

CROPPING SYSTEMS FOR DAIRY FARMS

Expenses, Incomes and Profits Figured on Basis of 40-Acre Farm, Etc.

Investigation Shows Unit Too Small for Best Labor Returns, Expenses Being Proportionally Greater than on Larger Units.

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In College Dairy Seminar.

Conditions in the Willamette Valley are different from those in most sections of the country where facts and figures as to the size of farms and number of stock kept, have been worked out. But as nearly as I can figure 40 acres in this section is the proper unit for one man to work. I am thinking of intensive farming and making every foot of the land produce something. Upon this unit I am going to place 12 dairy cows with young stock to match, amounting to 20 head of stock altogether. The surplus would be sold each year so that only selected stock would be kept. This number with 3 horses and 4 brood sows would constitute the working stock of the farm.

For the cropping system, this 40 acre tract may be divided into two sections, one in which the main rotation is carried out and another smaller section for a system of soiling on a small scale, and hog pasture. The main rotation is one consisting of grain for feeding purposes, clover, pasture and corn. By taking 32 acres of the 40 and dividing it into 4 fields of 8 acres each, the crops and approximate yields would be as follows:

Oats or barley, 450 bushels, hay 20 tons, silage 100 tons. A system of pasturing clover in the spring may be used, thus saving the main pasture and holding off the hay harvest until June rains are over. If the corn crop was short the preceding year, the first cutting of clover may be placed in the silo for summer feeding and in this way aid greatly in supplying feed for the animals. Two silos would be necessary and would have to be quite small on this 40 acres. The remainder of the farm would be divided as follows:

Buildings and grounds 3 acres; hog pasture, soiling crops (corn, peas, garden, etc.) 5 acres.

From the 4 brood sows 20 hogs could be turned off annually. These hogs have the run of the corn and grain fields after the crops are off, and provision for other pasture can be made by sowing rape or turnips with the spring grain or just before the last cultivation of corn.

Some grain will have to be purchased for feed in the form of by-products, but with the economic use of the crops grown, chopping all feed, etc., an immense saving may be effected. The amount of pasture to be held in the summer will depend largely on the operator. The tilth of the soil and the state of cultivation would have to be considered, but if this is in good shape and with the aid of the silos and small soiling system, the cows should go through the summer in excellent condition.

On this 40 acre unit with 12 cows the following returns could be expected: (These cows should make 350 pounds of butter fat.)

Credit:	
Butter fat, 4200 lbs at 30c.....	\$1260.00
Stock sold, 8 head avg. \$35.....	280.00
Hogs, 20 head at \$14.....	280.00
Silage, 100 tons at \$4.00.....	400.00
Grain, 450 bushel at 50c.....	225.00
Hay, 20 tons at \$12.....	240.00
Gross receipts.....	\$2685.00
Debit:	
Interest on 40 acres at \$150 at 6%.....	\$360.00
Depreciation on \$5000 at 8%.....	400.00
Taxes.....	65.00
Feed, 2 tons hog feed.....	\$ 60.00
450 bu. grain.....	225.00
	285.00

Silage, 100 tons at \$4.....	400.00
Hay, 20 tons at \$12.....	240.00

Total Disbursements.....\$1750.00

Receipts.....	\$2685.00
Disbursements.....	\$2110.00

Labor income.....\$ 935.00

Returns per cow:	
Cost of feed,	
10,080 lbs. grain.....	\$151.20
75 tons silage.....	300.00
12 tons hay.....	144.00
	\$495.20

Cost of feed per cow.....	\$41.27
Profit per cow.....	\$63.93

This seems to indicate that the unit of 40 acres with the owner doing all the work, is too small, as the buildings and equipment cost practically the same for the 80 or 120 acre farm, and other things being equal the ratio of profit should be greater on the 80 or 120 acre farm. Three horses can work 80 acres almost as easily as they can 40 and would have fewer idle days, thereby cutting down the cost of maintenances.

Corn, grain, clover and pasture should constitute the rotation and in such proportion that they may be all utilized on the farm. The question of cultivated versus permanent pasture comes in here. The number of cows kept depends largely upon the provision of feed for the summer months and where permanent pastures are available this problem is solved to some extent. But this kind of land is usually worth half or more of the value of cultivated land on the market and it takes about two acres to support a cow so that the balance is in favor of the cultivated pasture. This, with the silo and a small amount of soiling crops should bring the cows through the summer in fine condition as well as keep up the milk flow. More cows can be kept under this system than in any other as it is more dependable.

Eighty to one hundred and twenty acres is the most practical size of farm for the average farmer in the Willamette Valley—above this it evolves the question of efficiency in management.

CARE OF THE WORK HORSE

Horses at work on the farm should be given the best of care, and the work should not be too severe or continued for too long time without giving the horse a rest and change of diet, according to the Animal Husbandry staff at the Oregon Agricultural College. Collars should be examined frequently to see that they conform to changes in the size of the neck as fat changes to muscles, and the hames should be kept perfectly adjusted to the collar. The mane should be kept from under the collar and the shoulders should be washed at meal times, preferably with a little salt in the water. Oats is the standard grain where available, and mixed clover and timothy is one of the best hays. A little hay may be given at noon, all the animals will eat up cleanly over night, and none in the morning. Water should be given three times a day before feeding, and it should be clean enough for the owner to drink.

BUILDING THE SILO

The principles of making a silo are described by Professor G. R. Hyslop, crop specialist of the Agronomy department of the Oregon Agricultural College as follows: "The best type of silo is the cylindrical silo with a continuous door; one that is equipped with a roof and one that is also equipped with a chute. The walls and bottom must be air-tight if the silage is to keep. Air-spaces cause the silage to spoil. The silage frequently settles as much as two, three or four feet. Another essential is that it must be adapted to the amount that must be fed each day. In order to get the very best feed we ought to feed off two or three inches each day."

EUROPEAN TOWNS ALL HAVE MARKETS

Provide Selling Stalls Where Country Growers Meet Customers Direct

System is Bred into Growers Who have Held Same Booths in Family for Several Generations.

Oregon Agricultural College, Corvallis, June 28.—"Practically every European town has its public market," says Dr. Hector Macpherson, of the Oregon Agricultural College. "Town and country meet in the market square, where the city dweller deals directly with the grower of his meats, fruits and vegetables. The market habit is born and bred in every inhabitant of both town and country. It is a habit with the force of generations behind it.

"But it is a habit which has never been widely acquired in America. Our rapid development, the early rise of commercial agriculture, the marvelously rapid growth of our cities, and the demand of our city populations for a much greater variety of products than the surrounding country could produce, have all conspired to make the building up of a public market difficult. Our housewives, even in country towns, practically draw upon the whole world for their food supply. This gives the retail dealer his foothold. The telephone system and the delivery wagon, wasteful as they are, entrench him in his position.

"Hence it is, that it has been almost impossible to maintain a public market except in such of the older American cities as early adopted the European institution. Many of these older cities have the marketing habit as firmly fixed as the cities of the Old World.

"That there are certain advantages in the public market no one would deny. It gives the individual farmer every opportunity to build up a reputation. In such markets as those of Baltimore, Boston, and New Orleans, are stands which have been occupied by the same families for two generations. They have their specialties, and have built up reputations which are assets, just as is the good-will of an old established business. Thus, a premium is placed upon excellence, energy and enterprise, which is much to be desired. Moreover investigations of many of these old public markets have shown that, even allowing for their time, many of the stall-holders are doing much better than they could by selling their products to the local retailers.

"Not only does the farmer get better prices for his products, but the city consumer gets the produce fresh from the farm and at much more reasonable prices than he could buy them from the retailer in the absence of a local market.

"The difference in price to the consumer is best illustrated by the results attained through the establishments of markets as a result of the recent advance in the cost of living. Many cities have attempted to relieve the situation by the establishment of public markets on conditions especially attractive to the farmer, and under the pressure of high prices are trying to cultivate a marketing habit among their citizens."

SPRAY FOR SPOTTED CUCUMBER BEETLES

POISON DUST FOR VERY SMALL PLANTS AND LIQUID SPRAY FOR OLDER ONES BEST

First Infestation of Pest Ended and Second Beginning, to Continue Until Late Summer.

Oregon Agricultural College, Corvallis, June 28.—The twelve-spotted cucumber beetle is a serious pest of beans, cucumber, squash, potatoes, the silks of corn, ornamental plants, etc. The first generation of beetles are present during April, May and early

June. They feed on young plants just pushing through the ground. The new brood of beetles appear in late June and are present until late summer. They riddle the foliage of beans, squash, etc., leaving only a gauze network of the leaf surface; they eat off the silks of corn, preventing the ears from setting kernels; they feed on the ripening fruit of peaches and prunes and ruin the blossoms of dahlias and similar flowers.

Very good success has attended preliminary experimental work with sprays this year. While we would emphasize the fact that these results are not conclusive, and suggest, particularly in the case of beans and very tender foliage, that only a few plants be sprayed at first and careful observations made for a day or two as to the effect of the application on the foliage, we feel warranted in recommending the following treatments:

For small plants prepare a dust spray consisting of sulphur eight parts, powdered arsenate of lead one part; mix thoroughly and dust on the plants in the early morning when the dew is on. A very convenient way to apply this material when a dust gun is not available is through a coarse salt sack or cheese cloth bag.

For older plants and vines use a liquid spray as follows: powdered arsenate of lead one ounce; cheap syrup or glucose one quart; water three gallons. Spray on the plants on a bright day when a slight breeze is blowing. An occasional plant should be left unsprayed. Sometimes the beetles refuse sprayed foliage. Then where no unsprayed foliage is available on which they may congregate, they will often work down just at the surface of the soil and cut off the plant much as a cutworm would do.

FROM WEEKLING TO RANGER

By the time our chicks are a week old the starting mash food which has been used can be substituted by a heavier mash. It is a good plan to take two or three days to gradually wean the chicks from the starting food onto the growing mash consisting of 3 lbs. wheat bran; 1 lb. middlings or good shorts; 1 lb. corn meal with a pinch of salt when mixing. This mash is mixed moist to a crumbly consistency with sour skim milk or butter milk, if possible, or water. Feed once a day for the morning feed, about what will be cleaned up in an hour.

At 11 A. M. and 4 P. M. the grain mixture (equal parts cracked wheat and cracked corn) is scattered; enough to keep the chicks busy an hour. An important point in the last feeding is that the chicks be sure to get a full crop of grain before bed-time.

All through the growing period the chicks should have unrestricted access to charcoal, cracked bone, green food of some kind and a good grade of beef scrap. When possible to do so, furnish skim milk or butter milk to drink.

Keep a constant lookout for lice on the chicks and mites in the coops.

When the chicks are 5 or 6 weeks old they should be large enough to be weaned and will do without the hen if properly feathered and the weather is favorable. As soon as this period is reached, move the birds into more roomy quarters; preferably into growing colony houses on free range. Extreme care should now be taken not to crowd too many chicks into one house. A great many promising birds are ruined by over crowding.—C. C. Lamb, O. A. C. Extension Poultryman.

TEACHERS IN SUMMER SCHOOL

About 200 teachers of Oregon and other states are taking the summer school work at the Oregon Agricultural College. Among them are two young men that came all the way from Missouri and Arkansas to take work in teaching manual arts with Professor Frank Shepherd, whose work they were acquainted with. Many courses are taken, with a very strong demand for instruction in teaching manual arts in rural schools.