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N E W Y O R K C R O P S A N D L I V E S T O C K

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Labor Requirements and Average Yields for New York State Crops

Crops	Total man hours per acre	Average yield per acre	Unit	Average Yield per 10 hrs. of labor
Grain				
Barley	19	24	Bu.	13
Buckwheat	20	17	Bu.	9
Corn	45	34	Bu. Shelled	8
Oats	16	29	Bu.	18
Rye	18	16	Bu.	9
Soybeans	19	15	Bu.	8
Wheat	14	22	Bu.	16
Hay				
Alfalfa	18	1.9	Tons	1.1
Clover and timothy	9	1.2	Tons	1.3
Grain	17	1.6	Tons	0.9
Soybeans	19	1.5	Tons	0.8
Clover Seed				
Alsike	8	1.9	Bu.	2.4
Red	7	1.5	Bu.	2.1
Silage				
Corn	32	9.3	Tons	2.9
Tree and Vine Fruits				
Bearing age				
Apples	105	117	Bu.	11
Cherries	160	1.5	Tons	0.09
Grapes	130	1.7	Tons	0.13
Peaches	105	106	Bu.	10
Pears	75	104	Bu.	14
Plums and prunes	60	47	Bu.	8
Quinces	110	197	Bu.	18
Not of bearing age				
Apples	28			
Cherries	20			
Grapes	100			
Peaches	25			
Pears	20			
Plums and prunes	20			
Quinces	30			
Berries				
Blackberries	220	702	Qts.	32
Currants	250	1,666	Qts.	67
Gooseberries	220	1,356	Qts.	62
Raspberries	340	994	Qts.	29
Strawberries	525	1,896	Qts.	36

Labor Requirements and Average Yields for
New York State Crops (Continued)

Crops	Total man hours per acre	Average yield per acre	Unit	Average Yield per 10 hrs. of labor
Vegetables				
Asparagus (M.A.)	216	2,592	Lbs.	120
Beans, dry	27	13	Bu.	5
Beans, snap				
Harvesting included	243	1.6	Tons	0.07
Harvesting not included	48	1.6	Tons	0.33
Beets, table				
Processing	145	5.9	Tons	0.41
Fresh market (M.A.)	269	294	Bu. (52#)	11
Cabbage	95	9.4	Tons	1.0
Cantaloupes (N.J.)	110	104	Crates (60#)	9
Carrots	325	475	Bu. (50#)	15
Cauliflower (M.A.)	313	214	Crates (37#)	7
Celery (M.A.)	342	291	Crates (90#)	9
Corn, sweet				
Processing	37	2.1	Tons	0.57
Fresh market (N.J.)	50	395	Doz. ears	79
Cucumbers				
Processing	105	96	Bu. (48#)	9
Fresh market	120	121	Bu. (48#)	10
Lettuce	225	222	Crates (70#)	10
Onions	380	237	Sacks (100#)	6
Peas, green				
Processing	17	1,280	Lbs.	753
Fresh market	140	83	Bu.	6
Peppers, (N.J.)	150	249	Bu. (25#)	17
Potatoes	73	126	Bu.	17
Spinach (M.A.)	150	327	Bu. (18#)	22
Squash	100	5	Tons	0.5
Tomatoes				
Processing	137	7.4	Tons	0.54
Fresh market	185	217	Bu.	12
Other Crops				
Tobacco	290	1,258	Lbs.	43
Maple syrup			Gals.	5
Maple sugar			Lbs.	37

Average Labor Requirements for New York Livestock

Livestock	Job	Man Hours Required
Dairy Cattle		
Cows	Year's care of one cow producing the state average of 6160 lbs. of milk testing 3.82; 235 lbs. of fat	160
Beef Cattle		
Breeding herd	Year's care of one cow and accompanying stock, producing one calf	33
Chickens		
Laying flock	Year's care of one hen producing the state average of 141 eggs	1.8
Rearing	Raise one pullet 20 weeks old and accompanying cockerel to broiler age	0.7
Incubation	Hatch 1000 salable chicks	24
Swine		
Hogs raised	Raise one animal from weaning age to 200 lbs.	10
Sows	Year's care of one sow raising 11 weaned pigs	30
Sheep		
Breeding flock	Year's care of one sheep producing 8 lbs. of wool and 0.85 lamb	5.1
Feeder lamb	Season's care of one lamb gaining 27 lbs. after allowing for death loss	1.5
Turkeys		
Growing flock		
Sold dressed	Raise one turkey weighing 14 lbs. dressed	2
Sold alive	Raise one turkey weighing 16 lbs. alive	1.2
Breeding flock	Year's care of one turkey hen producing 40 eggs	7
Incubation	Hatch 100 salable poults	10

Output of Livestock Products Per 10-Hour Day

Dairy	385 lbs. of milk or 15 lbs. of butterfat
Hens	65 doz. eggs
Rearing pullets	14 pullets and accompanying broilers
Sheep	If one-fourth of the total labor on sheep is for the production of wool and three-fourths for the production of lambs, then 63 lbs. of wool or 2.2 lambs are produced in 10 hours.

Output Units

Units of output represent the number of days that would be required, under average conditions, to produce a given quantity of farm products.

The number of output units on a farm is calculated by multiplying the quantity produced by units which have been calculated on the basis of average labor requirements.

Units for the most common products are given below. Units for other products may be calculated by referring to the average labor requirements given in previous tables.

New York Output Units for Various Enterprises

Grain (per 100 bu.)	
Corn	13
Soybeans	13
Small grain	6
Hay (per ton)	0.8
Corn silage (per ton)	1/3
Fruit (per 100 bu.)	
Apples	9
Peaches	10
Fruit (per ton)	
Cherries	11
Grapes	8
Fruit not of bearing age (per acre)	
Grapes	10
All other	2
Berries (per 100 qts.)	
Raspberries	3
Strawberries	3
Forest Products	
Maple syrup, per 100 gals.	20
Firewood, per 12" cord	1
Lumber, per 1000 ft.	2
Work off farm, per day	1

Vegetables (per 100 bu.)	
Beans, dry	21
Carrots	7
Potatoes	6
Vegetables (per ton)	
Beans, snap	
Harvesting included	15
Harvesting not included	3
Beets, canning factory	2.5
Peas, canning factory	3
Sweet corn, canning factory	2
Tomatoes, canning factory	2
Milk	
7 units for 100 lbs. of butter fat or 1/4 unit for 100 lbs. of 3.8 milk. For milk which is retailed by the farmer add to the above 0.5 units for each 100 qts. retailed	
Livestock (per head)	
Heifers	2
Bulls	5
Beef, calves raised	3
Pullets raised	0.07
Colts	4
Pigs weaned	0.3
Lambs raised	0.5
Livestock	
Eggs, per 1000 doz.	15
Chicks hatched, per 1000	2.5
Hogs raised, per 100 lbs.	0.5
Wool, per 100 lbs.	1.6

Productive Man Work Units

Productive man work units represent the number of days that would be required, under average conditions, to care for the acreage of crops grown and the number of livestock kept.

The number of productive man work units on a farm is calculated by multiplying the acres of each crop and the number of each kind of animal by units which have been calculated on the basis of the average amount of time required to handle one acre or one animal.

Units for the most common livestock and crops are given below. Units for other enterprises may be calculated by referring to the average labor requirements as given in the previous tables.

New York Work Units for Various Enterprises

Grain (per acre)	
Corn	4.5
Soybeans	2
Small grain	1.5
Hay (per cutting)	1
Corn silage (per acre)	3
Fruit (per acre)	
Apples	10
Cherries	16
Grapes	13
Peaches	10
Fruit not of bearing age (per acre)	
Grapes	10
All other	2
Berries (per acre)	
Raspberries	34
Strawberries	52
Forest Products	
Maple syrup, per 100 gals.	20
Firewood, per 12" cord	1
Lumber, per 1000 ft.	2

Vegetables (per acre)	
Beans, dry	3
Beans, snap	
Harvesting included	24
Harvesting not included	5
Beets, canning factory	14
Cabbage	9
Carrots	32
Peas, canning factory	2
Potatoes	7
Sweet corn, canning factory	4
Tomatoes, canning factory	14
Livestock (per head)	
Dairy cows	16
Heifers	2
Bulls	5
Beef cows	3
Hens	0.2
Pullets raised	0.07
Chicks hatched (per 1000)	2.5
Colts	4
Brood sows	3
Hogs raised	1
Ewes and rams	0.5
Miscellaneous	
Retail milk, per 100 qts.	0.5
Work off farm, per day	1

Calculation of Factors for a Sample Farm

To indicate how work units, output units, and other closely related factors are calculated for an actual farm, a Genesee County farm has been chosen as an example.

The following items are taken from the summary of a year's business on this farm:

Corn for grain	1.5 acres	50 bu.
Corn for silage	10 acres	102 tons
Potatoes	2 acres	175 bu.
Dry beans	15 acres	320 bu.
Oats	20 acres	700 bu.
Wheat	33 acres	924 bu.
Alfalfa (2 cuts)	10 acres	25 tons
Clover	30 acres	45 tons

12 cows -	79660 lbs. milk sold
6 heifers	
1 bull	
1 sow -	8 pigs weaned - 4 raised
25 hens -	no eggs sold

Labor

Operator	
Son -	9 mos.
Day help -	25 days
Wife -	2 mos. equivalent

Sample Farm

Work Units Calculated

	Acres or number on this farm		Work units per acre or per head		Total work units on this farm
Corn for grain	1.5	x	4.5	=	7
Corn for silage	10	x	3	=	30
Potatoes	2	x	7	=	14
Dry beans	15	x	3	=	45
Oats	20	x	1.5	=	30
Wheat	33	x	1.5	=	50
Alfalfa (cut twice)	10	x	2	=	20
Clover (cut once)	30	x	1	=	30
Cows	12	x	16	=	192
Heifers	6	x	2	=	12
Bull	1	x	5	=	5
Sow	1	x	3	=	3
Hogs raised	4	x	1	=	4
Hens	25	x	0.2	=	5
			Total		447

Output Units Calculated

	Production on this farm			Output units for given quantity		Output units on this farm
Corn for grain	50	bu.	x	13 per 100 bu.	=	6
Corn for silage	102	tons	x	1/3 per ton	=	34
Potatoes	175	bu.	x	6 per 100 bu.	=	10
Dry beans	320	lbs.	x	21 per 100 bu.	=	67
Oats	700	bu.	x	6 per 100 bu.	=	42
Wheat	924	bu.	x	6 per 100 bu.	=	55
Alfalfa	25	tons	x	0.8 per ton	=	20
Clover	45	tons	x	0.8 per ton	=	36
Milk sold	79660	lbs.	x	1/4 per 100 lbs.	=	199
Heifers	6	head	x	2 per head	=	12
Bull	1	head	x	5 per head	=	5
Pigs weaned	8	head	x	0.3 per head	=	2
Hogs raised	8	cwt.	x	0.5 per 100 lbs.	=	4
Eggs sold	None		x	15 per 1000 doz.	=	0
				Total		492

Sample Farm

Production Index

The relation of yields and production per animal to the average can be determined by dividing the total output units on the farm by the total work units on the same farm. For this farm, this figure is 110 (492 ÷ 447 x 100). The production index of 110 on this farm indicates that the rate of production was 10 per cent above the state average.

Man Equivalent

To calculate man equivalent, add together the months of work done on the farm. Count the operator's time as 12 months. Count 26 days of day labor a month. Change the time for woman and child labor to an equivalent for men if the rate of work was different. Divide by 12.

Following is the calculation for this farm.

Worker	Months
Operator	12
Son	9
Day help	1
Wife	2
	24

24 divided by 12 = 2.0 man equivalent

Labor Efficiency

Work units per man and output units per man are two measures of labor efficiency. Work units per man measures the accomplishment in terms of acres of crops and numbers of animals. Output units per man measures the accomplishment in terms of the amount produced.

On a farm with high yields and production per animal, output units per man will exceed work units per man. On a farm with low yields and production per animal the reverse will be true.

Following are the calculations of these two measures for this farm:

Work units per man 447 ÷ 2.0 = 224

Output units per man 492 ÷ 2.0 = 246

Source of Data

The labor requirements, crop yields, and livestock production averages are for New York State except where otherwise indicated. "M.A." indicates an average for the Middle Atlantic States, and "N.J." for New Jersey.

Most of the yields per acre are averages for the thirties.

Except as noted below, the labor requirements, yield and livestock production averages were obtained from "Labor Requirements for Crops and Livestock", by Cooper, Holley, Hawthorne, and Washburn, U. S. D. A. Mimeographed Report F. M. 40.

Data for rearing pullets, incubation, and feeder lambs are from New York Cost Account farms. Also, labor requirements for wheat, corn for grain, and corn for silage are from New York Cost Account farms.

Labor requirements for snap beans, and for peas and sweet corn for processing are from a study by D. B. Ferguson.

Factors for breeding flocks of sheep are from a study by T. E. La Mont and M. S. Parsons reported in A. E. 314.

Data for beef cattle are from a study by W. M. Curtiss and J. I. Miller reported in Farm Economics No. 130.

Data for turkeys are from a study by E. G. Misner reported in A. E. 300.

The average production per cow is for the year 1942 as reported by the Bureau of Agricultural Economics, Washington, D. C.

The labor requirement for retail milk is from a study by E. M. Hughes reported in Cornell Experiment Station Bulletin 741.

Factors for the following were estimated by the authors: squash, swine, colts, bulls.

If more complete directions are desired for studying a farm business, send to this department for A. E. 396, "How to Study a Farm Business". This is a manual for use in connection with Labor Income Blank No. 40, and the Business Chart for New York Farms.