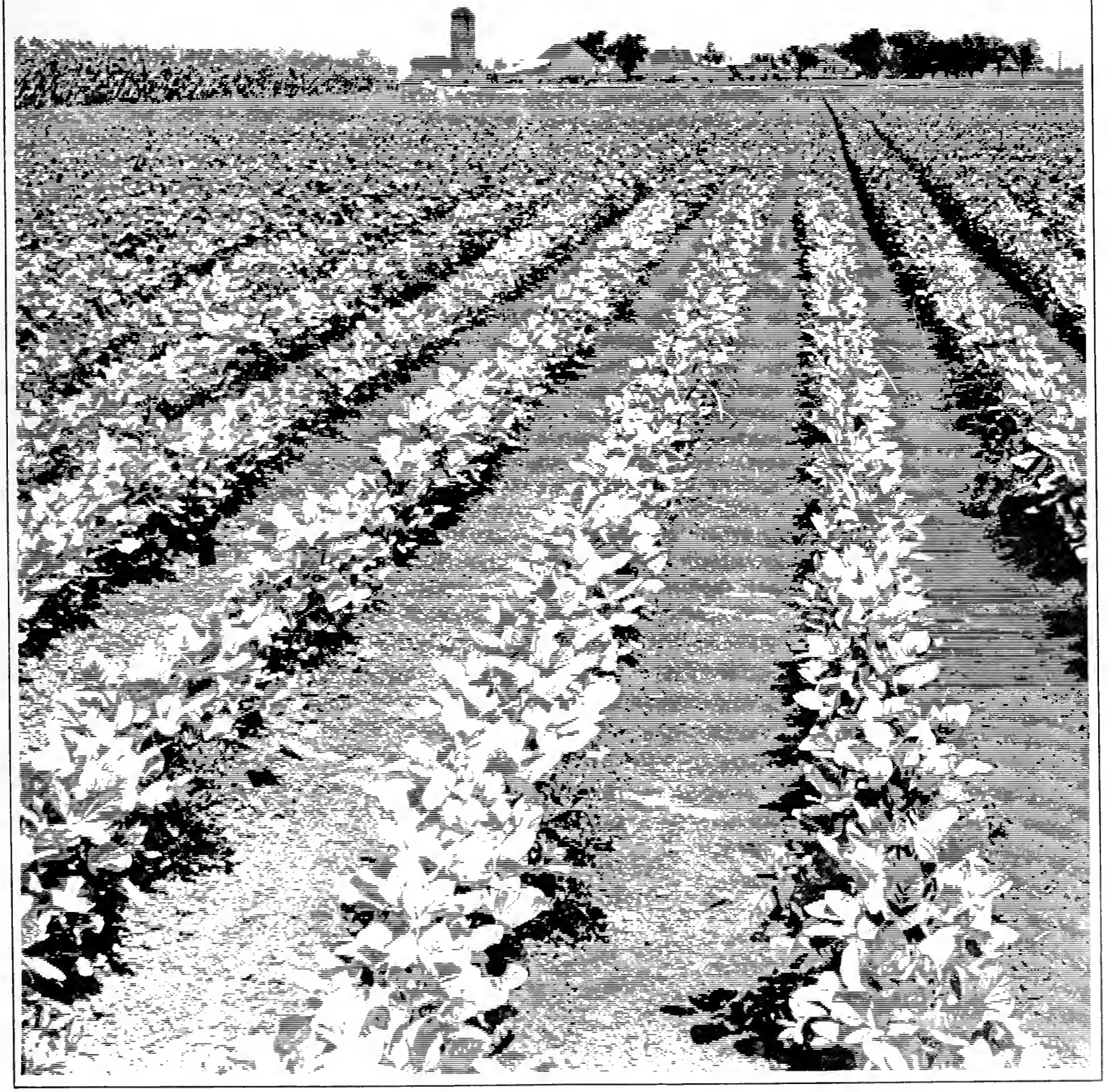


University of Illinois at Urbana-Champaign
College of Agriculture
Cooperative Extension Service
Circular 1156

Soil Productivity in Illinois



This circular was prepared by J. B. Fehrenbacher, Professor of Pedology; R. A. Pope, Assistant Professor of Soils Extension; I. J. Jansen, Assistant Professor of Pedology; and J. D. Alexander and B. W. Ray, Associate Professors of Pedology, Department of Agronomy. The authors are grateful to other members of the Department of Agronomy, to members of the Departments of Agricultural Economics and Forestry of the University of Illinois at Urbana-Champaign, and to the Soil Conservation Service of the United States Department of Agriculture for helpful suggestions and comments. This publication supersedes Circular 1016, "Productivity of Illinois Soils."

Published in cooperation with the Soil Conservation Service, U.S. Department of Agriculture.

Urbana, Illinois April, 1978

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. JOHN B. CLAAR, *Director*, Cooperative Extension Service, University of Illinois at Urbana-Champaign. The Illinois Cooperative Extension Service provides equal opportunities in programs and employment. 12M—4-78—40375—rgm

CONTENTS

INTRODUCTION

The good soils and humid, temperate climate of Illinois are particularly conducive to the production of high yields of corn and soybeans, the state's two major crops. Crop yields in Illinois have increased over a long period of time with the application of improved soil and crop management. There is every reason to believe that yield trends will continue upward with the development of even better crop varieties and the application of improved soil and crop management practices to more and more of the cropland in the state.

It is the purpose of this publication to show the average yields of various grain, forage, and tree crops obtainable on the various soil types in Illinois under basic and high levels of management. Productivity indexes are given for the various soils, and a simplified method of adjusting both yields and productivity indexes for slope and erosion is provided for the two levels of management. In addition, an estimation is made of how average management, as reflected in average state yields, may fit in the scale from a basic to high level of management. Prime agricultural land classes based upon grain-crop productivity indexes at the high level of management are assigned to the various soils.

The impact of improved technology on crop production is reflected in the continuing upward trend of yields obtained by Illinois farmers. Data collected by the Illinois Cooperative Crop Reporting Service (Fig. 1) show that average yields of corn nearly tripled and average yields of wheat more than doubled in the 39 years from 1939 to 1977. Average yields of oats and soybeans increased more than 50 percent during the same period.

Tables of estimated crop yields under basic and high levels of management previously published by the University of Illinois Department of Agronomy were based on the agricultural technology available in the late 1960's. The development and increased use of pesticides, fertilizers, improved crop varieties, narrower rows, more efficient machinery, etc. during the last decade have resulted in a 15-percent increase in average corn yields. Substantial increases have also occurred in average yields of soybeans (10 percent), wheat (15 percent), and oats (10 percent). The yield estimates given in this publication reflect these increases, and are consistent with the agricultural technology available in 1978.

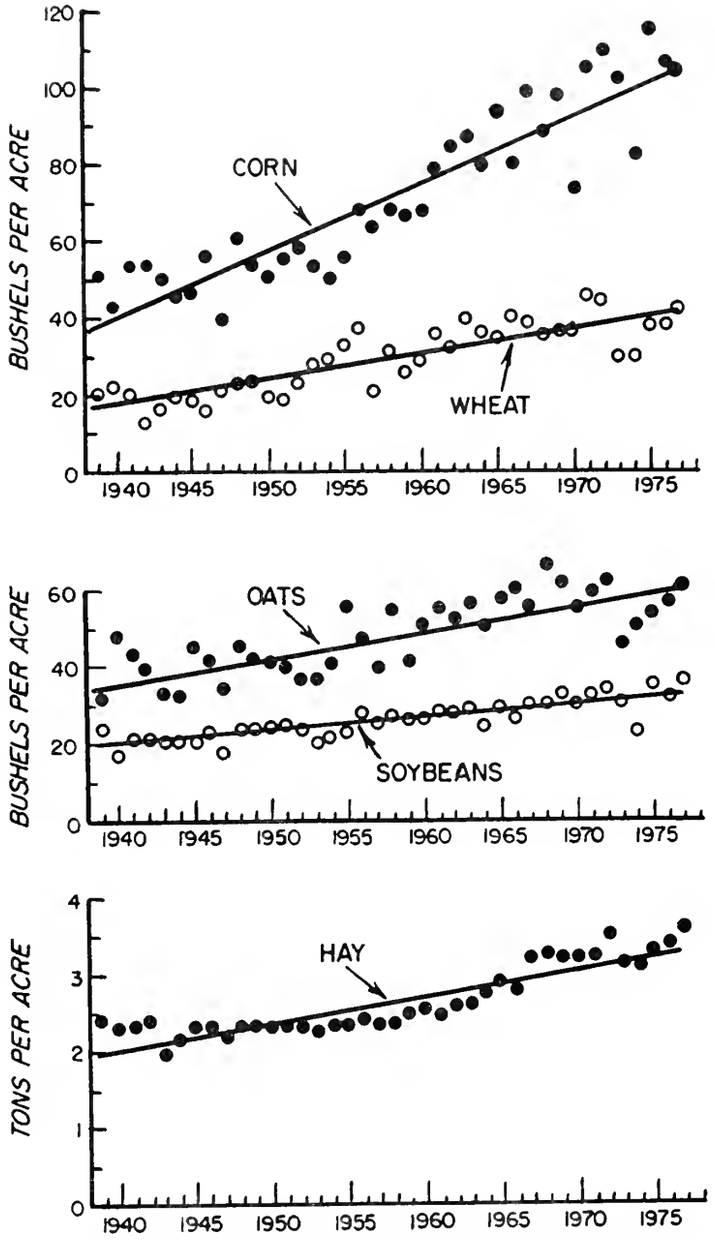


Figure 1. Trends of grain-crop yields in Illinois, 1939-1977. Data from Illinois Cooperative Crop Reporting Service. (X = years since 1939; Corn: Y = 38.4 + 1.77X; Wheat: Y = 16.6 + 0.68X; Oats: Y = 35.7 + 0.67X; Soybeans: Y = 19.5 + 0.37X; Hay: Y = 2.0 + 0.035X)

ESTIMATED CROP YIELDS IN ILLINOIS

Estimated yields under basic and high levels of management for the four major grain crops (corn, soybeans, wheat, and oats), hay and pasture, and tree crops in Illinois are shown in Table 2 (pages 10-16). Nearly all of the soils for which yields are given have been correlated in the soil survey of the state. Yields are not given for some crops on soils where these crops are not well adapted, including oats yields on certain soils restricted to southern Illinois (where little oats are grown); oats, wheat, hay, and deciduous and conifer timber yields for the organic soils; and conifer timber yields for the bottomland soils.

It is often desirable to compare the yields of different crops. Corn is a useful standard for these comparisons because it is both the principal and the highest yielding grain crop grown in Illinois. Based on the estimated yields given in Table 2, the yields of small grains, soy-

beans, and forage crops can be converted to their approximate equivalent in bushels of corn per acre by using the following factors:

Soybeans (bu. per acre) × 3 = Corn (bu. per acre)
Wheat (bu. per acre) × 2.5 = Corn (bu. per acre)
Oats (bu. per acre) × 1.7 = Corn (bu. per acre)
Hay (tons per acre) × 25 = Corn (bu. per acre)

These conversion factors are merely "rules of thumb," and do not account for differences in adaptation of the crops to specific soil conditions.

Basic and High Levels of Management

Crop yields produced by any soil under a given climate depend upon the technological inputs used and the capacity of the soil and crop to respond. Management is the selection and application of crop-production technology. Continuing increases in average crop yields result from improved management.

Because the impact of management on crop yields is so great, the level of management must be defined in order for measures of soil productivity to have any meaning. Table 2 shows estimated yields and productivity indexes under both basic and high levels of management. Some representative characteristics of the two management levels are given below.

Management factor	*Basic management*	*High management*
Drainage	Partial — more needed	Optimum for soil conditions
Soil pH	6.0 to 6.5	6.0 for grain; 6.5 for alfalfa and clover
Available phosphorus (P-1 test)	10-15 pounds per acre	40-50 pounds per acre
Available potassium	150-200 pounds per acre	240+ pounds per acre
Nitrogen rates per year for corn (or legume equivalent)	50-75 pounds per acre	125-175 pounds per acre
Plant population (corn)	12,000-14,000 plants per acre	20,000-24,000 plants per acre
Crop residues	Returned to soil	Returned to soil
Weed and insect control	Inadequate — often untimely	Adequate and timely
Tillage, planting, and harvesting operations	Often untimely — equipment poorly adjusted	Timely and fitted to soil and crop conditions
Soil erosion	Exceeds soil-loss tolerances	Within soil-loss tolerances

The basic level of management includes the minimum inputs considered necessary for crop production to be feasible. Some drainage, for example, is required before crops can be grown on naturally poorly drained soils. Limestone must be applied to highly acid soils. Nitrogen from fertilizers or legumes is essential for corn production. Requirements like these are met by basic management, but the inputs are far below those required for optimum production.

The high level of management includes inputs that are near those required for maximum profit with current technology. Estimated yields under a high level of management are attained and often surpassed by top farmers over a period of years.

Average Yields and Average Management

Average annual yield estimates of grain and hay crops in Illinois are available from the Illinois Cooperative Crop Reporting Service, Statistical Reporting Service, Springfield, Illinois. Average yields are given for the state, crop reporting districts, and counties. (The state average yields of selected crops from 1939 to 1977 are shown in Fig. 1.)

Average soil and crop management is difficult to define for a diversified area such as the State of Illinois. One might consider an average of the yields under basic and high management as a reflection of more or less average management. It is not known, however, how this "average" management might compare with the actual average management under which crops are produced in the state.

An approximation of how average management in Illinois compares with the basic and high levels of management was arrived at by comparing the state average yields given by the Illinois Cooperative Crop Reporting Service in recent years with the weighted state average yield estimates of each crop given in this publication. The weighted state average yields at the two management levels were calculated by weighting the yields for most of the soils in Illinois given in Table 2 by the percentage that each soil occupies in the state.

The percentages of each soil in the state were taken from the Conservation Needs Inventory, as summarized in Illinois Agricultural Experiment Station Bulletin 735. Soils occupying less than 0.1 percent of the state and steep soils, which are poorly suited to corn production, were excluded in these calculations. About 11 percent of the area of the state was excluded for corn, soybeans, wheat, and hay, and about 29 percent was excluded for oats.

The state weighted average yields of each crop at the basic and high management levels were then plotted against the weighted state average productivity indexes

of Illinois soils (Fig. 2). The weighted state average productivity indexes at the two management levels were calculated in the same manner as the weighted state average yields. The weighted state average soil productivity index of Illinois is 80 under a basic management level and 130 under a high management level (Fig. 2). (See pages 3-5 for a detailed discussion of productivity indexes.)

Average state yields for the last three, five, and ten years reported by the Crop Reporting Service for each crop were then calculated and plotted on the yield versus productivity index trend lines between basic and high management levels (Fig. 2). A straight-line relationship of yields to productivity indexes was assumed between the basic and high management levels.

State average corn, soybean, and wheat yields given by the Illinois Crop Reporting Service correspond to productivity indexes of about 95 to 105. Average hay yields for the state correspond to a productivity index of about 87, and average oat yields to a productivity index of about 82. Although these calculations do not define average management, they do indicate that management of oats and hay production in the state may be near the basic management level, and that management of corn, soybeans, and wheat is somewhat less than halfway between the basic and high management levels. There is also a strong indication that state average yields can be increased significantly by practicing better management on more of the cropland in Illinois.

Forage Yields of Illinois Soils

In addition to grain crop yields, Table 2 (pages 10-16) gives estimated yields of mixed grass-legume hay and animal days of mixed pasture. Yields are given for mixtures rather than for individual grasses and legumes. Mixtures with alfalfa tend to produce about the same yields as alfalfa alone, and are better suited for grazing and erosion control. Pasture yields are based on the assumption that one ton of hay or its pasture equivalent will support one cow for 50 days. Because fewer data are available, the estimated forage yields in Table 2 are less reliable than the estimated yields of grain crops.

Timber Yields of Illinois Soils

The annual timber growth estimates shown in Table 2 are based on the experience and judgment of professional foresters and soil scientists. Timber yields are not given for soils with a grain-crop productivity index of 85 or higher under the basic level of management because these soils are generally used for the production of grain and forage crops.

Crop Adaptation to Various Soils

Crops vary in their adaptation to various soils and climatic conditions. Oats, for example, is a cool-season crop that usually yields poorly in the relatively warm climate of southern Illinois. Corn and soybeans are better adapted than wheat and oats to naturally poorly drained soils. Forage crops, such as alfalfa, clovers, bromegrass, and orchardgrass, are better suited than corn and soybeans to well-drained, steep, or easily eroded soils.

Tree species also differ in their adaptation to specific soil conditions. Most conifers, such as pine, grow best on well-drained or even excessively drained soils but are not suited to wet, poorly drained sites. Some deciduous trees, such as upland oak, also do well on well-drained soils. Poorly drained bottomland soils will support water-loving trees such as cottonwood, silver maple, and ash.

Adaptation of a crop or timber group to a particular soil is reflected in the estimated yields. The yields of wheat and oats, for example, are not given for the organic soils because these crops are not well suited to the extreme wetness, low spring temperatures, and frost-heaving characteristics of organic soils. A range in timber growth is given for deciduous species on bottomland soils to indicate the rapid growth of trees such as cottonwood as opposed to slower growing trees such as the oaks. Conifer growth rates are not given for the bottomland soils because these trees are not generally well adapted to most of the bottomland soils.

PRODUCTIVITY INDEXES OF ILLINOIS SOILS

Soil productivity is strongly influenced by the capacity of a soil to supply the nutrient and soil-stored water needs of a growing crop in a given climate. Productivity also depends in part upon the adaptation of a particular crop to specific growing conditions and level of management. It is often necessary to compare soils that differ in suitability for particular crops or in response to management. Estimated crop yields are not suitable for these comparisons because yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indexes provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management.

Calculation of Productivity Indexes for Grain Crops

Productivity indexes for grain crops express the estimated yields of the major grain crops grown in Illinois as a single percentage of the average yields obtained

under basic management from several of the more productive soils in the state. This group of soils is composed of the Muscatine, Ipava, Sable, Lisbon, Drummer, Flanagan, Littleton, Elburn, and Joy soils. Under basic management, the average yields or base yields used to calculate productivity indexes for this group of soils are as follows: corn, 103 bushels; soybeans, 33 bushels; wheat, 34 bushels; and oats, 66 bushels per acre.

For example, the productivity index for Fayette silt loam under a high level of management is calculated as follows. (All productivity indexes are rounded to the nearest multiple of 5.)

Line number		*Fayette silt loam (No. 280) (Northern and Central Illinois)*			
		Corn	Soybeans	Wheat	Oats
1	Estimated yield under high level of management, bushels per acre	129	39	53	73
2	Base yield (index = 100).	103	33	34	66
3	Relative yield (line 1 ÷ line 2 × 100)	125.2	118.2	155.9	110.6
4	Fraction of total grain crop acreage	.55	.35	.06	.04
5	Weighted relative yield (line 3 × line 4)...	68.9	41.4	9.4	4.4
6	Productivity index (sum of line 5 data)		124.1		
	Rounded to the nearest multiple of 5 = 125				

Wheat and oats are relatively minor crops in northern and central Illinois, where Fayette soils occur. According to the Illinois Cooperative Crop Reporting Service, corn is grown on 55 percent, soybeans on 35 percent, wheat on 6 percent, and oats on 4 percent of the total grain crop acreage in northern and central Illinois. These percentages or fractions are used to weight the relative yields of the four grain crops (line 4 above). In southern Illinois, the relative acreages are as follows: corn, 35 percent; soybeans, 45 percent; wheat, 20 percent; and oats, 0 percent (virtually no oats are grown in southern Illinois). As used here, the term "southern Illinois" means the 36 southernmost counties of the state, bounded on the north by Madison, Bond, Fayette, Effingham, Cumberland, and Clark counties.

Another example of calculating productivity indexes is given below for Ava silt loam.

Line number		*Ava silt loam (No. 14) (Southern Illinois)*			
		Corn	Soybeans	Wheat	Oats
1	Estimated yield under high level of management, bushels per acre	98	33	48	0
2	Base yield (index = 100)..	103	33	34	66
3	Relative yield (line 1 ÷ line 2 × 100)	95.1	100.0	141.2	0
4	Fraction of total grain crop acreage	.35	.45	.20	0
5	Weighted relative yield (line 3 × line 4)....	33.3	45.0	28.2	0
6	Productivity index (sum of line 5 data)		106.5		
	Rounded to the nearest multiple of 5 = 105				

Productivity indexes have no units because they are relative rather than absolute measures of productive capacity. A productivity index of 150 is not the same as 150 bushels per acre of corn. The relationship between high-management productivity indexes and the yields of each of the major grain crops (Fig. 3) does show, however, that the average yield corresponds to a particular productivity index. For example, a soil that has a productivity index of 160 should produce approximately 163 bushels of corn, 94 bushels of oats, 67 bushels of wheat, and 52 bushels of soybeans per acre under a high level of management.

The capacity of a soil to respond to improved management is indicated by the difference between productivity indexes for basic and high levels of management. Flanagan silt loam (No. 154) and Drummer silty clay loam (No. 152) both have a basic level productivity index of 100 (see Table 2, page 11), but the differences between high and basic indexes are 60 and 50, respectively. Because thick, permeable, somewhat poorly drained Flanagan soils are less likely to have ponded water and slow

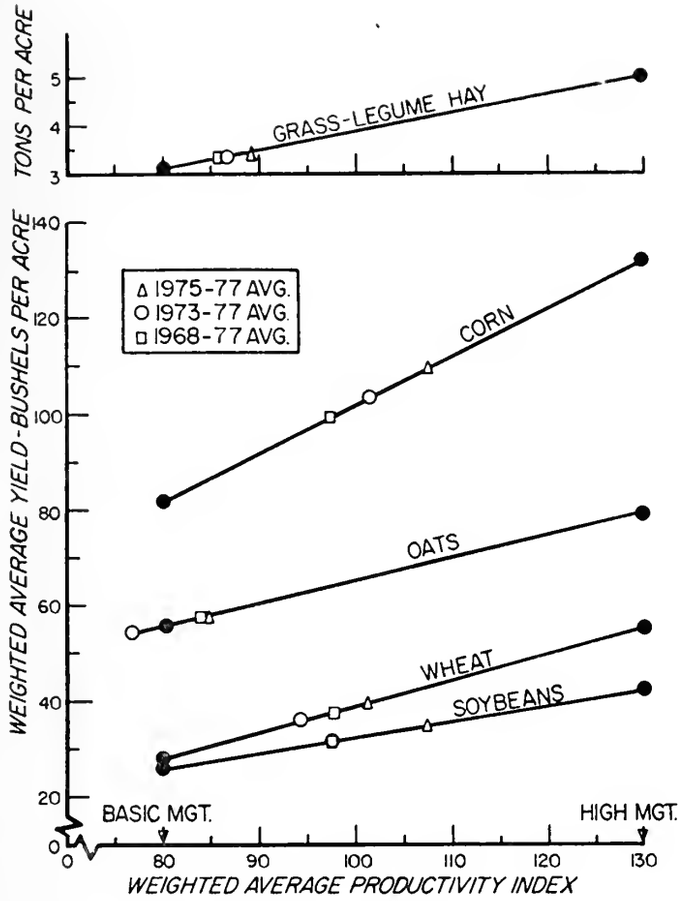


Figure 2. Comparison between Cooperative Crop Reporting Service state average yields and weighted average yields and productivity indexes under high and basic levels of management.

soil warming in the spring than the associated poorly drained Drummer soils, they are somewhat better able to respond to improved management practices.

Inputs required to achieve a similar response to management may differ widely for various soils. For example, both Tama silt loam (No. 36) and Ava silt loam (No. 14) have a difference of 50 units between basic- and high-management productivity indexes. Management inputs required to achieve that difference, however, are greater on the Ava soil, which has a root-restricting siltpan in the lower subsoil, than on the permeable Tama soil, which has no root-restricting layer.

Comparison Between Current and Previous Productivity Indexes for Grain Crops

Productivity indexes for many of the soils listed in Table 2 are the same as those published by the University of Illinois Department of Agronomy in 1970. Although crop yields have increased since that time, the relative differences in yields between soils have changed very little. Productivity indexes, which indicate relative differences between soils, have remained essentially the same, although indexes for a few soils have been changed to reflect new or more accurate knowledge of crop yields and responses to management.

Because many users in Illinois are familiar with the productivity indexes associated with various soils in the state, it seemed desirable to keep the productivity indexes essentially the same as those given in 1970, although crop yields have increased. For this reason, the base yields used in this publication are 15 percent higher for corn and wheat and 10 percent higher for soybeans, oats, and hay than the base yields published in Illinois Cooperative Extension Circular 1016, "Productivity of Illinois Soils."

The percentage increases in the base yields are the same as the increases in the state average yield of each of the four major grain crops and hay since 1968. The base yields used in Circular 1016 were obtained from the RL (residue and limestone) plots on representative Illinois agronomy fields. Since these treatments were discontinued after 1967, yields are no longer available.

Productivity Indexes for Forage Crops

Productivity indexes are not given for forage crops. Forage productivity indexes, calculated in a manner comparable to that for grain crops (using 3.8 tons per acre as a base yield) are similar to the grain-crops productivity indexes (Fig. 4). Since the two indexes are parallel and express nearly the same relationships between soils, the grain-crops productivity index can be used for comparing the productivities of various soils for forage crops.

ADJUSTMENTS IN CROP YIELDS AND PRODUCTIVITY INDEXES

It is necessary to make adjustments in crop yield estimates and productivity indexes for conditions other than those used in Table 2 (0- to 2-percent slopes, uneroded). Grain crop yields, for example, decrease as slope increases and erosion becomes more severe. Some adjustments, such as for flood damage, may be extremely variable and require local knowledge for a reasonable assessment of the situation.

Adjustments for Increasing Slope and Erosion

The yield estimates and productivity indexes given in Table 2 are for 0- to 2-percent slopes and uneroded conditions. It should be emphasized that relatively few Illinois soils occur on slopes that are not partially within the 0- to 2-percent slope class. The term "uneroded" is meant to include a range from no erosion to slight erosion. Since yields were estimated and productivity

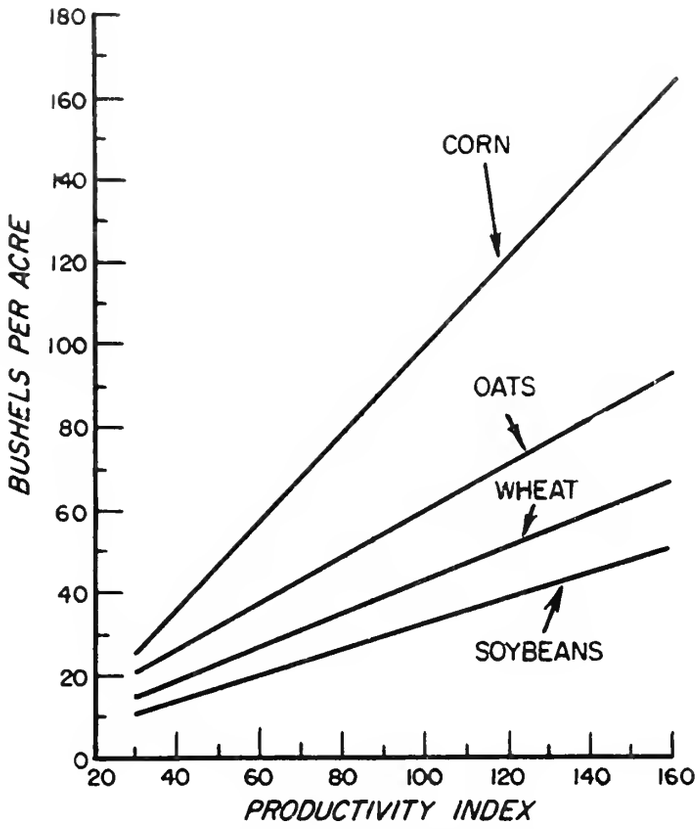


Figure 3. Relationship between yields and productivity indexes under high level of management. (Corn Yield = (1.06) PI + 6.28; Oats Yield = (0.565) PI + 3.38; Wheat Yield = (0.400) PI + 2.97; Soybeans Yield = (0.312) PI + 2.01)

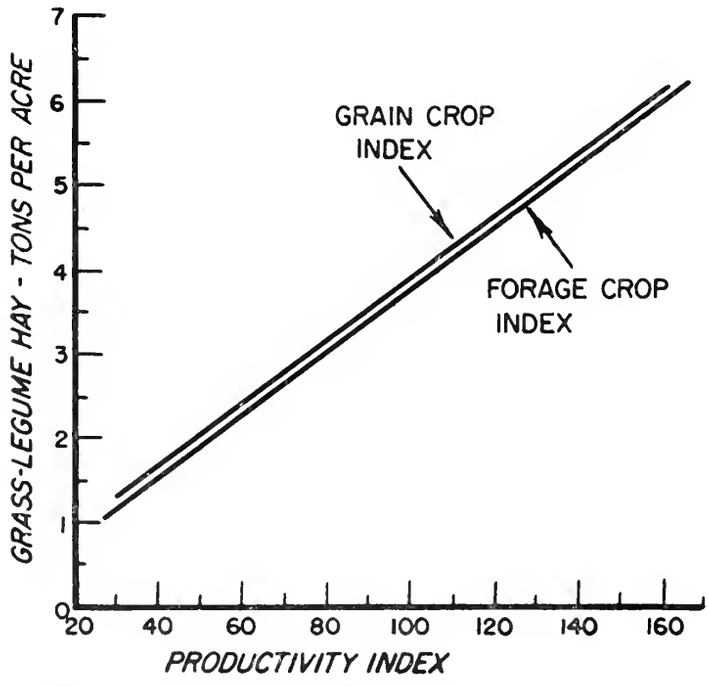


Figure 4. Relationship between hay yields and grain-crop and forage-crop productivity indexes. (Grain-Crop Index (hay, tons per acre) = (0.0376) grain PI + 0.156; Forage-Crop Index (hay, tons per acre) = (0.0381) forage PI − 0.0032)

indexes were calculated for these conditions on all soils, however, adjustments for slope and erosion are always reductions in the values given in Table 2. The range in slope gradients for all soils in the state are given in the alphabetical index to Illinois soils in the back of this publication (pages 17-21).

The two erosion classes for which adjustments are suggested here are *moderate erosion* and *severe erosion.* Moderate erosion is defined as significant erosion. Subsoil is evident in the plow layer in much of the moderately eroded areas that have been freshly plowed. Enough subsoil has been mixed with the surface soil to change the behavior of the plow layer from that occurring in uneroded or slightly eroded areas. Severe erosion is defined as extreme erosion, a condition in which all or nearly all of the surface soil (or A horizon) and probably some of the subsoil has been lost. Management problems are usually severe, depending upon the nature of the exposed subsoil.

Table 1 shows percentage adjustments for common slope groups and erosion conditions. Adjustments for steeper slopes and greater erosion are given as percentages of yields and productivity indexes for the base conditions (0- to 2-percent slopes, uneroded) under high and basic levels of management.

On sloping soils that are subject to erosion, greater reductions for slope and erosion are made on those soils that have unfavorable subsoils for root growth. Unfavorable subsoils or other shallow subsurface layers include those with high clay content, poor structure, high gravel content, dense pans (fragipan horizons), high sodium content, and massive bedrock. The sloping soils with unfavorable subsoils that are subject to erosion are indicated in Table 2 by footnote e.

The adjustment percentages given in Table 1 for various slope groups and erosion conditions with favorable or unfavorable subsoils under high and basic levels of management are plotted in Fig. 5. Fig. 5 can be used to obtain the percentage adjustment in yields and productivity indexes on all soils for any slope group and erosion combination.

For example, to calculate the grain yields and productivity index under a high level of management for soil type No. 36, Tama silt loam, 7- to 12-percent slopes, severely eroded, obtain the yields for Tama given in Table 2 for 0- to 2-percent slopes, uneroded conditions: 155 for corn, 46 for soybeans, 62 for wheat, and 89 bushels per acre for oats. The productivity index is 150. Place the midpoint of the 7- to 12-percent slope group, 9½ percent, on the horizontal axis of Fig. 5 (high management) and follow straight down to the curved line for severe erosion and favorable subsoil; then follow horizontally to the left and read on the vertical axis the

Table 1. Percentage Adjustments in Yields Under High and Basic Levels of Management for Common Slope Groups and Various Erosion Conditions

Slope	High management, favorable subsoil			High management, unfavorable subsoil			Basic management, favorable subsoil			Basic management, unfavorable subsoil		
	Uneroded	Moderate erosion	Severe erosion	Uneroded	Maderate erosion	Severe erosion	Uneroded	Moderate erasion	Severe erasion	Uneraded	Moderate erosion	Severe erosion
(percent)	(percent)			(percent)			(percent)			(percent)		
0–2	100	97	90	100	95	80	100	95	85	100	90	75
2–5	99	96	89	99	94	79	98	93	83	98	88	73
5–10	97	94	87	96	91	76	95	90	80	94	84	69
10–15	93	90	83	91	86	71	90	85	75	88	78	63
15–20	87	84	77	85	80	65	84	79	69	82	72	57
20–25	80	77	70	78	73	58	77	72	62	74	64	49
25–30	71	68	61	69	64	49	68	63	53	65	55	40
30–35	60	57	50	58	53	38	57	52	42	54	44	29
35–40	52	49	42	50	45	30	49	44	34	46	36	21
45–	48	45	38	46	41	26	45	40	30	42	32	17

percentage by which the base yields and productivity index in Table 2 should be multiplied to make the adjustment. In this example, the yields and productivity index in Table 2 should be multiplied by 86 percent to make the adjustment. The yields and productivity index for Tama silt loam, 7- to 12-percent slopes, severely eroded, are 133 bushels per acre for corn, 40 for soybeans, 53 for wheat, and 77 for oats, and the grain-crop productivity index is 129 (130 when rounded to the nearest multiple of 5).

The curves in Fig. 5 include adjustments for slopes to 48 percent. Yields of the grain crops are seldom given for slopes greater than about 15 to 20 percent because of the problems of controlling erosion and otherwise obtaining good yields on the steeper slopes. The portion of the curves from about 20- to about 45-percent slope is useful mainly for adjusting productivity indexes on steep land for land valuation purposes. The shape of the curves indicates that yields and productivity indexes decrease slowly on gentle slopes up to about 6- to 8-percent slope, decrease sharply to about 35-percent slope, and then begin to level off with little change beyond about 40-percent slope. In most cases, it is likely that slopes much greater than 45 percent do not affect productivity indexes much differently from those slopes near 45 percent. For this reason, it is suggested that the percentage adjustments in Fig. 5 for 45-percent slopes be used for all slope groups having a midpoint (average slope) greater than 45 percent.

Adjustment for Flooding

Estimated yields and productivity indexes given in Table 2 for bottomland soils apply to soils that are protected from flooding or a prolonged high water table during the cropping season because of high water in stream valleys. Soils that are subject to flooding are less productive than soils that are protected by levees, etc. The frequency and severity of flooding is often governed by landscape characteristics and management of the watershed in which a soil occurs. For this reason, factors used to adjust productivity indexes for flooding must be based upon knowledge of the characteristics and history of the specific site. Wide variation in the flood hazard, sometimes within short distances in a given valley, require that each situation be assessed locally.

If the history of flooding in a valley is known to have caused three years of essentially total crop failures out of ten years, for example, the estimated yields and productivity indexes of the bottomland soils could be reduced to 70 percent of those given in Table 2. Estimated crop yields and productivity indexes of upland soils subject to crop damage from ponding have been reduced accordingly in Table 2.

Adjustment for Soil Complexes and Soil Associations

A soil complex consists of two or more soils occurring together in a pattern that is too intricate for the individual soils to be delineated on the soil maps at the scale being used. Yield estimates and productivity indexes of a soil-complex area is an average of the yields and indexes of the component soils. For example, Huey silt loam (No. 120), a high-sodium soil, often occurs within some areas of Cisne silt loam (No. 2) in south central Illinois. These areas are delineated as a Cisne-Huey complex (No. 991) when the two soils cannot be separated at the scale used in mapping. The productivity index of the complex under a high management level when the two soils are present in equal amounts is 95,

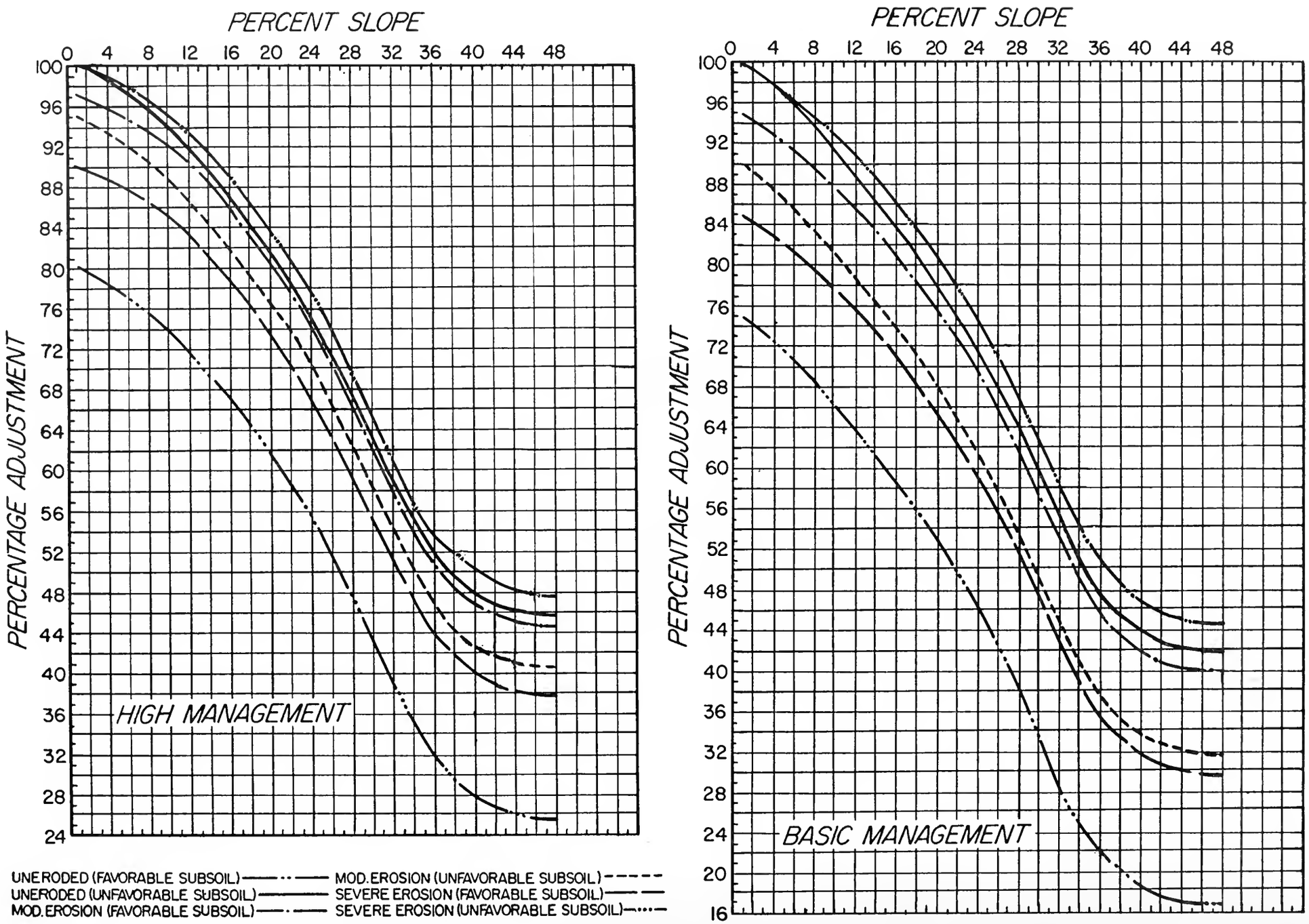


Figure 5. Percentage adjustments in yields and productivity indexes for various slope groups and erosion conditions with favorable and unfavorable subsoils under high and basic levels of management.

the average of the productivity indexes of Cisne (PI = 115) and Huey (PI = 75) soils. Weighted productivity indexes can be calculated if the percentage of each soil in the complex is known.

Soil associations are similar to soil complexes in many respects, but are usually used on general rather than on detailed soil maps. Like soil complexes, soil associations are geographic mixtures of two or more soils. When the percentages of the various soils are known, yield estimates and productivity indexes of soil associations are calculated in the same manner as for soil complexes.

PRIME AGRICULTURAL LAND CLASSES

As mentioned earlier, prime agricultural land classes based on grain-crop productivity indexes under the high level of management on 0- to 2-percent slopes, uneroded, were assigned to the various soils. These prime land classes are designated A, B, and C, and are shown in the next-to-last column in Table 2. Soils that do not have a land-class designation in this column have high-management productivity indexes below the minimum required for class C (PI = 105). Some of the soils not classed as prime agricultural land can be used for grain production, but others are best suited for hay, pasture, woodland, wildlife, or recreation.

The terms "prime agricultural land" and "prime farmland" have different meanings to different people. We have chosen to define prime agricultural land classes on the basis of the grain-crop productivity index at the high level of management. These indexes, which are based upon the grain-crop producing capacity of the soils, integrate all of the factors — crops, soils, and climate — involved in grain production at the high level of management under Illinois conditions.

The three prime agricultural land classes are actually three grades or subdivisions of prime agricultural land, and are defined as having high-level-of-management grain-crop productivity indexes of 145 to 160 for Class A, 125 to 140 for Class B, and 105 to 120 for Class C. These three grades of prime agricultural land have also been designated as Class A (excellent), Class B (very good), and Class C (good).

The minimum productivity index of 105 required for Class C prime agricultural land in the system used here corresponds fairly well with the cutoff point of prime farmland as defined by the USDA, Soil Conservation Service. A few Illinois soils with production capacities near the minimum required for Class C may be classified as prime agricultural land or prime farmland in one system and not in the other. The USDA system is a national system, and makes no distinction in soil quality within the broad class of prime farmland.

It should be noted that the prime agricultural land class of any uneroded soil in Illinois on slopes less than about 5 percent will not change from that given in Table 2, which lists the land class for 0- to 2-percent slopes, uneroded. On soils that have a wide slope range or are eroded, however, that portion of the soil having greater slope and erosion will tend to drop to a lower land class or perhaps entirely out of prime agricultural land. Generally speaking, soils having slopes greater than about 8 to 10 percent are not considered prime agricultural land or prime farmland in Illinois because of the erosion hazard and other difficulties in maintaining high production on steeper slopes.

Table 2. Productivity of Illinois Soils, Uneroded Conditions, 0- to 2-Percent Slopes

Soil type		Estimated crop yields per acre[a]												Timber yield per acre[b]		Productivity indexes Grain crops			Prime agr. land class[d]	Soil type No.
No.	Name	Basic level of management						High level of management												
		Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Deciduous	Conifer	Basic mgt.	High mgt.	Difference		
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
2	Cisne silt loam	63	20	23	0	2.3	115	115	35	52	0	4.5	225	200	1.0	60	115	55	C	2
3	Hoyleton silt loam	63	19	23	0	2.4	120	116	34	53	0	4.7	235	250	1.3	60	115	55	C	3
4	Richview silt loam	62	19	23	0	2.4	120	110	33	50	0	4.6	230	300	1.6	60	110	50	C	4
5	Blair silt loam	49	17	22	0	2.2	110	95	33	44	0	3.7	185	200	1.2	55	105	50	C	5
6	Fishhook silt loam[e]	41	11	17	26	1.7	85	76	22	24	46	2.6	130	125	.8	40	70	30		6
7	Atlas silt loam[e]	29	11	13	22	1.2	60	57	18	21	48	2.4	120	100	.6	30	55	25		7
8	Hickory loam	36	13	13	23	1.4	70	80	26	29	55	3.0	150	225	1.2	35	80	45		8
12	Wynoose silt loam	51	18	18	0	2.1	105	96	33	46	0	3.9	195	175	.9	50	105	55	C	12
13	Bluford silt loam	57	18	21	0	2.2	110	103	33	49	0	4.1	205	225	1.2	55	110	55	C	13
14	Ava silt loam[e]	49	17	22	0	2.2	110	98	33	48	0	4.3	215	275	1.5	55	105	50	C	14
15	Parke silt loam	63	19	23	0	2.3	115	112	35	53	0	4.5	225	300	1.5	60	115	55	C	15
16	Rushville silt loam	64	20	23	39	2.2	110	114	36	47	64	4.2	210	250	1.1	60	110	50	C	16
17	Keomah silt loam	82	24	28	53	3.0	150	129	39	52	72	5.1	255	300	1.4	75	125	50	B	17
18	Clinton silt loam	79	23	26	51	3.2	160	129	39	53	73	5.2	260	350	1.7	75	125	50	B	18
19	Sylvan silt loam	63	19	22	37	2.4	120	112	35	53	66	5.0	250	325	1.6	60	110	50	C	19
21	Pecatonica silt loam	75	22	25	46	2.8	140	118	35	49	65	4.7	235	350	1.7	70	115	45	C	21
22	Westville silt loam	66	22	25	43	2.5	125	114	35	47	64	4.2	210	325	1.5	65	110	45	C	22
23	Blount silt loam	60	20	22	36	2.3	115	106	35	48	64	4.3	215	225	1.2	60	105	45	C	23
24	Dodge silt loam	76	24	26	47	3.1	155	126	41	54	70	5.1	255	350	1.7	75	125	50	B	24
25	Hennepin loam[e]	30	12	13	22	1.4	70	63	19	22	37	2.5	125	175	.9	30	60	30		25
26	Wagner silt loam	60	20	20	32	2.0	100	106	35	49	65	3.9	195	200	1.1	60	105	45	C	26
27	Miami silt loam	70	22	24	43	2.8	140	121	40	51	68	4.8	240	300	1.4	70	120	50	C	27
28	Jules silt loam	74	22	24	42	3.0	150	129	41	53	73	5.2	260	350-500	0	70	125	55	B	28
29	Dubuque silt loam	43	15	20	32	2.0	100	83	25	36	53	3.4	170	250	1.1	45	80	35		29
30	Hamburg silt	35	13	13	23	1.5	75	67	22	32	45	3.2	160	125	.5	35	65	30		30
34	Tallula silt loam	75	21	24	42	2.8	140	121	40	52	72	4.8	240	250	1.1	70	120	50	C	34
35	Bold silt loam	43	13	17	30	1.9	95	74	22	34	45	3.3	165	175	.7	40	70	30		35
36	Tama silt loam	100	32	36	66	4.0	200	155	46	62	89	5.9	295			100	150	50	A	36
37	Worthen silt loam	99	32	36	65	3.9	195	151	46	62	88	5.9	295			95	145	50	A	37
40	Dodgeville silt loam	66	22	25	43	2.5	125	98	36	48	66	4.1	205	275	1.2	65	105	40	C	40
41	Muscatine silt loam	104	33	34	68	4.0	200	167	51	64	95	6.2	310			100	160	60	A	41
42	Papineau fine sandy loam	56	18	18	31	2.1	105	98	31	40	57	3.7	185	200	1.3	55	95	40		42
43	Ipava silt loam	103	33	35	67	4.0	200	163	52	66	91	6.1	305			100	160	60	A	43
45	Denny silt loam	70	23	23	39	2.3	115	113	37	46	62	4.0	200	225	1.0	70	110	40	C	45
46	Herrick silt loam	89	30	33	64	3.4	170	141	45	61	78	5.5	275			90	140	50	B	46
47	Virden silt loam	92	31	30	63	3.3	165	144	46	60	75	5.3	265			90	140	50	B	47
48	Ebbert silt loam	83	28	29	0	3.0	150	130	42	54	0	5.0	250			85	135	50	B	48
49	Watseka loamy fine sand	59	18	20	34	2.1	105	92	31	43	62	3.7	185	125	1.2	55	95	40		49
50	Virden silty clay loam	91	30	30	61	3.2	160	138	46	57	72	5.2	260			90	135	45	B	50
53	Bloomfield fine sand	49	13	15	28	1.7	85	79	31	41	51	3.2	160	100	1.2	45	85	40		53
54	Plainfield sand	37	11	13	24	1.4	70	57	20	28	40	2.4	120	75	1.0	35	60	25		54
55	Sidell silt loam	89	25	29	57	3.4	170	138	45	58	80	5.5	275			85	135	50	B	55
56	Dana silt loam	92	28	31	64	3.4	170	143	45	60	85	5.5	275			90	140	50	B	56
57	Montmorenci silt loam	78	24	26	47	3.1	155	126	42	54	77	5.1	255	350	1.6	75	125	50	B	57
59	Lisbon silt loam	102	32	34	66	3.8	190	155	51	63	92	5.9	295			100	155	55	A	59
60	LaRose silt loam	80	23	25	50	3.2	160	123	41	52	74	4.8	240	325	1.5	75	125	50	B	60
61	Atterberry silt loam	94	30	32	63	3.5	175	149	44	60	85	5.6	280			90	140	50	B	61
62	Herbert silt loam	87	28	30	59	3.3	165	140	44	56	81	5.4	270			85	135	50	B	62
67	Harpster silty clay loam	89	26	26	57	3.0	150	136	44	52	74	5.0	250			85	135	50	B	67
68	Sable silty clay loam	103	34	32	64	3.5	175	156	51	61	85	5.6	280			100	155	55	A	68
69	Milford silty clay loam	91	29	28	53	3.1	155	131	48	56	81	5.2	260			90	135	45	B	69
70	Beaucoup silty clay loam	94	30	30	57	3.3	165	138	46	55	75	5.1	255			90	135	45	B	70
71	Darwin silty clay	64	22	20	33	2.0	100	99	35	47	63	3.5	175	350-500	0	65	100	35		71
72	Sharon silt loam	71	24	26	41	2.9	145	132	40	55	72	5.0	250	450-600	0	70	125	55	B	72
73	Ross loam	94	31	32	65	3.5	175	145	46	60	80	5.5	275			95	140	45	B	73
74	Radford silt loam	95	32	32	65	3.6	180	143	46	61	84	5.6	280			95	140	45	B	74
75	Drury silt loam	89	26	29	51	3.4	170	126	40	57	77	5.0	250			85	125	40	B	75
76	Otter silt loam	92	31	32	64	3.4	170	143	46	49	69	4.7	235			90	140	50	B	76
77	Huntsville silt loam	100	33	36	68	4.0	200	152	48	64	86	5.8	290			100	150	50	A	77
78	Arenzville silt loam	89	28	30	62	3.4	170	138	42	56	79	5.4	270			85	135	50	B	78
81	Littleton silt loam	103	33	35	66	3.8	190	159	50	63	90	6.1	305			100	155	55	A	81
82	Millington loam	86	26	24	46	2.9	145	133	41	52	68	4.6	230	425-575	0	80	130	50	B	82
83	Wabash silty clay	74	24	22	36	2.3	115	106	35	43	55	3.7	185	375-525	0	70	105	35	C	83
84	Okaw silt loam	47	17	16	24	1.5	75	84	28	41	54	3.1	155	175	.9	45	85	40		84
85	Jacob clay	36	13	13	23	1.1	55	66	26	29	37	2.3	115	350-450	0	35	70	35		85

(Footnotes on page 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a]												Timber yield per acre[b]		Productivity indexes Grain crops			Prime agr. land class[d]	Soil type No.
		Basic level of management						High level of management												
		Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Deciduous	Conifer	Basic mgt.	High mgt.	Difference		
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
87	Dickinson sandy loam	63	19	22	41	2.3	115	99	37	45	77	3.9	195	150	1.5	60	105	45	C	87
88	Sparta loamy sand	53	17	18	31	1.9	95	85	29	37	53	3.3	165	100	1.3	50	85	35		88
89	Maumee fine sandy loam	62	19	21	33	2.1	105	103	37	41	58	3.7	185	150	1.1	60	105	45	C	89
91	Swygert silty clay loam[e]	67	22	24	42	2.5	125	114	39	51	73	4.5	225	250	1.3	65	115	50	C	91
92	Sarpy sand	46	13	15	28	1.7	85	71	26	34	47	3.0	150	225-375	0	45	75	30		92
93	Rodman gravelly loam[e]	30	11	11	20	1.3	65	54	22	24	33	2.4	120	50	.5	30	60	30		93
97	Houghton peat	80	23	0	0	0	125	120	37	0	0	0	195	0	0	75	115	40	C	97
98	Ade loamy fine sand	59	18	21	36	2.1	105	91	31	41	57	3.7	185	125	1.4	55	90	35		98
100	Palms muck	78	22	0	0	0	115	115	36	0	0	0	180	0	0	70	110	40	C	100
102	LaHogue loam	85	26	31	58	3.3	165	129	43	56	80	5.2	260	250	1.3	80	130	50	B	102
103	Houghton muck	86	28	0	0	0	155	129	44	0	0	0	220	0	0	85	125	40	B	103
104	Virgil silt loam	95	30	31	64	3.5	175	148	45	60	84	5.6	280			90	140	50	B	104
105	Batavia silt loam	89	28	29	62	3.4	170	138	43	55	81	5.4	270			85	135	50	B	105
107	Sawmill silty clay loam	100	34	33	63	3.9	195	147	47	54	76	5.5	275			100	140	40	B	107
108	Bonnie silt loam	60	22	22	32	2.1	105	113	37	46	62	4.0	200	400-550	0	60	110	50	C	108
109	Racoon silt loam	61	21	22	0	2.2	110	108	35	48	0	4.1	205	200	1.1	60	115	55	C	109
112	Cowden silt loam	72	23	26	0	2.6	130	120	37	53	0	4.8	240	225	1.1	70	120	50	C	112
113	Oconee silt loam	69	22	25	0	2.9	145	120	36	54	0	5.0	250	300	1.4	70	120	50	C	113
116	Whitson silt loam	72	23	23	46	2.5	125	122	36	45	65	4.3	215	250	1.1	70	115	45	C	116
119	Elco silt loam	66	22	25	43	2.5	125	112	37	47	64	4.4	220	250	1.4	65	110	45	C	119
120	Huey silt loam	41	13	15	0	1.5	75	64	23	33	0	2.6	130	100	.5	40	75	35		120
122	Colp silt loam[e]	49	14	17	26	1.9	95	86	32	43	57	3.6	180	225	1.4	45	90	45		122
125	Selma loam	87	29	32	62	3.1	155	136	44	53	76	5.0	250			85	135	50	B	125
127	Harrison silt loam	80	26	29	55	3.2	160	136	42	59	76	5.3	265	400	1.9	80	130	50	B	127
128	Douglas silt loam	79	24	28	50	3.2	160	135	42	59	76	5.3	265	400	1.9	75	130	55	B	128
130	Pittwood fine sandy loam	78	25	24	52	2.8	140	120	41	49	73	4.5	225	275	1.3	75	120	45	C	130
131	Alvin fine sandy loam	68	21	23	37	2.5	125	99	37	47	67	4.1	205	175	1.5	65	105	40	C	131
132	Starks silt loam	79	24	25	53	3.1	155	129	40	55	72	5.1	255	300	1.4	75	125	50	B	132
134	Camden silt loam	74	22	24	47	3.0	150	125	39	55	72	5.0	250	325	1.7	70	120	50	B	134
136	Brooklyn silt loam	64	20	22	39	2.0	100	108	35	44	58	3.7	185	200	.9	60	105	45	C	136
137	Ellison silt loam	62	19	21	34	2.3	115	98	36	48	67	4.1	205	225	1.5	60	105	45	C	137
138	Shiloh silty clay loam	90	32	31	54	3.2	160	139	46	56	70	5.0	250			90	135	45	B	138
141	Wesley fine sandy loam	68	21	22	42	2.4	120	112	36	48	74	4.4	220	250	1.4	65	110	45	C	141
142	Patton silty clay loam	99	33	32	56	3.5	175	148	48	56	78	5.6	280			95	145	50	A	142
145	Saybrook silt loam	93	28	30	61	3.4	170	139	46	60	84	5.6	280			90	140	50	B	145
146	Elliott silt loam	78	25	28	51	3.1	155	128	45	55	79	5.1	255	275	1.4	75	130	55	B	146
147	Clarence silty clay loam[e]	55	19	21	32	2.1	105	100	35	47	66	4.1	205	225	1.2	55	105	50	C	147
148	Proctor silt loam	93	30	33	65	3.4	170	144	44	59	88	5.5	275			90	140	50	B	148
149	Brenton silt loam	101	33	35	66	3.9	195	160	47	62	91	5.9	295			100	150	50	A	149
150	Onarga sandy loam	69	22	24	44	2.6	130	110	36	48	74	4.2	210	200	1.6	65	110	45	C	150
151	Ridgeville fine sandy loam	76	24	25	52	3.1	155	115	40	53	75	4.6	230	250	1.6	75	120	45	C	151
152	Drummer silty clay loam	103	34	32	63	3.5	175	154	51	61	83	5.5	275			100	150	50	A	152
153	Pella silty clay loam	91	31	30	58	3.2	160	140	48	56	78	5.2	260			90	140	50	B	153
154	Flanagan silt loam	103	33	35	66	3.8	190	162	52	67	92	6.1	305			100	160	60	A	154
155	Stockland loam[e]	54	17	20	33	2.0	100	83	28	43	61	3.7	185	225	1.4	50	85	35		155
159	Pillot silt loam	74	22	25	44	2.8	140	112	36	49	75	4.3	215	325	1.6	70	110	40	C	159
162	Gorham silty clay loam	86	31	33	57	3.2	160	141	46	56	77	5.1	255			90	140	50	B	162
164	Stoy silt loam	69	20	23	0	2.5	125	112	35	52	0	4.5	225	275	1.3	65	115	50	C	164
165	Weir silt loam	57	19	21	0	2.1	105	103	34	45	0	3.9	195	200	1.0	60	110	50	C	165
167	Lukin silt loam	67	21	24	0	2.5	125	121	36	54	0	4.8	240	275	1.4	65	120	55	C	167
171	Catlin silt loam	98	30	33	65	3.7	185	150	46	61	87	5.8	290			95	145	50	A	171
172	Hoopeston sandy loam	71	21	24	44	2.5	125	105	33	47	70	4.1	205	175	1.3	65	105	40	C	172
173	McGary silt loam[e]	52	17	18	30	2.0	100	91	34	48	65	3.6	180	175	1.1	50	95	45		173
175	Lamont fine sandy loam	60	19	20	35	2.1	105	97	36	45	77	3.7	185	125	1.3	60	105	45	C	175
176	Marissa silt loam	87	29	32	57	3.3	165	137	44	57	77	5.3	265			85	135	50	B	176
178	Ruark fine sandy loam	61	18	22	35	2.1	105	100	35	44	73	3.5	175	225	1.1	60	105	45	C	178
180	Dupo silt loam	85	28	30	57	3.3	165	132	43	55	76	5.2	260			85	130	45	B	180
184	Roby fine sandy loam	66	21	23	39	2.5	125	98	36	45	73	4.0	200	200	1.4	65	105	40		184
187	Milroy sandy loam	62	18	18	35	2.0	100	91	32	40	55	3.4	170	200	1.0	55	95	40		187
188	Beardstown loam	75	25	26	54	3.0	150	116	37	52	66	4.5	225	300	1.4	75	115	40	C	188
189	Martinton silt loam	87	29	30	59	3.3	165	135	45	57	84	5.3	265			85	135	50	B	189
191	Knight silt loam	75	24	24	50	2.6	130	118	42	49	68	4.4	220	225	1.0	75	120	45	C	191
192	Del Rey silt loam	72	22	24	44	2.6	130	115	37	49	69	4.5	225	250	1.3	70	115	45	C	192
194	Morley silt loam	56	19	20	32	2.1	105	103	35	47	64	4.3	215	275	1.3	55	105	50	C	194
197	Troxel silt loam	99	32	33	64	3.6	180	148	45	55	79	5.4	270			95	140	45	B	197

(Footnotes on page 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a]												Timber yield per acre[b]		Productivity indexes Grain crops			Prime agr. land class[d]	Soil type No.
		Basic level of management						High level of management												
		Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Deciduous	Conifer	Basic mgt.	High mgt.	Difference		
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
198	Elburn silt loam	103	33	34	67	3.9	195	161	50	63	94	6.1	305			100	155	55	A	198
199	Plano silt loam	99	32	36	66	3.9	195	151	45	60	90	5.8	290			95	145	50	A	199
200	Orio sandy loam	78	23	24	46	2.6	130	112	37	47	64	4.1	205	250	1.2	75	110	35	C	200
201	Gilford fine sandy loam	75	23	24	47	2.5	125	110	39	46	68	4.1	205	200	1.2	70	110	40	C	201
204	Ayr sandy loam	76	24	26	53	2.9	145	118	39	52	70	4.5	225	250	1.7	75	120	45	C	204
205	Metea sandy loam	63	19	21	35	2.3	115	103	35	46	63	4.0	200	225	1.6	60	105	45	C	205
206	Thorp silt loam	76	25	25	53	2.8	140	126	42	51	69	4.6	230	275	1.3	75	125	50	B	206
208	Sexton silt loam	71	23	23	44	2.4	120	120	37	48	65	4.3	215	250	1.1	70	115	45	C	208
210	Lena muck	83	25	0	0	0	140	125	41	0	0	0	200	0	0	80	120	40	C	210
212	Thebes silt loam	66	21	23	38	2.4	120	100	35	46	73	4.0	200	300	1.5	65	105	40	C	212
214	Hosmer silt loam[e]	61	20	23	0	2.5	125	108	35	51	0	4.6	230	325	1.6	60	115	55	C	214
215	Wartrace silt loam	69	20	25	0	2.6	130	115	36	52	0	4.7	235	350	1.7	65	120	55	C	215
218	Newberry silt loam	68	22	24	0	2.4	120	118	37	53	0	4.5	225	175	.9	65	120	55	C	218
219	Millbrook silt loam	90	29	32	57	3.3	165	144	43	59	81	5.4	270			90	140	50	B	219
221	Parr silt loam	91	24	26	57	3.3	165	129	44	57	78	5.3	265	350	1.6	80	130	50	B	221
223	Varna silt loam	72	22	24	46	2.6	130	123	41	53	75	4.8	240	300	1.5	70	125	55	B	223
224	Strawn silt loam	60	19	20	35	2.2	110	109	32	43	59	4.0	200	250	1.2	60	105	45	C	224
227	Argyle silt loam	79	23	26	51	3.1	155	124	39	54	72	4.8	240	375	1.8	75	120	45	C	227
228	Nappanee silt loam[e]	46	14	16	29	1.8	90	87	31	40	55	3.4	170	175	1.0	45	90	45		228
229	Monee silt loam	51	17	16	28	1.7	85	87	32	41	55	3.3	165	125	.6	50	90	40		229
230	Rowe silty clay	64	21	21	34	2.2	110	108	40	45	63	4.0	200	200	1.0	60	110	50	C	230
232	Ashkum silty clay loam	87	29	28	51	3.1	155	130	47	54	79	5.0	250			85	135	50	B	232
233	Birkbeck silt loam	76	23	26	51	3.0	150	123	41	55	70	5.0	250	375	1.8	75	125	50	B	233
234	Sunbury silt loam	95	30	32	62	3.5	175	147	45	62	84	5.6	280			90	140	50	B	234
235	Bryce silty clay	76	25	24	43	2.6	130	120	43	48	70	4.4	220	225	1.1	75	120	45	C	235
236	Sabina silt loam	84	25	29	55	3.2	160	133	42	56	75	5.2	260	325	1.5	80	130	50	B	236
238	Rantoul silty clay	61	20	16	28	1.8	90	99	35	36	50	3.2	160	150	0	60	100	40		238
239	Dorchester silt loam	84	24	25	52	3.1	155	132	43	54	76	5.3	265	450-600	0	80	130	50	B	239
240	Plattville silt loam	75	25	28	54	3.0	150	117	42	53	75	4.6	230	300	1.4	75	120	45	C	240
241	Chatsworth silt loam[e]	29	11	13	22	1.2	60	46	16	22	33	2.1	105	75	.5	30	45	15		241
242	Kendall silt loam	84	25	28	56	3.2	160	135	41	55	75	5.2	260	325	1.5	80	130	50	B	242
243	St. Charles silt loam	77	23	26	52	3.0	150	127	40	56	73	5.1	255	375	1.8	75	125	50	B	243
244	Hartsburg silty clay loam	97	31	30	58	3.3	165	145	47	56	79	5.3	265			95	140	45	B	244
248	McFain silty clay	77	26	25	41	2.6	130	114	36	48	65	4.2	210	400-500	0	75	110	35	C	248
249	Edinburg silty clay loam	86	28	28	52	2.9	145	132	43	55	72	4.6	230			85	130	45	B	249
250	Velma loam	68	21	24	36	2.5	125	118	39	51	72	4.6	230	275	1.5	65	120	55	C	250
252	Harvel silty clay loam	91	30	30	54	3.1	155	138	45	52	70	5.1	255			90	135	45	B	252
253	Stonington loam[e]	49	14	18	32	1.9	95	76	25	36	55	3.4	170	200	1.2	45	75	30		253
256	Pana silt loam	68	21	24	36	2.5	125	108	35	45	62	4.2	210	275	1.5	65	105	40	C	256
257	Clarksdale silt loam	94	30	31	61	3.5	175	140	43	57	79	5.3	265			90	135	45	B	257
259	Assumption silt loam	78	22	25	46	2.9	145	128	39	56	77	5.0	250	300	1.6	70	125	55	B	259
261	Niota silt loam	51	17	17	30	1.9	95	86	30	39	53	3.3	165	175	1.0	50	90	40		261
262	Denrock silt loam	66	20	21	39	2.3	115	108	37	46	63	4.1	205	225	1.3	65	110	45	C	262
264	El Dara sandy loam	59	17	20	35	2.2	110	87	31	40	55	3.5	175	175	1.5	55	90	35		264
265	Lomax loam	75	22	25	46	2.8	140	110	36	45	66	4.4	220	250	1.7	70	110	40	C	265
266	Disco sandy loam	66	20	23	37	2.3	115	103	35	44	65	4.0	200	175	1.5	65	105	40	C	266
268	Mt. Carroll silt loam	89	26	31	55	3.4	170	137	43	57	84	5.4	270			85	135	50	B	268
271	Timula silt loam	63	19	21	35	2.3	115	103	35	46	63	4.2	210	225	1.0	60	105	45	C	271
272	Edgington silt loam	79	25	25	46	2.8	140	122	42	51	68	4.5	225	250	1.1	75	125	50	B	272
274	Seaton silt loam	70	21	24	45	2.8	140	118	35	49	69	4.8	240	375	1.7	65	115	50	C	274
275	Joy silt loam	103	32	35	67	3.9	195	161	48	63	92	6.1	305			100	155	55	A	275
277	Port Byron silt loam	98	31	34	66	3.9	195	150	45	61	88	5.6	280			95	145	50	A	277
278	Stronghurst silt loam	85	25	29	56	3.2	160	138	42	55	76	5.3	265	350	1.5	80	135	55	B	278
279	Rozetta silt loam	82	23	26	51	3.2	160	131	40	54	73	5.2	260	400	1.8	75	125	50	B	279
280	Fayette silt loam	79	23	26	51	3.2	160	129	39	53	73	5.2	260	400	1.8	75	125	50	B	280
282	Chute fine sand	30	11	11	20	1.4	70	55	22	24	33	2.4	120	85	.7	30	60	30		282
284	Tice silty clay loam	98	33	37	65	3.9	195	153	47	61	84	5.7	285			100	145	45	A	284
286	Carmi Sandy Loam	77	20	25	45	2.8	140	103	33	53	69	4.3	215	250	1.6	70	105	35	C	286
287	Chauncey silt loam	69	22	25	0	2.4	120	120	37	53	0	4.7	235	225	1.1	70	120	50	C	287
288	Petrolia silty clay loam	79	25	25	50	2.6	130	132	43	49	66	4.5	225	375-525	0	75	130	55	B	288
289	Omaha loam	86	24	29	58	3.1	155	115	41	56	75	4.6	230	275	1.5	80	120	40	C	289
290	Warsaw silt loam	86	23	28	58	3.1	155	115	40	53	74	4.6	230	325	1.5	80	120	40	C	290
291	Xenia silt loam	76	22	25	48	2.8	140	126	41	55	72	4.8	240	350	1.7	70	125	55	B	291
292	Wallkill silt loam	82	23	23	50	2.6	130	126	42	41	65	4.3	215	375-525	0	75	125	50	B	292
293	Andres silt loam	95	31	32	61	3.6	180	145	48	61	88	5.5	275			95	145	50	A	293

(Footnotes on poge 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a] — Basic level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	High level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Timber yield per acre[b]: Deciduous	Conifer	Productivity indexes Grain crops: Basic mgt.	High mgt.	Difference	Prime agr. land class[d]	Soil type No.
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
294	Symerton silt loam	92	28	30	59	3.3	165	136	44	59	83	5.4	270			90	135	45	B	294
295	Mokena silt loam	78	24	25	51	2.9	145	126	41	55	77	4.7	235	275	1.4	75	125	50	B	295
296	Washtenaw silt loam	85	26	26	53	3.0	150	136	45	45	68	4.5	225	425-575	0	80	130	50	B	296
297	Ringwood silt loam	86	25	29	62	3.3	165	128	44	59	80	5.2	260	375	1.8	80	130	50	B	297
298	Beecher silt loam	69	22	24	44	2.6	130	116	39	51	72	4.5	225	250	1.3	65	115	50	C	298
300	Westland clay loam	91	28	31	61	3.1	155	126	47	54	75	4.8	240			85	130	45	B	300
301	Grantsburg silt loam[e]	49	17	22	0	2.1	105	95	33	46	0	4.1	205	250	1.4	55	105	50	C	301
302	Ambraw clay loam	83	26	26	55	2.9	145	132	43	52	70	4.6	230	425-575	0	80	130	50	B	302
304	Landes fine sandy loam	60	21	23	35	2.2	110	99	34	45	62	3.7	185	375-525	0	60	100	40		304
306	Allison silty clay loam	97	33	35	66	3.9	195	149	48	61	81	5.7	285			95	145	50	A	306
307	Iona silt loam	76	23	25	47	2.9	145	123	37	51	68	5.0	250	350	1.7	70	120	50	C	307
308	Alford silt loam	77	23	27	0	3.2	160	127	38	55	0	5.2	260	400	2.0	75	125	50	B	308
309	Keytesville silt loam[e]	37	12	14	25	1.5	75	66	23	30	42	2.6	130	150	.7	35	65	30		309
310	McHenry silt loam	67	21	24	41	2.5	125	116	37	52	72	4.6	230	325	1.6	65	115	50	C	310
311	Ritchey silt loam[e]	36	14	16	28	1.5	75	70	25	36	48	3.0	150	200	.9	40	75	35		311
312	Edwards muck	63	20	0	0	0	130	98	33	0	0	0	175	0	0	60	95	35		312
314	Joliet silty clay loam	47	18	17	30	1.8	90	83	32	39	54	3.3	165	200	.9	50	90	40		314
315	Channahon silt loam[e]	43	17	18	31	1.7	85	75	29	40	55	3.2	160	225	1.0	45	80	35		315
316	Romeo silt loam	10	8	10	15	.8	40	30	12	13	22	1.0	50	200-300	0	15	30	15		316
317	Millsdale silty clay loam	69	25	23	42	2.5	125	113	41	47	65	4.4	220	275	1.2	70	115	45	C	317
318	Lorenzo loam[e]	67	18	21	40	2.2	110	92	30	44	61	3.6	180	225	1.2	60	90	30		318
320	Frankfort silt loam[e]	53	18	20	31	1.9	95	95	33	45	59	3.7	185	200	1.1	55	95	40		320
321	DuPage silt loam	79	26	24	51	3.0	150	132	40	53	70	5.0	250	475-625	0	75	125	50	B	321
322	Russell silt loam	74	22	25	47	2.8	140	125	41	55	69	4.8	240	350	1.7	70	125	55	B	322
323	Casco silt loam[e]	57	17	20	32	2.0	100	89	28	41	55	3.5	175	175	1.0	55	90	35		323
324	Ripon silt loam	69	22	25	55	3.1	155	106	39	46	72	4.4	220	250	1.1	70	110	40	C	324
325	Dresden silt loam	71	21	24	46	2.8	140	110	36	49	69	4.5	225	300	1.4	65	110	45	C	325
326	Homer silt loam	74	21	23	44	2.6	130	115	37	48	67	4.4	220	275	1.1	70	115	45	C	326
327	Fox silt loam	63	20	22	37	2.3	115	106	33	46	64	4.3	215	275	1.3	60	105	45	C	327
329	Will silty clay loam	89	25	29	57	3.1	155	117	43	53	73	4.7	235			85	120	35	C	329
330	Peotone silty clay loam	80	26	25	50	2.8	140	123	42	43	58	4.2	210	200	0	80	120	40	C	330
331	Haymond silt loam	88	26	31	57	3.3	165	140	45	60	77	5.3	265			85	140	55	B	331
332	Billett sandy loam	56	18	20	35	2.1	105	90	31	41	58	3.7	185	150	1.5	55	90	35		332
333	Wakeland silt loam	83	26	29	54	3.1	155	135	45	57	74	5.2	260	500-650	0	80	135	55	B	333
334	Birds silt loam	77	24	26	46	2.5	125	122	42	52	72	4.4	220	450-600	0	75	125	50	B	334
335	Robbs silt loam	54	17	20	0	2.0	100	96	33	47	0	4.0	200	200	1.1	55	105	50	C	335
337	Creal silt loam	61	20	22	0	2.3	115	109	35	51	0	4.3	215	250	1.3	60	115	55	C	337
338	Hurst silt loam[e]	52	18	18	28	1.9	95	87	32	45	62	3.6	180	200	1.2	50	90	40		338
339	Wellston silt loam[e]	30	11	11	20	1.4	70	70	23	25	35	2.5	125	175	1.0	30	70	40		339
340	Zanesville silt loam[e]	46	13	15	28	1.7	85	85	29	37	53	3.4	170	225	1.2	45	85	40		340
342	Matherton silt loam	80	22	28	46	2.9	145	118	40	52	73	4.6	230	275	1.3	75	120	45	C	342
343	Kane silt loam	87	24	30	59	3.1	155	122	43	55	76	4.8	240	300	1.4	80	125	45	B	343
344	Harvard silt loam	83	25	29	53	3.2	160	132	41	54	78	5.2	260	325	1.7	80	130	50	B	344
346	Dowagiac silt loam	70	21	23	39	2.4	120	102	35	45	63	4.2	210	250	1.6	65	105	40	C	346
347	Canisteo silt loam	87	25	28	61	3.3	165	132	44	53	77	5.3	265	225	0	80	130	50	B	347
348	Wingate silt loam	80	25	29	52	3.1	155	133	42	56	79	5.1	255	375	1.8	80	130	50	B	348
353	Toronto silt loam	85	28	31	55	3.3	165	141	44	59	80	5.4	270			85	135	50	B	353
354	Hononegah loamy coarse sand	46	14	16	29	1.7	85	78	25	34	51	3.1	155	75	1.1	45	75	30		354
361	Kidder silt loam	63	19	20	36	2.3	115	101	35	45	67	4.1	205	275	1.3	60	105	45	C	361
363	Griswold loam	78	22	25	48	2.9	145	112	41	56	76	4.8	240	325	1.5	70	120	50	C	363
365	Aptakisic silt loam	76	23	24	50	2.9	145	115	39	51	70	4.8	240	275	1.3	70	115	45	C	365
369	Waupecon silt loam	103	33	34	65	3.5	175	149	50	62	81	5.3	265			100	150	50	A	369
370	Saylesville silt loam	66	23	25	44	2.5	125	107	35	46	66	4.3	215	300	1.5	65	105	40	C	370
375	Rutland silt loam	92	29	30	63	3.4	170	132	45	59	84	5.3	265			90	135	45	B	375
379	Dakota silt loam	75	22	25	42	2.6	130	107	36	51	67	4.5	225	275	1.7	70	110	40	C	379
380	Fieldon loam	48	18	20	55	2.8	140	80	28	37	72	3.9	195	175	1.5	50	85	35		380
382	Belknap silt loam	67	24	24	36	2.5	125	124	39	54	66	4.6	230	400-500	0	70	120	50	C	382
386	Downs silt loam	92	31	33	64	3.6	180	148	43	59	83	5.6	280			90	140	50	B	386
387	Ockley silt loam	84	28	29	51	3.0	150	126	42	51	75	5.0	250			85	125	40	B	387
388	Wenona silt loam	86	26	29	61	3.3	165	124	42	55	79	5.1	255	325	1.7	80	125	45	B	388
389	Hesch, thin to sandstone[e]	31	9	10	20	1.1	55	48	17	22	30	1.8	90	100	.8	30	50	20		389
390	Hesch fine sandy loam[e]	61	17	20	39	2.1	105	97	33	43	58	3.6	180	125	1.3	55	100	45		390
393	Marseilles, gray subsoil[e]	49	17	17	32	1.9	95	84	29	39	53	3.3	165	150	.7	50	85	35		393
394	Longlois silt loam	98	30	32	58	3.3	165	132	44	56	77	5.3	265			95	130	35	B	394
397	Boone loamy fine sand[e]	35	10	11	21	1.3	65	50	18	25	37	2.5	125	100	1.1	35	50	15		397

(Footnotes on page 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a]												Timber yield per acre[b]		Productivity indexes Grain crops			Prime agr. land class[d]	Soil type No.
		Basic level of management						High level of management												
		Corn	Soy-beans	Wheat	Oats	Mixed hay	Mixed past.[c]	Corn	Soy-beans	Wheat	Oats	Mixed hay	Mixed past.[c]	Deciduous	Conifer	Basic mgt.	High mgt.	Difference		
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
398	Wea silt loam	101	31	33	65	3.4	170	144	47	61	80	5.5	275			95	140	45	B	398
400	Calco silty clay loam	84	28	28	52	2.9	145	132	44	52	72	4.7	235			85	130	45	B	400
402	Colo silty clay loam	98	32	31	57	2.8	140	149	48	53	74	5.3	265			95	145	50	A	402
404	Titus silty clay	78	26	26	46	2.8	140	125	42	52	68	4.3	215	400-500	0	75	125	50	B	404
410	Woodbine silt loam	57	20	22	34	2.2	110	102	35	45	60	3.9	195	300	1.3	60	105	45	C	410
411	Ashdale silt loam	82	24	26	57	3.2	160	116	39	53	74	5.0	250	375	1.6	75	115	40	C	411
412	Ogle silt loam	90	28	32	64	3.4	170	140	44	58	79	5.3	265			85	135	50	B	412
413	Gale silt loam	52	17	18	30	1.9	95	85	28	31	55	3.3	165	225	1.1	50	85	35		413
414	Myrtle silt loam	83	24	25	55	3.1	155	125	41	53	74	4.9	245	395	1.9	80	125	45	B	414
415	Orion silt loam	82	28	28	52	3.0	150	135	43	52	72	4.7	235	425-575	0	80	130	50	B	415
416	Durand silt loam	80	26	29	57	3.1	155	130	43	56	77	5.2	260	400	1.9	80	130	50	B	416
417	Derinda silt loam[e]	47	14	17	28	1.6	80	81	28	35	50	3.2	160	175	.9	45	80	35		417
418	Schapville silt loam[e]	54	18	19	33	2.1	105	88	33	39	55	3.6	180	225	1.1	55	90	35		418
419	Flagg silt loam	79	23	27	51	3.1	155	121	39	52	72	4.8	240	375	1.8	75	120	45	C	419
420	Piopolis silty clay loam	66	23	24	36	2.2	110	115	39	45	59	4.0	200	350-500	0	65	115	50	C	420
422	Cape silty clay loam	57	21	22	31	1.9	95	108	36	43	54	3.4	170	325-475	0	60	105	45	C	422
424	Shoals silt loam	97	32	34	62	3.7	185	145	46	61	77	5.0	250			95	140	45	B	424
425	Muskingum stony silt loam[e]	21	9	10	15	.9	45	34	13	15	27	1.7	85	125	.8	25	35	10		425
426	Karnak silty clay	55	21	20	28	1.8	90	99	33	40	52	3.2	160	325-425	0	55	100	45		426
427	Burnside silt loam	54	19	21	31	2.0	100	103	35	45	54	3.7	185	325-475	0	55	105	50	C	427
428	Coffeen silt loam	94	30	33	58	3.6	180	152	47	57	79	5.8	290			90	145	55	A	428
429	Palsgrove silt loam	66	22	24	43	2.6	130	108	36	47	63	4.5	225	325	1.4	65	110	45	C	429
430	Raddle silt loam	92	29	32	57	3.5	175	149	45	59	83	5.8	290			90	145	55	A	430
431	Genesee silt loam	86	24	28	53	3.2	160	137	44	57	73	5.1	255	500-600	0	80	135	55	B	431
435	Streator silty clay loam	90	29	28	57	3.1	155	129	45	54	77	4.8	240			85	130	45	B	435
440	Jasper silt loam	90	28	32	64	3.3	165	138	42	57	88	5.3	265			85	135	50	B	440
442	Mundelein silt loam	92	32	36	64	3.7	185	141	44	57	87	5.5	275			95	135	40	B	442
443	Barrington silt loam	86	29	32	61	3.3	165	130	42	55	85	5.4	270			85	130	45	B	443
448	Mona silt loam	69	21	23	43	2.5	125	115	37	51	74	4.5	225	300	1.5	65	115	50	C	448
451	Lawson silt loam	101	34	35	66	3.9	195	161	48	62	86	5.7	285			100	155	55	A	451
452	Riley silty clay loam	84	26	30	52	3.1	155	122	41	55	75	4.7	235	425-575	0	80	125	45	B	452
453	Muren silt loam	79	23	26	0	3.2	160	129	39	54	0	5.2	260	400	2.0	75	130	55	B	453
454	Iva silt loam	86	26	29	0	3.2	160	137	40	55	0	5.2	260	350	1.7	80	135	55	B	454
456	Ware silt loam	83	24	28	53	3.0	150	115	39	52	72	4.6	230	450-600	0	80	115	35	C	456
457	Booker silty clay	48	18	16	28	1.5	75	78	28	34	45	2.9	145	350-450	0	50	80	30		457
460	Ginat silt loam	64	21	21	33	2.1	105	106	35	45	62	3.9	195	225	1.2	60	105	45	C	460
461	Weinbach silt loam	70	21	24	40	2.5	125	113	39	53	70	4.5	225	275	1.4	65	115	50	C	461
462	Sciotoville silt loam	68	20	23	37	2.4	120	108	35	47	64	4.3	215	325	1.6	65	105	40	C	462
463	Wheeling silt loam	61	19	22	35	2.3	115	103	34	45	59	4.1	205	350	1.8	60	105	45	C	463
465	Montgomery silty clay	72	23	22	35	2.4	120	115	39	47	64	4.2	210	225	1.0	70	115	45	C	465
467	Markland silt loam[e]	53	15	20	29	2.0	100	91	33	46	65	3.6	180	200	1.3	50	95	45		467
469	Emma silty clay loam	70	24	24	39	2.5	125	115	35	45	58	4.2	210	275	1.3	70	110	40	C	469
470	Keller silt loam[e]	66	22	24	43	2.5	125	94	33	44	59	4.0	200	200	1.2	65	95	30		470
471	Bodine cherty silt loam[e]	20	9	10	15	1.0	50	34	13	16	26	2.0	100	150	.9	25	35	10		471
471	Clarksville cherty silt loam[e]	20	9	10	15	1.0	50	34	13	16	26	2.0	100	150	.9	25	35	10		471
472	Baylis silt loam	53	21	22	33	2.1	105	92	31	40	59	3.5	175	250	1.3	55	95	40		472
474	Piasa silt loam	52	17	18	25	1.9	95	77	28	37	48	3.1	155	125	.6	50	80	30		474
475	Elsah cherty silt loam	66	22	23	41	2.6	130	113	39	52	69	4.6	230	425-575	0	65	115	50	C	475
481	Raub silt loam	100	32	35	66	3.9	195	155	51	63	92	6.1	305			100	155	55	A	481
482	Uniontown silt loam	75	22	24	47	2.9	145	120	35	49	64	4.8	240	325	1.5	70	115	45	C	482
484	Harco silt loam	99	33	37	64	3.7	185	154	47	62	87	5.6	280			100	150	50	A	484
490	Odell silt loam	97	31	33	61	3.6	180	143	48	61	87	5.6	280			95	145	50	A	490
493	Bonfield loam	78	25	25	53	2.9	145	117	41	52	72	4.5	225	325	1.4	75	120	45	C	493
494	Kankakee fine sandy loam	80	26	29	57	3.1	155	112	40	52	70	4.6	230	350	1.5	80	115	35	C	494
495	Corwin silt loam	90	25	28	55	3.2	160	132	44	59	83	5.3	265			85	135	50	B	495
496	Fincastle silt loam	80	24	28	50	3.0	150	131	41	55	73	5.0	250	300	1.4	75	130	55	B	496
497	Mellott silt loam	82	24	26	53	3.2	160	133	44	57	76	5.2	260	375	1.8	75	130	55	B	497
501	Morocco fine sand	55	17	18	33	2.0	100	90	29	41	61	3.5	175	100	1.2	55	90	35		501
503	Rockton loam	71	21	23	48	2.9	145	109	31	51	77	4.4	220	225	1.1	65	105	40	C	503
504	Sogn silt loam[e]	26	11	10	16	1.1	55	49	16	20	30	2.1	105	100	.5	30	50	20		504
505	Dunbarton silt loam[e]	37	12	15	28	1.7	85	72	23	32	58	3.2	160	200	1.0	35	70	35		505
506	Hitt silt loam	70	24	26	45	2.8	140	108	40	47	65	4.5	225	350	1.5	70	110	40	C	506
508	Selma loam, bedrock substratum	85	28	28	53	3.1	155	126	44	52	72	4.8	240			85	125	40	B	508
509	Whalan loam	56	18	21	34	2.1	105	98	28	40	72	4.2	210	200	1.0	55	95	40		509
511	Dunbarton cherty silt loam[e]	35	10	11	20	1.3	65	55	21	26	30	2.5	125	150	.9	30	60	30		511

(Footnotes on page 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a] — Basic level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	High level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Timber yield per acre[b]: Deciduous	Conifer	Productivity indexes Grain crops: Basic mgt.	High mgt.	Difference	Prime agr. land class[d]	Soil type No.
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
513	Granby loamy fine sand	57	21	24	33	2.0	100	92	30	38	57	3.3	165	125	0	60	90	30		513
516	Faxon clay loam	66	21	23	39	2.6	130	112	37	40	69	3.8	190	300	1.3	65	110	45	C	516
524	Zipp silty clay loam	69	23	18	33	2.6	130	115	39	41	61	4.4	220	180	1.2	65	115	50	C	524
531	Markham silt loam	66	21	23	39	2.4	120	112	37	49	69	4.4	220	300	1.4	65	110	45	C	531
537	Hesch, gray subsoil[e]	80	25	29	50	2.8	140	117	39	46	66	4.4	220	100	.8	75	115	40	C	537
546	Keltner silt loam	66	21	23	43	2.5	125	110	36	48	74	4.5	225	325	1.4	65	110	45	C	546
547	Eleroy silt loam	55	19	21	36	2.2	110	101	35	45	67	4.3	215	275	1.2	55	105	50	C	547
549	Marseilles silt loam[e]	63	20	22	39	2.3	115	105	36	46	65	4.4	220	175	.9	60	105	45	C	549
551	Gosport silt loam[e]	30	12	13	22	1.4	70	63	19	22	37	2.5	125	100	.6	30	60	30		551
554	Kernan silt loam	66	21	22	43	2.4	120	108	37	51	68	4.3	215	275	1.4	65	110	45	C	554
555	Shadeland loam	63	19	21	36	2.3	115	101	35	50	75	3.9	195	150	.7	60	105	45	C	555
556	High Gap loam[e]	56	18	21	34	2.1	105	95	33	46	66	3.3	165	125	.8	55	100	45		556
560	St. Clair silt loam[e]	41	14	17	26	1.7	85	78	31	41	53	3.4	170	225	1.2	40	85	45		560
561	New Glarus silt loam	52	17	21	33	2.2	110	82	32	43	58	3.6	180	250	1.1	50	90	40		561
562	Port Byron, sandy substratum	78	25	28	52	3.0	150	124	42	52	73	4.8	240	275	1.8	75	125	50	B	562
563	Seaton, sandy substratum	55	17	21	33	2.2	110	101	31	43	61	4.1	205	250	1.6	55	100	45		563
564	Waukegan silt loam	72	22	25	42	2.6	130	108	38	47	65	4.2	210	325	1.6	70	110	40	C	564
565	Tell silt loam	66	21	22	40	2.3	115	102	35	45	60	4.0	200	300	1.5	65	105	40	C	565
567	Elkhart silt loam	79	22	25	47	2.9	145	132	39	53	73	5.1	255	350	1.7	75	125	50	B	567
568	Niota, thin A	40	14	15	26	1.5	75	74	25	34	47	2.9	145	150	.9	40	75	35		568
570	Martinsville silt loam	71	22	23	45	2.9	145	121	37	51	66	4.8	240	300	1.6	70	115	45	C	570
572	Loran silt loam	69	25	26	44	2.8	140	120	39	49	68	4.7	235	300	1.3	70	120	50	C	572
574	Ogle, silt loam substratum	69	20	22	50	2.6	130	103	35	48	66	4.1	205	275	1.4	65	105	40	C	574
576	Zwingle silt loam	54	18	17	31	1.9	95	92	33	41	58	3.7	185	200	1.2	55	95	40		576
578	Dorchester, cobbly subsoil	72	21	23	47	2.4	120	124	40	49	70	4.6	230	400-500	0	70	120	50	C	578
581	Tamalco silt loam[e]	47	15	17	0	1.8	90	70	24	34	0	2.9	145	150	.7	45	75	30		581
583	Pike silt loam	68	21	24	0	2.6	130	116	37	54	0	5.0	250	350	1.7	65	120	55	C	583
584	Walshville loam[e]	37	12	14	0	1.3	65	60	21	29	0	2.4	120	75	.4	35	65	30		584
585	Negley loam	51	18	18	0	1.9	95	96	33	47	0	3.6	180	225	1.3	50	105	55	C	585
587	Terril loam	89	30	32	61	3.4	170	141	44	59	79	5.4	270			90	135	45	B	587
589	Bowdre silty clay	76	23	24	50	2.8	140	110	36	48	68	4.2	210	400-550	0	70	110	40	C	589
590	Cairo silty clay	79	26	24	51	2.9	145	115	37	48	67	4.3	215	375-525	0	75	115	40	C	590
594	Reddick silty clay loam	97	30	29	58	3.3	165	141	48	56	81	5.3	265			90	140	50	B	594
597	Armiesburg silty clay loam	97	30	32	63	3.6	180	147	46	60	75	5.5	275			95	140	45	B	597
598	Bedford silt loam	40	14	16	26	1.3	65	74	25	34	47	2.5	125	200	1.2	40	75	35		598
599	Baxter cherty silt loam	25	11	10	15	1.0	50	49	16	21	29	2.1	105	175	1.0	30	50	20		599
600	Huntington silt loam	94	31	34	63	3.9	195	147	48	59	81	5.7	285			95	145	50	A	600
603	Blackoar silt loam	92	29	30	59	3.3	165	144	47	55	68	5.0	250			90	140	50	B	603
605	Ursa silt loam[e]	30	12	13	22	1.4	70	63	18	22	37	2.4	120	125	.7	30	60	30		605
606	Goss cherty silt loam	26	10	10	15	1.0	50	48	16	20	30	2.0	100	175	1.0	25	50	25		606
609	Crane silt loam	103	29	33	62	3.7	185	138	46	59	77	5.2	260			95	140	45	B	609
617	Otterbein silt loam	84	25	28	53	3.1	155	135	43	55	80	5.1	255	300	1.4	80	130	50	B	617
619	Parkville silty clay	78	24	24	40	2.8	140	122	42	47	66	5.0	250	450-550	0	75	120	45	C	619
620	Darmstadt silt loam[e]	46	14	17	0	1.7	85	69	26	36	0	3.0	150	125	.6	45	80	35		620
628	Lax silt loam	49	17	20	36	1.4	70	86	26	32	55	3.3	165	225	1.3	50	80	30		628
633	Traer silt loam	76	23	23	46	2.5	125	124	39	49	68	4.5	225	300	1.2	70	120	50	C	633
647	Lawler loam	80	25	28	44	3.3	165	115	39	44	61	5.0	250	300	1.3	75	115	40	C	647
656	Octagon silt loam	77	23	25	46	3.0	150	125	41	53	75	5.0	250	325	1.5	75	125	50	B	656
660	Coatsburg silty clay loam[e]	39	13	16	28	1.5	75	80	25	28	44	3.2	160	150	.9	40	75	35		660
661	Atkinson loam	76	23	25	55	3.0	150	120	39	49	68	4.8	240	350	1.4	75	120	45	C	661
665	Stonelick fine sandy loam	63	19	20	42	2.3	115	94	28	40	61	3.9	195	350-450	0	60	90	30		665
673	Onarga, reddish subsoil	67	19	22	43	2.4	120	101	34	45	64	4.0	200	175	1.5	60	100	40		673
682	Medway silty clay loam	86	26	30	57	3.3	165	132	42	53	72	5.3	265	400-500	0	80	130	50	B	682
683	Lawndale silt loam	102	32	34	66	3.9	195	156	50	62	87	5.8	290			100	155	55	A	683
684	Broadwell silt loam	97	31	32	64	3.7	185	145	44	59	84	5.6	280			95	140	45	B	684
685	Middletown silt loam	69	23	25	45	2.5	125	117	34	53	70	4.7	235	300	1.6	70	110	40	C	685
691	Beasley silt loam	29	11	13	22	1.0	50	63	19	22	37	2.5	125	125	.6	30	60	30		691
696	Zurich silt loam	69	21	23	46	2.8	140	117	37	49	69	4.7	235	300	1.6	65	115	50	C	696
697	Wauconda silt loam	83	28	31	56	3.3	165	129	41	54	80	5.2	260			85	125	40	B	697
698	Grays silt loam	78	24	28	52	3.1	155	124	40	52	77	5.0	250	325	1.7	75	120	45	C	698
706	Boyer sandy loam	53	19	21	31	2.1	105	85	29	36	53	3.5	175	175	1.1	55	85	30		706
723	Reesville silt loam	80	24	26	52	3.1	155	131	40	54	72	5.1	255	300	1.4	75	125	50	B	723
727	Waukee loam	69	22	25	46	2.6	130	103	35	46	66	4.2	210	275	1.3	65	105	40	C	727
728	Winnebago silt loam	75	23	25	51	2.6	130	121	40	51	68	4.8	240	350	1.7	70	120	50	C	728
731	Nasset silt loam	74	23	25	48	2.6	130	112	37	48	67	4.5	225	350	1.5	70	110	40	C	731

(Footnotes on page 16)

Table 2. — continued

Soil type No.	Name	Estimated crop yields per acre[a] — Basic level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	High level of management: Corn	Soybeans	Wheat	Oats	Mixed hay	Mixed past.[c]	Timber yield per acre[b]: Deciduous	Conifer	Productivity indexes Grain crops: Basic mgt.	High mgt.	Difference	Prime agr. land class[d]	Soil type No.
		bu.	bu.	bu.	bu.	tons	days	bu.	bu.	bu.	bu.	tons	days	bd. ft.	cords					
740	Darroch silt loam	98	32	34	64	3.7	185	152	46	60	83	4.7	235			95	145	50	A	740
741	Oakville fine sand	43	15	14	26	1.5	75	62	23	32	48	2.9	145	100	1.2	45	65	20		741
742	Dickinson, loamy substratum	71	21	24	50	2.6	130	109	36	49	69	4.4	220	200	1.7	65	110	45	C	742
743	Ridott silt loam	68	24	25	43	2.5	125	110	37	47	61	4.5	225	275	1.2	70	110	40	C	743
745	Shullsburg silt loam[e]	66	20	23	37	2.4	120	110	40	47	65	4.1	205	200	1.0	65	115	50	C	745
746	Calamine silt loam	64	21	22	35	2.3	115	109	40	46	64	4.1	205	200	.9	60	115	55	C	746
752	Oneco silt loam	66	22	24	40	2.5	125	105	37	46	63	4.3	215	325	1.4	65	105	40	C	752
753	Massbach silt loam	60	20	22	40	2.4	120	106	35	46	70	4.4	220	300	1.3	60	105	45	C	753
761	Eleva sandy loam[e]	40	11	14	21	1.2	60	66	20	23	37	2.4	120	175	.9	35	65	30		761
763	Joslin silt loam	83	28	31	56	3.3	165	135	43	55	80	5.1	255			85	130	45	B	763
764	Coyne fine sandy loam	63	18	20	43	2.3	115	101	35	47	67	3.8	190	200	1.3	60	105	45	C	764
765	Trempealeau silt loam	62	19	21	44	2.6	130	103	35	46	66	4.2	210	225	1.3	60	105	45	C	765
768	Backbone loamy sand	48	15	20	29	1.9	95	75	28	38	50	3.1	155	150	1.1	45	80	35		768
769	Edmund silt loam[e]	57	19	25	39	2.3	115	86	32	44	55	3.7	185	225	1.2	55	90	35		769
771	Hayfield loam	69	22	25	39	3.1	155	103	35	41	60	4.7	235	275	1.2	65	105	40	C	771
772	Marshan loam	84	25	26	43	2.5	125	109	39	41	63	4.4	220	250	1.1	80	110	30	C	772
774	Saude loam	61	18	18	39	2.6	130	103	35	46	66	4.2	210	225	1.1	55	105	50	C	774
776	Comfrey clay loam	92	30	30	55	3.1	155	140	46	51	66	5.0	250			90	135	45	B	776
777	Adrian muck	63	20	0	0	0	130	98	33	0	0	0	175	0	0	60	95	35		777
779	Chelsea fine sand	44	11	13	24	1.4	70	66	23	34	46	2.5	125	150	1.3	40	70	30		779
780	Grellton sandy loam	64	20	23	39	2.5	125	103	34	46	66	4.4	220	250	1.4	60	105	45	C	780
781	Friesland sandy loam	80	23	26	59	3.1	155	120	39	49	68	4.8	240	275	1.5	75	120	45	C	781
782	Juneau silt loam	86	26	29	63	3.5	175	137	40	54	79	5.5	275	425-550	0	80	130	50	B	782
783	Flagler sandy loam	55	18	21	35	2.1	105	87	31	39	55	3.5	175	250	1.2	55	90	35		783
786	Frondorf loam[e]	46	12	16	0	1.7	85	69	23	30	0	3.1	155	225	1.1	40	70	30		786
787	Banlic silt loam	62	21	21	31	2.2	110	115	37	46	62	4.2	210	425-550	0	60	115	55	C	787
791	Rush silt loam	92	30	32	61	3.5	175	132	42	57	77	5.5	275			90	130	40	B	791
792	Bowes silt loam	98	31	33	63	3.1	155	141	46	60	79	5.3	265			95	140	45	B	792
903	Muskego muck	84	26	0	0	0	150	126	39	0	0	0	215	0	0	80	120	40	C	903
940	Westmore silt loam	52	20	21	32	2.0	100	90	29	38	57	3.4	170	200	1.2	55	90	35		940
955	Berks loam[e]	21	9	10	15	.9	45	34	13	15	27	1.7	85	100	1.1	25	35	10		955
956	Brandon silt loam	52	17	18	0	2.0	100	80	31	37	0	3.9	195	250	1.2	50	85	35		956
956	Saffel gravelly silt loam[e]	34	13	16	0	1.2	60	57	22	32	0	1.9	95	200	1.1	35	60	25		956
961	Burkhardt sandy loam	51	13	16	29	1.8	90	78	25	34	50	3.1	155	75	1.0	45	75	30		961
977	Neotoma stony silt loam	20	9	10	15	.7	35	34	13	15	26	1.4	70	125	1.1	25	35	10		977

Footnotes:

a Wheat, oats, hay, and timber yields are not given (indicated by zero) for some soils where these crops are not well adapted.

b Timber yield is given as annual timber growth per acre. It is not given for soils with a basic management grain crop productivity index of 85 or greater.

c Number of days that one acre of mixed pasture will carry one cow.

d Prime agricultural land classes have high level management grain crop productivity indexes of 145-160 for Class A, 125-140 for Class B, and 105-120 for Class C.

e Soils with unfavorable subsoils or other shallow layers that have maximum reduction in productivity for increasing slope and erosion.

ALPHABETICAL INDEX AND SLOPE RANGE OF SOIL TYPES IN ILLINOIS*

98 - Ade loamy fine sand, 1-7
777 - Adrian muck, 0-2
308 - Alford silt loam, 1-40
306 - Allison silty clay loam, 1-3
131 - Alvin fine sandy loam, 1-30
302 - Ambraw clay loam, 0-2
293 - Andres silt loam, 0-5
365 - Aptakisic silt loam, 0-5
78 - Arenzville silt loam, 0-3
227 - Argyle silt loam, 2-18
597 - Armiesburg silty clay loam, 0-2
411 - Ashdale silt loam, 2-20

232 - Ashkum silty clay loam, 0-3
259 - Assumption silt loam, 2-18
661 - Atkinson loam, 2-20
7 - Atlas silt loam, 4-18
61 - Atterberry silt loam, 0-5
14 - Ava silt loam, 1-18
204 - Ayr sandy loam, 1-10
768 - Backbone loamy sand, 2-18
787 - Banlic silt loam, 0-2
443 - Barrington silt loam, 0-5
105 - Batavia silt loam, 0-12
599 - Baxter cherty silt loam, 2-30

472 - Baylis silt loam, 8-30
188 - Beardstown loam, 0-5
691 - Beasley silt loam, 2-20
70 - Beaucoup silty clay loam, 0-2
598 - Bedford silt loam, 1-7
298 - Beecher silt loam, 0-6
382 - Belknap silt loam, 0-5
955 - Berks loam, 3-45
332 - Billett sandy loam, 0-20
334 - Birds silt loam, 0-2
233 - Birkbeck silt loam, 0-12
603 - Blackoar silt loam, 0-5

5 - Blair silt loam, 4-25
53 - Bloomfield fine sand, 1-20
23 - Blount silt loam, 0-6
13 - Bluford silt loam, 0-7
471 - Bodine cherty silt loam, 4-60
35 - Bold silt loam, 5-35
493 - Bonfield loam, 0-5
108 - Bonnie silt loam, 0-2
457 - Booker silty clay, 0-2
397 - Boone loamy fine sand, 2-40
589 - Bowdre silty clay, 0-8
792 - Bowes silt loam, 0-10

706 - Boyer sandy loam, 0-40
956 - Brandon silt loam, 2-30
149 - Brenton silt loam, 0-3
684 - Broadwell silt loam, 0-12
136 - Brooklyn silt loam, 0-1
235 - Bryce silty clay, 0-3
961 - Burkhardt sandy loam, 0-30
427 - Burnside silt loam, 0-4
590 - Cairo silty clay, 1-5
746 - Calamine silt loam, 0-12
400 - Calco silty clay loam, 0-2
134 - Camden silt loam, 0-30

347 - Canisteo silt loam, 0-2
422 - Cape silty clay loam, 0-2
286 - Carmi sandy loam, 0-12
323 - Casco silt loam, 0-45
171 - Catlin silt loam, 0-12
315 - Channahon silt loam, 1-25
241 - Chatsworth silt loam, 4-50
287 - Chauncey silt loam, 0-3
779 - Chelsea fine sand, 0-20
282 - Chute fine sand, 5-40
2 - Cisne silt loam, 0-3
147 - Clarence silty clay loam, 1-12

257 - Clarksdale silt loam, 0-5
471 - Clarksville (or Bodine) cherty silt loam, 2-60
18 - Clinton silt loam, 2-18
660 - Coatsburg silt loam, 5-20
428 - Coffeen silt loam, 0-4
402 - Colo silty clay loam, 0-2
122 - Colp silt loam, 1-18
776 - Comfrey clay loam, 0-2
495 - Corwin silt loam, 0-10
112 - Cowden silt loam, 0-3
764 - Coyne fine sandy loam, 0-12

609 - Crane silt loam, 0-3
337 - Creal silt loam, 0-7
379 - Dakota silt loam, 0-18
56 - Dana silt loam, 0-6
620 - Darmstadt silt loam, 1-10
740 - Darroch silt loam, 0-3
71 - Darwin silty clay, 0-2
192 - Del Rey silt loam, 0-5
45 - Denny silt loam, 0-2
262 - Denrock silt loam, 0-2
417 - Derinda silt loam, 4-12
742 - Dickinson, loamy substratum, 1-12

* The soil type number precedes the soil type name; the slope range in percent follows the soil name. For a numerical listing of soil types in Illinois, see Table 2, pages 10-16.

* The soil type number precedes the soil type name; the slope range in percent follows the soil name. For a numerical listing of soil types in Illinois, see Table 2, pages 10-16.

ALPHABETICAL INDEX* — continued

763 - Joslin silt loam, 0-6
275 - Joy silt loam, 0-5
28 - Jules silt loam, 0-2
782 - Juneau silt loam, 0-6
343 - Kane silt loam, 0-3
494 - Kankakee fine sandy loam, 0-12
426 - Karnak silty clay, 0-1
470 - Keller silt loam, 2-12
546 - Keltner silt loam, 2-15
242 - Kendall silt loam, 1-7
17 - Keomah silt loam, 1-5
554 - Kernan silt loam, 1-5

309 - Keytesville silt loam, 2-7
361 - Kidder silt loam, 0-35
191 - Knight silt loam, 0-2
102 - La Hogue loam, 0-5
175 - Lamont fine sandy loam, 3-25
304 - Landes fine sandy loam, 1-15
60 - La Rose silt loam, 5-30
647 - Lawler loam, 0-5
683 - Lawndale silt loam, 0-3
451 - Lawson silt loam, 0-3
628 - Lax silt loam, 2-12
210 - Lena muck, 0-2

59 - Lisbon silt loam, 0-3
81 - Littleton silt loam, 0-4
265 - Lomax loam, 0-5
394 - Longlois silt loam, 1-6
572 - Loran silt loam, 1-10
318 - Lorenzo loam, 1-12
167 - Lukin silt loam, 1-4
176 - Marissa silt loam, 0-3
531 - Markham silt loam, 1-18
467 - Markland silt loam, 1-35
549 - Marseilles silt loam, 1-15

393 - Marseilles silt loam, gray subsoil variant, 0-4
772 - Marshan loam, 0-2
570 - Martinsville silt loam, 1-18
189 - Martinton silt loam, 0-5
753 - Massbach silt loam, 1-15
342 - Matherton silt loam, 0-6
89 - Maumee fine sandy loam, 0-1
248 - McFain silty clay, 0-1
173 - McGary silt loam, 0-6
310 - McHenry silt loam, 0-12
682 - Medway silty clay loam, 0-3

497 - Mellott silt loam, 0-12
205 - Metea sandy loam, 0-15
27 - Miami silt loam, 0-25
685 - Middletown silt loam, 2-12
69 - Milford silty clay loam, 0-2
219 - Millbrook silt loam, 1-5
82 - Millington loam, 0-2
317 - Millsdale silty clay loam, 0-2
187 - Milroy sandy loam, 0-2
295 - Mokena silt loam, 0-5
448 - Mona silt loam, 0-10
229 - Monee silt loam, 0-2

465 - Montgomery silty clay, 0-1
57 - Montmorenci silt loam, 0-5
194 - Morley silt loam, 1-35
501 - Morocco fine sand, 0-2
268 - Mt. Carroll silt loam, 1-20
442 - Mundelein silt loam, 0-5
453 - Muren silt loam, 1-6
41 - Muscatine silt loam, 0-3
903 - Muskego muck, 0-2
425 - Muskingum stony silt loam, 5-70
414 - Myrtle silt loam, 2-18
228 - Nappanee silt loam, 0-4

731 - Nasset silt loam, 5-20
585 - Negley loam, 6-35
977 - Neotoma stony silt loam, 6-35
218 - Newberry silt loam, 0-3
561 - NewGlarus silt loam, 1-30
261 - Niota silt loam, 0-3
568 - Niota silty clay loam, clayey subsurface variant, 0-4
741 - Oakville fine sand, 0-50
387 - Ockley silt loam, 1-18
113 - Oconee silt loam, 1-7
656 - Octagon silt loam, 0-12

490 - Odell silt loam, 0-6
412 - Ogle silt loam, 2-18
574 - Ogle silt loam, silt loam substratum variant, 2-7
84 - Okaw silt loam, 0-5
289 - Omaha loam, 0-2
673 - Onarga fine sandy loam, reddish subsoil variant, 0-4
150 - Onarga sandy loam, 0-10
752 - Oneco silt loam, 1-12
200 - Orio sandy loam, 0-2
415 - Orion silt loam, 0-2

* The soil type number precedes the soil type name; the slope range in percent follows the soil name. For a numerical listing of soil types in Illinois, see Table 2, pages 10-16.

* The soil type number precedes the soil type name; the slope range in percent follows the soil name. For a numerical listing of soil types in Illinois, see Table 2, pages 10-16.

* The soil type number precedes the soil type name; the slope range in percent follows the soil name. For a numerical listing of soil types in Illinois, see Table 2, pages 10-16.