A. E. - 856

MAKING AND USING

A

FARM MAP

by

C. D. Kearl

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture
Cornell University, Ithaca, New York

May, 1953

MAKING and USING

A

FARM MAP

A farm map can be the farmer's most valuable tool. It can help him plan his farm layout, his crop rotations and feed production, his work, and his fertilizer practices. He can use it to observe the results of his farming if he records on the map a few important bits of information. Experience in making and using maps in connection with Farm Cost Accounts has been used in preparing the following instructions for a farm map record.

HOW TO MAKE A MAP

Perhaps the simplest map a farmer can make is a sketch of the farm showing each of the fields.

More exactness can be obtained from survey or plane table mapping of the farm. These methods are accurate but expensive.

Probably the cheapest way of obtaining a good map is to purchase an aerial photograph on which can be viewed the farm, and make a tracing. Aerial photographs can be bought for most farms in New York State from the:--

Eastern Laboratory
Aerial Photographic and
Engineering Service
Production and Marketing Administration
U.S. Department of Agriculture
Washington 25, D.C.

The photo must be ordered by number on forms which can be obtained from that office.

The local Soil Conservation Service District office (where there is a SCS District) usually has a map of the farm and can supply the photo number. Aerial photos can be obtained in several standard scales but probably the most universally used and most satisfactory is 660' to 1". All examples in this publication are of that scale.

Drawing the Boundaries

Whether for a sketch or surveyed map all outside boundaries for the farm should be in dark solid lines. Permanent field boundaries should be in solid lines but less dark. Divisions in fields which are only temporary and are apt to be changed should be marked in dotted lines.

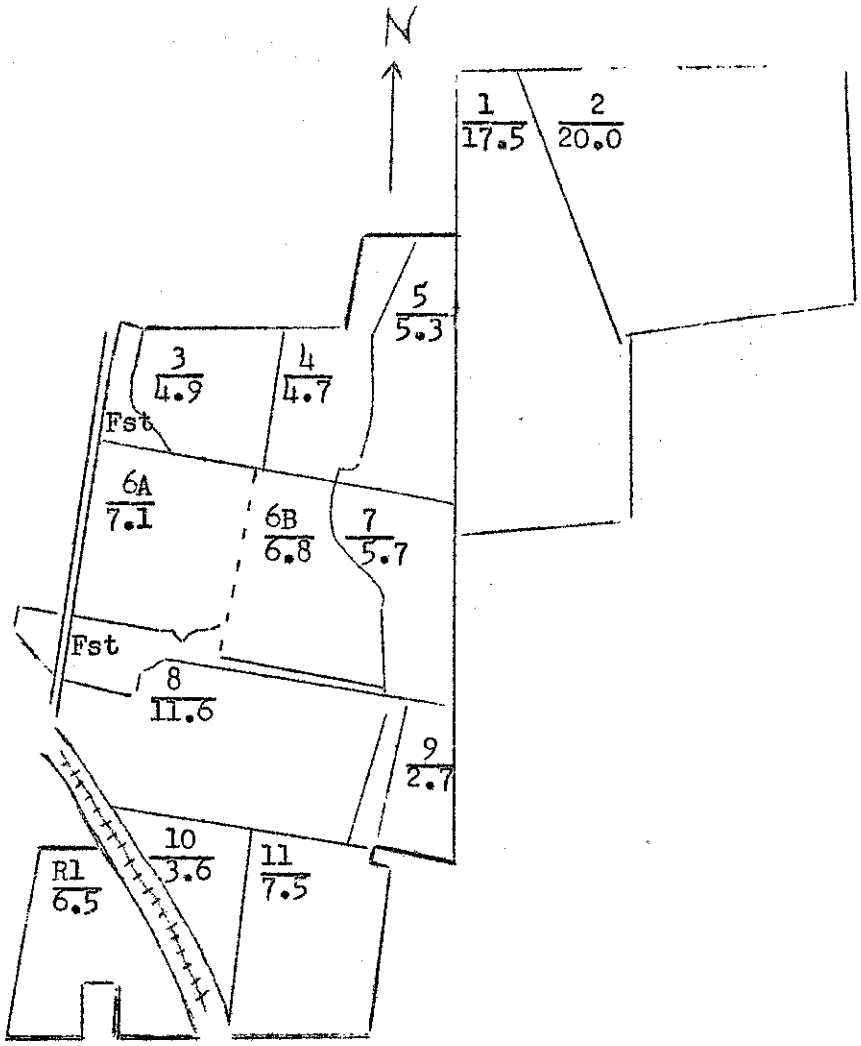
North should be at the top of the page and should be indicated.

Numbering Fields

Either numbers or letters may be used in numbering the fields. Numbers are preferable. If a large field is divided into temporary fields (with dotted field lines), a number should be given to the large field and each of the temporary fields should be numbered using that number and a letter.

In giving field numbers it is best to start at the upper left hand corner and, as far as possible, number the fields from left to right in rows.

The field number should be placed in the upper left hand corner and underlined.



Rented land should be shown on the map but be marked distinctively (as with an "R" before the number).

The Area of the Fields

Most farmers know the approximate acreage of their fields from drill readings, tree plantings (for orchards), or other measurements. If a sketch is used as a farm map these acreage measurements can be used.

From a surveyed or plane table map exact acreages can be calculated. For these or for tracings from aerial photos, acreages can be determined by use of a planimeter if the scale of the map is known. (The scale of 660' to 1" enables the planimeter operator to read the acreages directly from the instrument without determining a conversion factor). If the map is traced or drawn in the scale of 660' to 1" on cross-section paper with 10 lines to the inch on each side, each square on the paper will equal one-tenth acre. The farmer can then count the squares on the map and determine the approximate acreage in the farm and in each field.

Normally acreages should be measured to the nearest acre. When

fields are small or are used intensively, measurements to the nearest tenth of an acreage should be made.

The acreage of each field should be recorded under the line which is under the field number.

Farm Description

A part of the farm map is a description showing the location, ownership and information pertinent to the farm and the making of the map. This should include a list of the fields showing the number, acreage and class for each field. The list should be in table form with columns for recording the crop, fertilizer, and yield. Any other descriptive information which the farmer considers of value may be recorded.

The class of land for the fields on the farm is based on the type of crops grown or use made. Common classifications are:

C - Cropland
V - Vineyard
NBV - Non-bearing vineyard
BO - Bearing orchard
NBO - Non-bearing orchard
W - Woods
F - Farmstead
P - Pond
X - Waste

FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operators Name: John Farmer

Scale: 1" = 660' Photo No.: CDK-1-24

Acreage: 107.8 Date Made: May, 1953

Use of Land											
Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C				8	11.6	C			
2	20.0	C				9	2.7	P			
3	4.9	C				10	3.6	V			
4	4.7	C				11	7.5	C			
5	5.3	C				Farm-stead	3.9				
6A	7.1	C				Total owned	101.3				
6B	6.8	C				R-1	6.5	V			
7	5.7	P				Total Oper.	107.8				

Reproducing the Map

If the farmer has access to a mimeograph or other duplicating machine he need only prepare the necessary stencils to obtain as many copies as he may need of the map.

A drawing on plain white paper or tracing paper can be reproduced by most printing or engineering firms, at relatively low cost. It is wise to contact the firm and obtain their advice as to the method of drawing the map and the materials to use for the most satisfactory results from their particular method of reproduction.

Without any of the above means available a farmer can use carbon paper and make good copies of his map at little more cost than the time required for the job.

If a map of the scale 660' to 1" is reproduced with that scale on cross hatched paper with ten lines to the inch in each direction, each square is equal to one-tenth acre. This will help the farmer to estimate the acreages in fields or in a crop if a field is divided.

The map should be reproduced on a paper of a size that will fit a good loose-leaf notebook and all maps in use should be kept in the notebook. (Reinforcements on the holes will keep the maps from tearing out unless they are cared for badly).

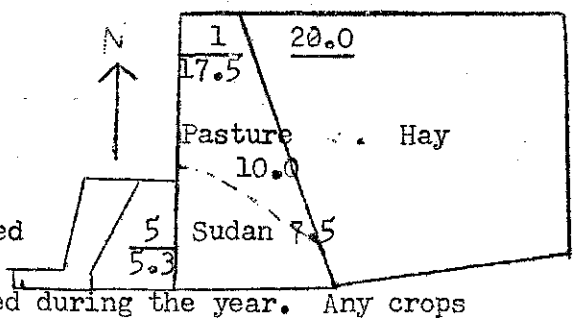
USING THE MAP

One copy of the map should be used to plot the soil types and such fertility information as the Ph of the soil in various parts of each field. Lime applications can be shown on another map. Slope, erosion potential and other information can be shown on still other maps. Although most farmers will find many uses for a map, the principal ones will be for planning the farming operation for the year to come, and for recording the activities during the year.

The Annual Record

There are three things that should be recorded on the annual farm map. These are:

1. The crop
2. The fertilization practices
3. The yields



The crop should be recorded on the map in the field in which it was grown and that which is harvested during the year. Any crops which are started for subsequent years should be shown in parenthesis

after the crop for the current year, ie., wheat (seeded), or oats (wheat). If a field is divided for two crops, each should be shown followed by the acreage. The location of the crop in the field can be shown with dotted lines. Where land is double cropped, the second crop should be listed and circled. In the table for use of land the crop should be again recorded by each field.

Use of Land						
Field	Acres	Class	Use	Fertilizer	Yield	Field
1	17.5	C	Past. 10 Sudan 7.5	17 Manure		8
2	20.0	C	Hay	96 Manure	3LT	9
3	4.9	C	Wheat (seeded)	1300 Phos. 18 Manure	280 bu.	10

In recording the fertilizer practices, the quantities and kind of fertilizer should be shown. The quantity may be the rate of application per acre or the total amount applied on the field. The latter is preferable. Examples of records are 3200# 10-10-10 and/or 14T manure.

The yield should be the total produced on the field, for example, 1006 bushels or 28 Tons.

Other information such as planting and harvesting dates may be written on the map or in the table. Weather, insect damage or other conditions affecting production may be noted.

When to Record on the Maps

A pencil record of the crops which are planned for each field should be entered on the year's map at the time the plans are made. When the crops are actually planted or harvested (as in the case of hay or grass silage) the record can be corrected and entered permanently.

Fertilizer applications should be recorded as soon after the application as possible. Delay may result in omissions. Yields should also be recorded as soon as they are determined.

A pocket notebook carried in the field for making notes while the work is in progress will help a farmer complete his annual map.

What the Record Can Show

As with most records, the farm map record becomes of increasing value if it is kept each year for several years. The maps will give:

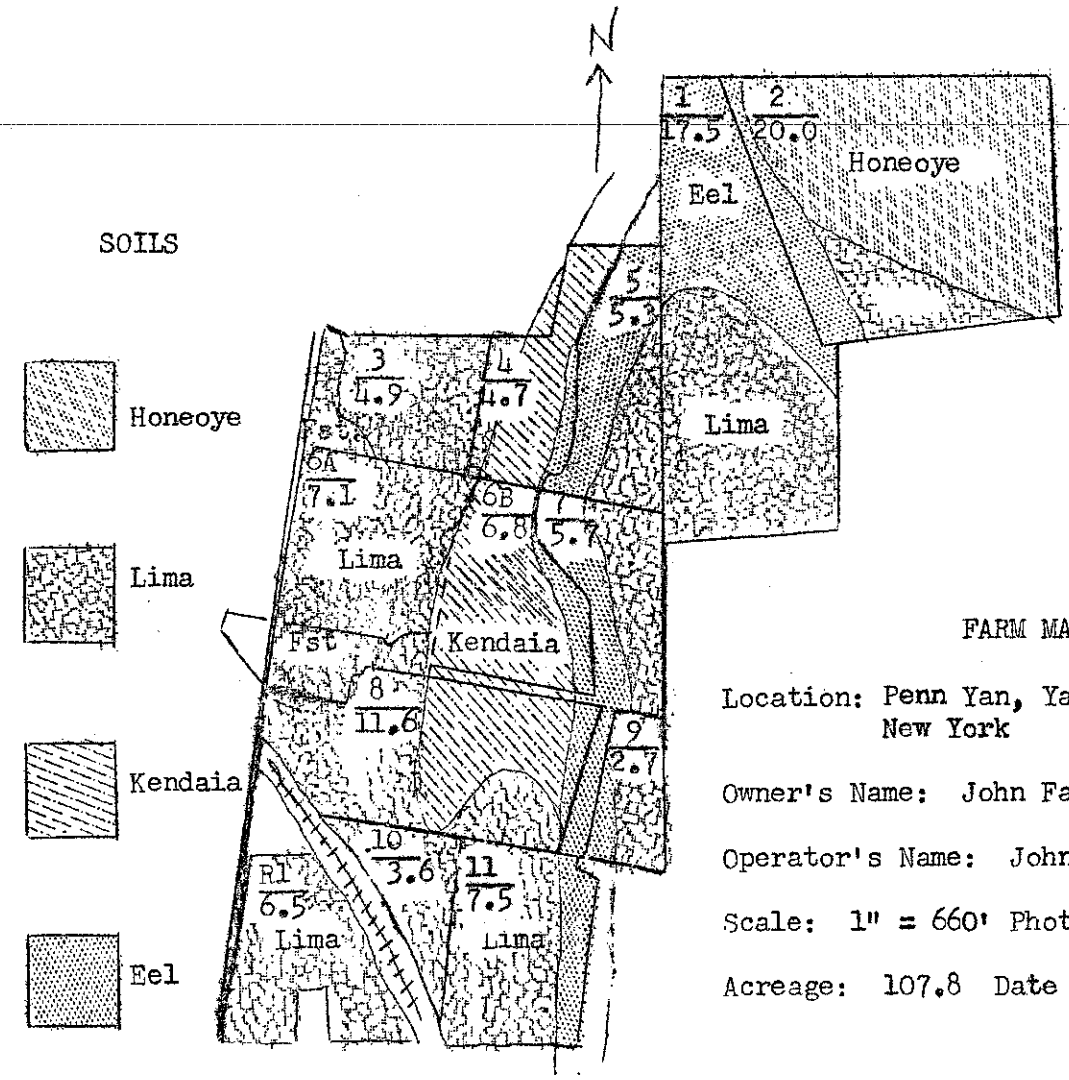
1. the actual rotation which was followed,
2. indications from yields whether or not it is time to re-seed,
3. the response to fertilizer applications,
4. the liming and fertilizing history which can be a guide to future plans.
5. the relative productivity of different fields for different crops.
6. a basis for estimating and planning feed production and purchases.

How to Study the Record

If the maps are kept in a looseleaf book each map can be referred to separately or they can be removed and arranged by years. Individual maps will show the acreages devoted to each crop and can be used early in the year to estimate production. The maps arranged by years show the rotations, trends in yields, and fertilization history.

Before making plans for the next year's crops, the farmer should consult his map record. He should study his needs for feed, he should consider the types of soil he has and their productivity and he should look at the use of the fields in previous years. He then can decide what crops to grow where. He can also consider the yields for different fields, the previous fertilizer practices, and can decide the kind and amount of fertilizer to use.

As each crop is harvested the yields can be recorded and the farmer can see the result of his planning and his operation. He will then be better informed when he starts his planning for the next year.



FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operator's Name: John Farmer

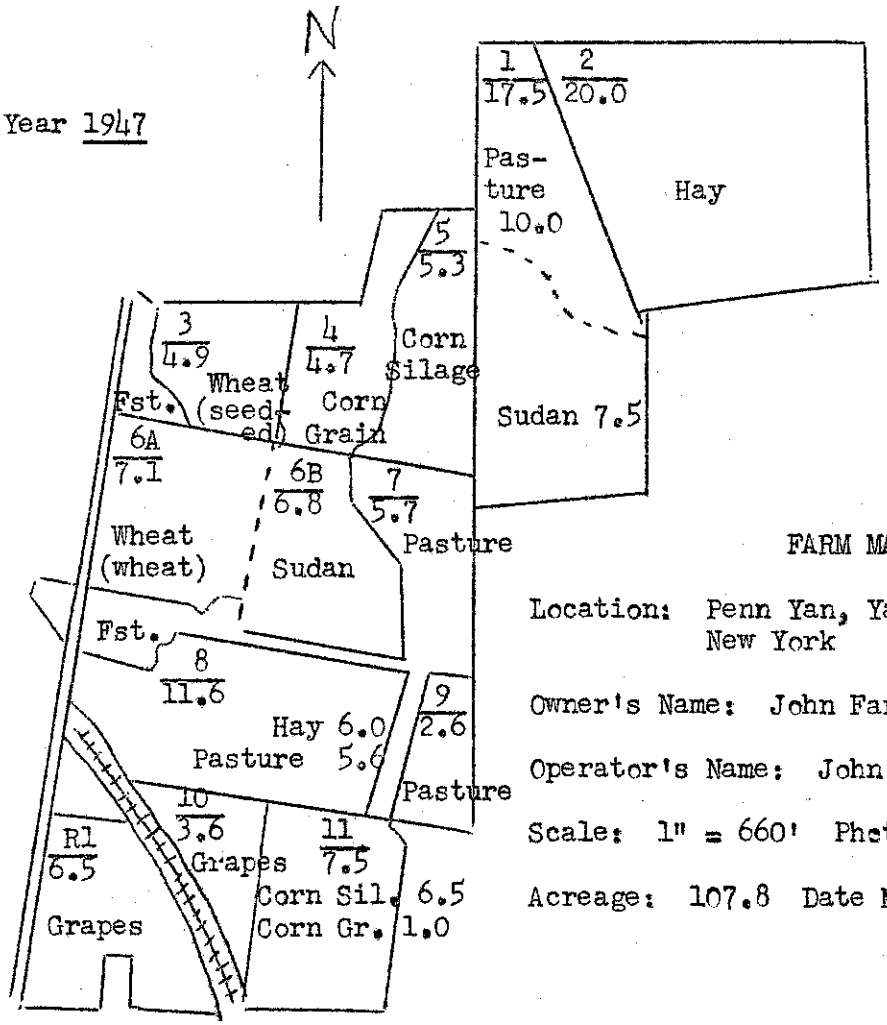
Scale: 1" = 660' Photo No.: CDK-1-24

Acreage: 107.8 Date Made: May, 1953

Use of Land											
Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C				8	11.6	C			
2	20.0	C				9	2.7	P			
3	4.9	C				10	3.6	V			
4	4.7	C				11	7.5	C			
5	5.3	C				Farm-stead	3.9				
6A	7.1	C				Total owned	101.3				
6B	6.8	C				R1	6.5				
7	5.7	P				Total oper.	107.8				

C = Cropland
V = Vineyard
NBV = Non-bearing Vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste

Year 1947



FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operator's Name: John Farmer

Scale: 1" = 660' Photo No.: CDK-1-24

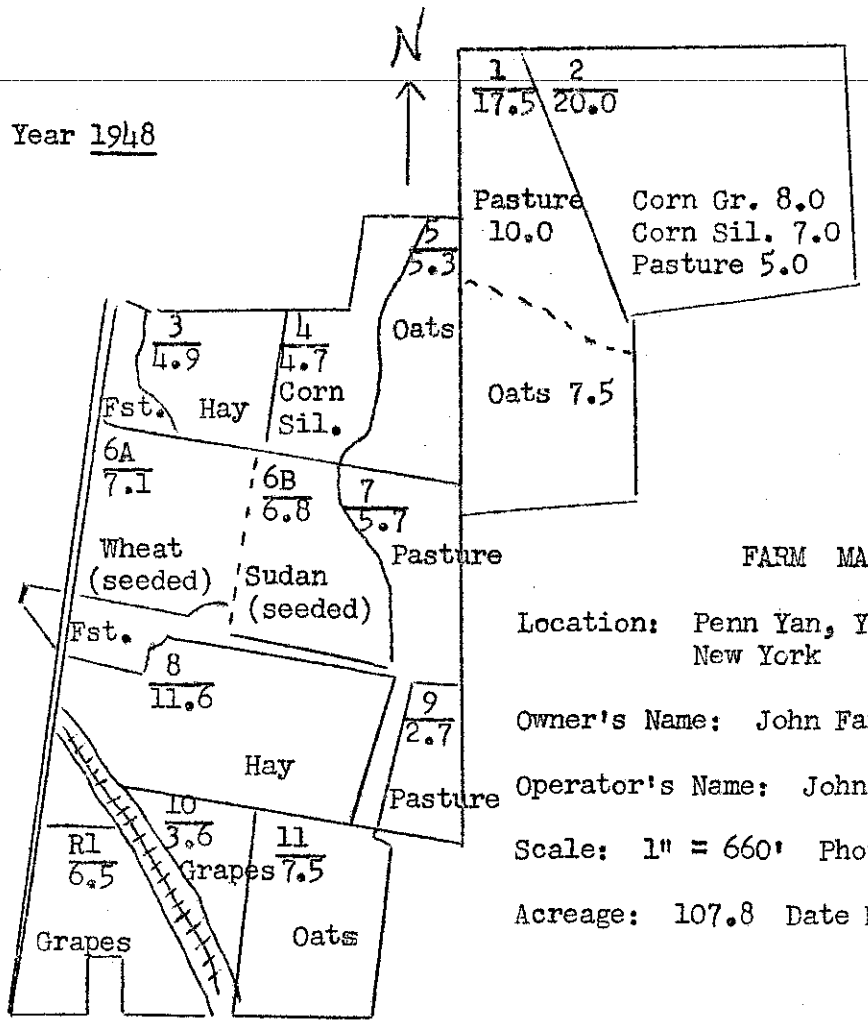
Acreage: 107.8 Date Made: May, 1953

Use of Land

Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C	Past.10.0 Sudan 7.5	17 Manure		8	11.6	C	Hay 6.0 Past. 5.6	37 Manure	9T
2	20.0	C	Hay	96 Manure	31T	9	2.7	P	Pasture		
3	4.9	C	Wheat (seeded)	1300 Phos. 18 Manure	28 bu.	10	3.6	V	Grapes	11 Manure	24850#
4	4.7	C	Corn Grain	15 Manure	412bu.	11	7.5	C	Corn S. 6.5 Corn Gr. 1.0	32 Manure	96T 88 bu.
5	5.3	C	Corn Silage	19 Manure	64T	Farm-stead	3.9				
6A	7.1	C	Wheat (wheat)	1700 Phos. 53 Manure	26 bu.	Total Owned	101.3				
6B	6.8	C	Sudan	78 Manure		R1	6.5	V	Grapes		27660#
7	5.7	P	Pasture		Total oper.	107.8					

C = Cropland
V = Vineyard
NBV = Non-bearing vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste

Year 1948



FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operator's Name: John Farmer

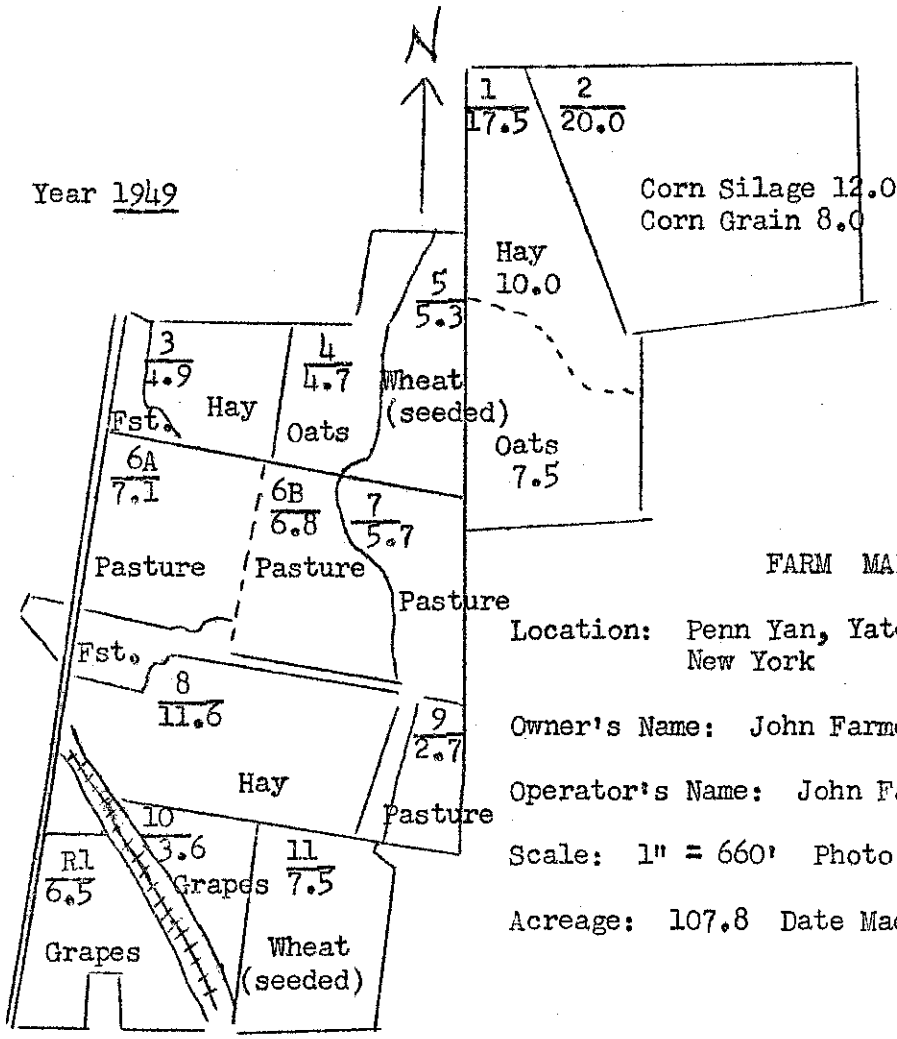
Scale: 1" = 660' Photo No.: CDK-1-24

Acreage: 107.8 Date Made: May, 1953

Use of Land

Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C	Past. 10.0 Oats 7.5	2000 Phos. 11 Manure	460 bu.	8	11.6	C	Hay		32T
2	20.0	C	CornGr. 8.0 CornSi. 7.0 Pasture 5.0	2200-5-10-5 2000-5-10-5 207 Manure	700 bu. 91T	9	2.7	P	Pasture	6 Manure	
3	4.9	C	Hay	8 Manure	14T	10	3.6	V	Grapes	26 Manure	2762#
4	4.7	C	Corn Silage	10 Manure	64T	11	7.5	C	Oats	2000 Phos. 24 Manure	365 bu.
5	5.3	C	Oats	10 Manure	292 bu.	Farm-stead	3.9				
6A	7.1	C	Wheat (seeded)	2800-5-10-5 28 Manure	160 bu. (Lodged)	Total owned	101.3				
6B	6.8	C	Sudan (seeded)	46 Manure		R1	6.5	V	Grapes	20 Manure	36542#
7	5.7	P	Pasture	12 Manure		Total oper.	107.8				

C = Cropland
V = Vineyard
NBV = Non-bearing Vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste



FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operator's Name: John Farmer

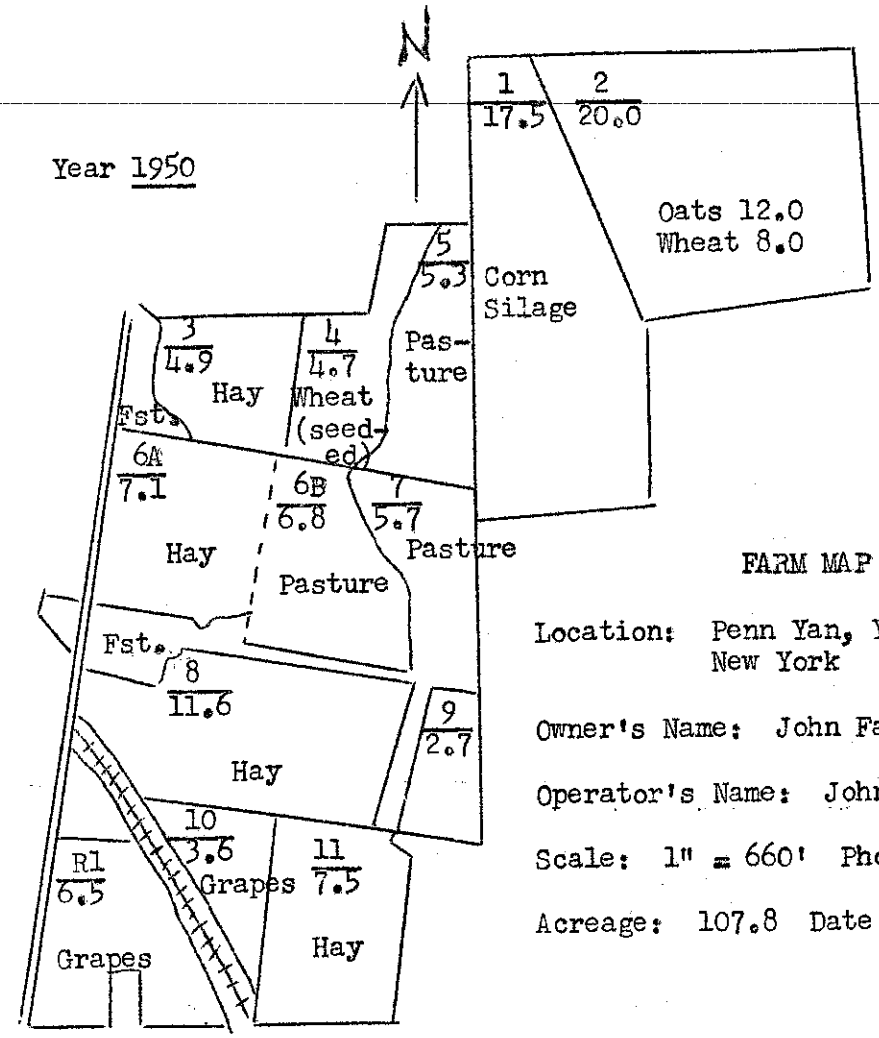
Scale: 1" = 660' Photo No.: CDK-1-24

Acreage: 107.8 Date Made: May, 1953

Use of Land											
Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C	Hay 10.0 Oats 7.5	27 Manure 3200-3-12-6	18T 320bu.	8	11.6	C	Hay		21T
2	20.0	C	CornSi.12.0 CornGr. 8.0	6000 Phos. 110 Manure 4000 Phos.	150T 540bu.	9	2.7	P	Pasture		
3	4.9	C	Hay		9T	10	3.6	V	Grapes	34 Manure	16835#
4	4.7	C	Oats	21 Manure 2200-3-12-6	320bu.	11	7.5	C	Wheat (seeded)	2500Phos.	330bu.
5	5.3	C	Wheat (seeded)	5 Manure 1500 Phos.	230bu.	Farm-stead	3.9				
6A	7.1	C	Pasture	6 Manure		Total owned	101.3				
6B	6.8	C	Pasture	56 Manure		R1	6.5	V	Grapes	39 Manure	27968#
7	5.7	P	Pasture			Total oper.	107.8				

C = Cropland
V = Vineyard
NBV = Non-bearing Vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste

Year 1950



FARM MAP

Location: Penn Yan, Yates County New York

Owner's Name: John Farmer

Operator's Name: John Farmer

Scale: 1" = 660' Photo No.: CDK-1-21

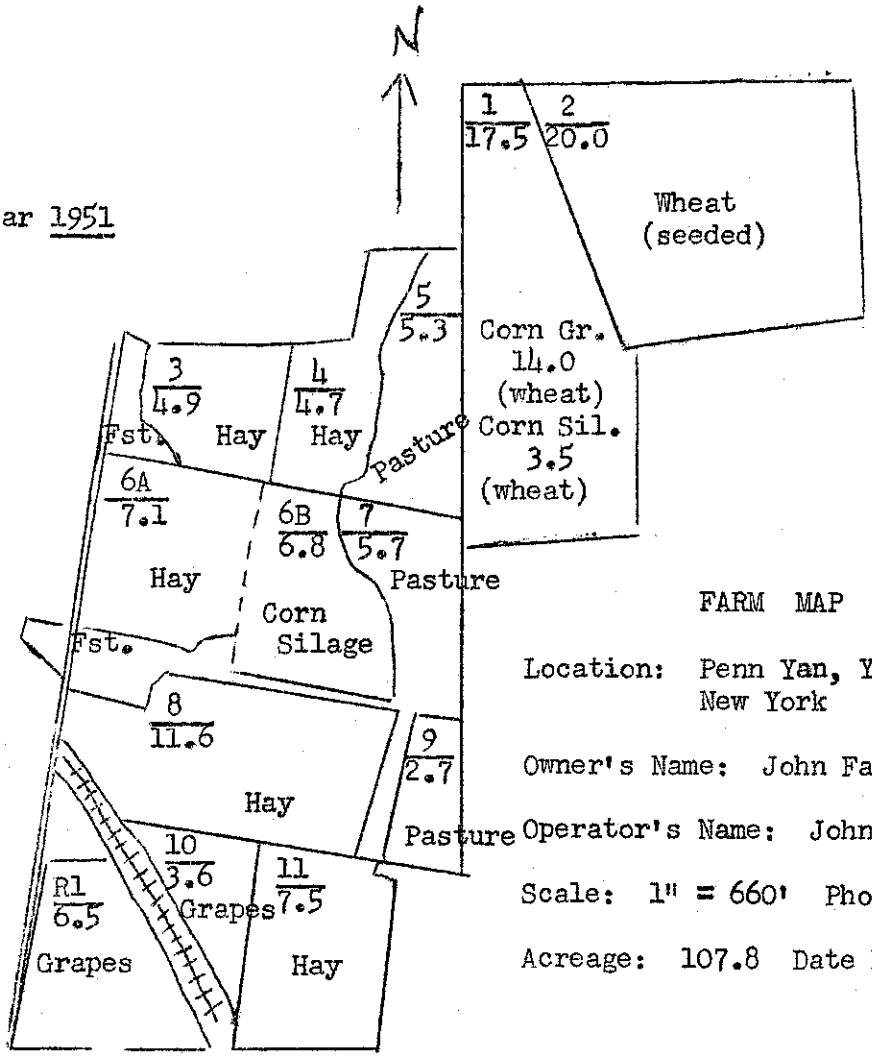
Acreage: 107.8 Date Made: May, 1953

Use of Land

Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C	Corn S.	5600-3-12-6 52 Manure	150T	8	11.6	C	Hay		25T
2	20.0	C	Oats 12.0 (wheat) Wheat 8.0 (wheat)	3600 Phos. 183 Manure 6000-5-10-5	980bu 400bu	9	2.7	P	Past.		
3	4.9	C	Hay		8T	10	3.6	V	Grapes	34 Manure	3483#
4	4.7	C	Wheat (seeded)	12 Manure 1200-5-10-5	180bu	11	7.5	C	Hay	24 Manure	14T
5	5.3	C	Pasture	20 Manure		Farm-stead	3.9				
6A	7.1	C	Hay		13T	Total owned	101.3				
6B	6.8	C	Pasture	60 Manure		R1	6.5	V	Grapes	28 Manure	5105#
7	5.7	P	Pasture			Total oper.	107.8				

C = Cropland
V = Vineyard
NBV = Non-bearing Vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste

Year 1951



FARM MAP

Location: Penn Yan, Yates County, New York

Owner's Name: John Farmer

Operator's Name: John Farmer

Scale: 1" = 660' Photo No.: CDK-1-24

Acreage: 107.8 Date Made: May, 1953

Use of Land											
Field	Acres	Class	Use	Fertilizer	Yield	Field	Acres	Class	Use	Fertilizer	Yield
1	17.5	C	Corn Gr. 14.0 (wheat) Corn S. 3.5 (wheat)	3500-5-10-5 840-5-10-5	780bu 59T	8	11.6	C	Hay	44 Manure	21T
2	20.0	C	Wheat (seeded)	3500-5-10-5 95 Manure	717bu	9	2.7	P	Pasture		
3	4.9	C	Hay	8 Manure	9T	10	3.6	V	Grapes	32 Manure	2423#
4	4.7	C	Hay	15 Manure	9T	11	7.5	C	Hay		14T
5	5.3	C	Pasture			Farm-stead	3.9				
6A	7.1	C	Hay		12T	Total owned	101.3				
6B	6.8	C	Corn Silage	1700-5-10-5 67 Manure	116T	R-1	6.5	V	Grapes	33 Manure	3547#
7	5.7	P	Pasture			Total Oper.	107.8				

C = Cropland
V = Vineyard
NBV = Non-bearing Vineyard
BO = Bearing Orchard
W = Woods
F = Farmstead
P = Pond
X = Waste