

Nonirrigated Yields by Map Unit

Madison County, Tennessee

Map symbol and soil name	Land capability	Cotton lint	Corn	Soybeans	Wheat	
		<i>Lbs</i>	<i>Bu</i>	<i>Bu</i>	<i>Bu</i>	
Ar:		800	85	35	50	
Arents	2e					
Urban land	8s					
Ca:		400	---	25	30	
Calhoun	3w					
Henry	3w					
Co:		700	90	38	35	
Calloway	2e					
Cs:		800	110	40	40	
Collins	2w					
DuB:		600	75	35	40	
Dulac	2e					
DuB3:		575	70	30	---	
Dulac	3e					
DuC3:		500	60	20	---	
Dulac	4e					
DuD3:		---	---	---	---	
Dulac	6e					
EuE:		---	---	---	---	
Eustis	7s					
Fa:		750	100	40	35	
Falaya	2w					
GrA:		700	85	38	---	
Grenada	2e					
GrB:		550	65	30	---	
Grenada	2e					
GrB3:		---	---	20	---	
Grenada	3e					
GrC3:		---	---	---	---	
Grenada	4e					
Iu:		750	110	40	---	
Iuka	2w					

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LeB: Lexington	2e	650	85	35	45	
LeB3: Lexington	3e	550	75	30	35	
LeC: Lexington	3e	600	75	30	40	
LeC3: Lexington	4e	400	60	25	30	
LeD: Lexington	4e	500	65	25	35	
LeD3: Lexington	6e	---	---	---	---	
LeE: Lexington	6e	---	---	---	---	
LgC: Lexington Urban land	3e ---	650	80	30	40	
LmE3: Lexington Smithdale	6e 7e	---	---	---	---	
LoB: Loring	2e	700	90	35	45	
LoB3: Loring	3e	600	75	25	37	
LoC3: Loring	4e	500	65	20	32	
Ma: Mantachie	2w	650	90	35	40	
MeA: Memphis	1	850	105	45	45	
MeB: Memphis	2e	800	95	40	45	

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MeB2: Memphis	2e	750	90	35	35	
MeC3: Memphis	4e	550	60	20	20	
Oc: Ochlockonee	2w	---	110	40	40	
PrB: Providence	2e	700	80	35	---	
PrC3: Providence	4e	400	45	20	---	
PrD3: Providence	6e	---	---	---	---	
SmE: Smithdale	6e	---	---	---	---	
SmF: Smithdale	7e	---	---	---	---	
SwD: Sweatman	6e	---	---	---	---	
SwE: Sweatman	7e	---	---	---	---	
Vk: Vicksburg	2w	750	115	40	40	
Wa: Waverly	5w	---	---	---	---	
Wf: Waverly	5w	---	---	---	---	

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The average yields per acre that can be expected of the principal crops under a high level of management are shown in this table. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

If yields of irrigated crops are given, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

The land capability classification of map units in the survey area is shown in this table. This classification shows, in a general way, the suitability of soils for most kinds of field crops (United States Department of Agriculture, Soil Conservation Service, 1961). Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels--capability class, subclass, and unit.

"Capability classes," the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

"Capability subclasses" are soil groups within one class. They are designated by adding a small letter, "e," "w," "s," or "c," to the class numeral, for example, 2e. The letter "e" shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; "w" shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); "s" shows that the soil is limited mainly because it is shallow, droughty, or stony; and "c," used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by "w," "s," or "c" because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

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"Capability units" are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

Reference:

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.