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Prepared by the Farm Management Group at University Farm, St. Paul, Minn.

## Measures of Successful Production

Large yields and high production are factors which have a very important bearing on the size of farm profits. One farmer will receive much larger financial returns than his neighbors in the same community because he is a more efficient producer. High crop yields or high livestock production means a greater amount of product with the same overhead cost. This lessens the cost per unit, hence the greater profit. The aim of this paper is to outline standards by which a farmer may measure his own business. Such a comparison may reveal some weak spots. Proper attention to the weak enterprises may mean an increase in production and consequently larger income.

## Production Standards for Minnesota Crops

In general the methods and practices in crop management are more nearly standardized than in the case of livestock. Farmers observe the crop operations in the neighborhood and compare their results with those of their neighbors. The measures of success in crops are definite. They are widely understood and liscusses However, a careful sarmer should be able to get yields from 20 to 25 per cent above the average of his community. The accompanying table shows the average yield ner acre for Average Yields per Acre for Five Years by Districts - Minnesota 1921-1925

	Corn	Winter wheat	Spring wheat	Oats	Barley	Rye	Flax	Potatoe	s Tame hay	Wild hay
Northwest North Central Northeast West Central Central East Central Southwest South Central Southeast	2812 27 28 302 35 35 35 35 35 35 37 37	142 182 20 16 16 17 19 18 19 18 29 18 29 18 29 18 2	$12\frac{1}{23}$ $13\frac{1}{23}$ $16$ $16\frac{1}{25}$ $19$	22 <u>등</u> 25 <u>2</u> 7 <u></u> 37 <u>5</u> 37 <u>85</u> 37 <u>85</u> 37 <u>85</u> 37 3405 37	24 27 36 30 28 27 2 31 27 5 27 5	1418 1618 22 17 18 1818 2018 2018 2018 18 2018 18 2018 18 2018 18 2018 18 2018 18 2018 18 2018 18 2018 20		91 115 153 94 94 104 95 99 101	1.45 1.43 1.16 1.53 1.69 1.54 1.49 1.67 1.63	.99 1.22 1.39 1.15 1.34 1.26 1.65 1.28 1.30

The figures presented were obtained from the publications of the Minnesota State Department of Agriculture. These publications give the yields by counties. They are available for distribution upon application to that department. If a person finds that he does not measure up to a standard 20 to 25 per cent above these averages, he may be able to make some improvement by proper attention to the following factors: 1. Cultural practices, 2. rotation, 3. eradication and control of weeds, 4. fertility of the soil by manuring, fertilizing and liming where needed.

## Production Standards for Livestock

Due to the lack of possibility for observation and comparison of livestock practices between farms there is a wide variation between the unsuccessful livestock man and the successful man. For this reason the standard for achievement in livestock is farther above the average than in the case of crops. The standards recommended for livestock are high enough so that they provide a good goal for achievement and yet they are low enough so that they can be reached by intelligent management. The livestock to meet these standards must be well bred for the

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purposes for which they are used. They must receive a well balanced ration in sufficient quantities to allow them to make use of their inherited capacities for production. They must be free from diseases and parasites which always are detrimental to success.

# Dairy Cows:

A dairy farmer with good dairy cows should strive for a herd average of at hast 275 pounds of butterfat per cow including heifers milking. (If measured in milk rather than butterfat the figures would be about 10000 pounds of milk). This figure should represent actual pounds of butterfat delivered at the creamery with proper allowance for butterfat used on the farm. On the basis of cow testing association figures about 10 to 15 per cent should be added, making the standard on that basis 300 to 315 pounds.

To attain the figure recommended mature cows which give less than 225 pounds should be replaced as soon as possible with better cows. This gauge for mature cows should be scaled down for heifers. A 2 year old heifer will produce about 70 per cent of her capacity as a mature cow; a 3 year old 80 per cent; and a 4 year old 90 per cent. A cow five years old or over should be at her maximum production.

On the Steele County Route during a five year period on 106 herd years the extreme range of production was 101 to 297 pounds. Of these 23 herds produced less than 160 pounds, 25 produced between 160 and 190 pounds, 35 between 190 and 220 pounds and 23 over 220 pounds.

On the Pine County Route at Askov in 1925 only five herds averaged less than 200 pounds, seven between 200 and 250 pounds, eight between 250 and 300 pounds and five were over 300 pounds. To get high averages on a profitable basis the cows should have all the legume hay and silage they will eat. The remainder of the nutrients required should be supplied by the concentrates, fed according to production. A protein supplement should be added to give the ration the proper balance.

## Dual Purpose Covs:

Dual purpose cows should produce 200 pounds of butterfat on the basis of the butterfat sold.

## Beef Cattle:

Beef cows should calve in the spring so they can run on pasture with their calves, eliminating the necessity of feeding grain to the cows. About 85 calves should be raised from 100 cows. A weanling calf at seven months of age should weigh about 425 pounds. If the pasture is supplemented with grain about 100 pounds greater gain may be expected. Baby beeves finished for the market should weigh about 950 at fifteen months of age. To reach this weight the calves should receive a full feed of concentrates for 200 days. When hay and grain alone are fed the ration is fairly well balanced. If silage is included a high protein supplement is nddded to balance the ration. When silage is fed the same gain can be obtained at a cheaper feed cost if the amount of concentrates fed is limited to somewhat less than the maximum which they will take. In all cases the feeders should have all the roughages they will eat. Sheep are not a very important enterprise on most Minnesota farms. For those having sheep a goal to work toward would be to raise 125 lambs per 100 eves. I clip of wool averaging nine pounds per ewe is a standard for success in wool croduction.

## Swine:

To reduce the overhead on the young pigs at kest six pigs should be raised per sow. The pigs should gain about one pound a day. At seven months of age on full feed they should weigh 200 pounds or over. A good pasture not only saves grain but also gives the pigs a more favorable opportunity to develop. For pigs on pasture not more than 400 pounds of shelled corn or its equivalent in corn and other small grain together with 225 pounds of skinmilk or  $22\frac{1}{2}$  pounds of tankage should be fed. A hog should be raised to average weight of 225 on 16 bushels of corn and 500 pounds of skinmilk or 50 pounds of tankage. If the pigs are in dry lot somewhat more grain may be required and a larger percentage of the ration should be a high protein supplement. Pasture grasses are high in protein and, therefore, replace part of the protein supplement in balancing the corn.

#### Poultry:

Poultry is a minor enterprise on most farms. The size of flock varies widely as does the amount of feed fed. It is difficult to determine accurately a standard. Howeger, on farms where the chickens can forage for a large share of their feed in summer a flock of ordinary size should pro nee 6000 eggs and 475 pounds of meat per 100 birds on an allowance of 4000 pounds of grain per 100 chickens. An egg production of 100 to 110 eggs per year per hen should be strived for under ordinary conditions altho this figure may easily be exceeded with a little extra care.

In cut-over sections where poultry is unable to pick up much of its own living, 40 to 50 per cent more grain must be fed and greater production per hen must be obtained. With the attention it is possible to give in those sections a production of 150 eggs per hen is a goad that may reached.

In raising chicks sixty per cent of the eggs set should hatch strong chicks. Seventy per cent of the chicks hatched should be raised. The chicks should be hatched early in the spring so that the cockerels may be sold on an early market, and also in order that the pullets may be fed out for egg production starting in November.

A.T. Hoverstad.