

the growing of winter wheat. The experiment was conducted in duplicate, there being six plots in each set. The land had been plowed in the autumn of 1895 and received surface cultivation in the spring of 1896. Four plots in each were sown in the latter part of May with crops to be plowed under later in the season. These crops were peas, buckwheat, rape and crimson clover. The other two plots in each set were worked as a bare summer fallow throughout the season. About the first of August, each of the green crops were plowed under, and the land was then worked on the surface during the month of August. Farm yard manure at the rate of twenty tons per acre was applied to one of the summer fallow plots in each set. On the 25th of August winter wheat was sown on each of the twelve plots. This experiment was repeated in the following year by using twelve plots similar in size to those of the first set, but differently located. The winter wheat seeding in 1897 took place on the 29th of August.

TABLE 5. Results from preparing land in different ways for winter wheat:

Soil preparation 1896 and 1897.	Average results for two years (4 tests).				
	Height of crop.	Percent- age of crop lodged.	Weight of grain per measured bushel.	Yield per acre.	
				Straw.	Grain (bu. 60 lbs.)
20 tons farm yard manure per acre on					
bare summer fallow .....	52.4	45.0	60.8	3.4	40.4
Peas plowed under .....	51.7	31.3	60.8	2.7	37.0
Bare summer fallow .....	52.3	40.0	60.7	2.6	35.0
Rape plowed under .....	50.7	30.8	60.4	2.4	33.7
Crimson clover plowed under .....	50.7	22.5	60.5	2.3	31.2
Buckwheat plowed under .....	50.5	17.5	60.4	2.0	29.9

The amounts of seed used for the green manure crops were as follows: Peas  $2\frac{1}{2}$  bushels per acre, rape 4 pounds, buckwheat 1 bushel, and crimson clover 12 pounds. Land which was treated as a bare fallow throughout the summer and afterwards received farm yard manure at the rate of twenty tons per acre, previous to the sowing of winter wheat, gave the largest yield of grain per acre in the experiment of each year. It should, however, be remembered that this was decidedly the most expensive of the six treatments. Where green crops were plowed under the labor was not great, but the seed required to produce these crops would of course add a little to the cost. The good results from using peas as a crop for green manuring are quite noticeable in this experiment.

The twelve plots used in this experiment in 1897 were cropped again in 1898, six with winter wheat and six with spring wheat, in order to ascertain the influence of the different soil preparations upon the crop of the second year. The average results show that the manured fallow gave the largest yield of grain, and that the land where the buckwheat had been plowed under gave the smallest yield in 1898. These experiments will likely be continued for several years in succession in order to get as full information as possible upon the subject.

sown  
of ea  
cuttin  
was i  
It wi  
of the  
This  
1898.  
Chaff  
ing a  
duced  
from  
of str  
I  
matur  
from  
these  
of the  
that t  
grain

O  
what i  
bunt, c  
reducin  
the gra  
for the  
treated  
fields f  
wheat  
ground  
seed w  
smut b  
duced  
phate c  
The tre  
minuter  
water.  
minuter  
water s  
smut-in  
clean g