



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

WITHDRAWN

CANTERBURY CHAMBER OF COMMERCE
AGRICULTURAL BULLETIN

Canterbury Dairy Farm Budget

Prepared by the Canterbury Agricultural College, Lincoln

Bulletin

CHRISTCHURCH, JUNE 1945.

No. 191

INTRODUCTION

A budget is an estimate of income and expenditure based on a predetermined farming plan. Such estimates of farming operations are made for various purposes. The value to a farmer of being able to budget for himself lies largely in the fact that in order to do so successfully he must draw up a farming plan.

In this bulletin it is intended to give an example of a hypothetical dairy farm budget for Canterbury to help and encourage farmers to budget for themselves, but the particular example given must not be taken as applying exactly to any one actual farm. In subsequent bulletins budgets of mixed cropping and sheepfarms will be outlined.

A brief description is given of the land, details and values of the buildings, an inventory of livestock and plant and machinery, and an estimate of the capital involved.

DESCRIPTION OF LAND

The land is a sixty-five acre block suitable for dairying. Potatoes, lucerne, and an area of chou moellier and mangels for winter feed and barley for pigs are grown. In this example the farm is considered to be suitably subdivided, sheltered, drained and watered, and prices taken are on a "going concern" or standard value basis.

CAPITAL INVOLVED

Land (bare): 65 acres at £30 £
per acre - - - 1950

Buildings (at valuation):

House and garage £800;
milking shed, separating
room and wash-up room
£150; shed £80; pig styes
£40 - - - 1070

Land and buildings - - - £3020

Equals approximately £46 10s. per
acre for the farm.

Livestock:

31 dairy cows at £10 10s.,
£325; 6 rising 2 yr. heifers
in calf at £8, £48; 7 rising
1 yr. heifers at £3, £21; one
bull £10; 2 three-quarter
draught horses at £10, £20;
3 sows at £4, £12; one boar
at £4 - - - £440

Plant and Machinery:

Dairy Plant: 3-cow milking
plant and motor £90; 75-gal.
separator and motor £30;
water heater, electric, £12;
4 ten-gallon cream cans at
£2, £8; water pump and
motor £10; milk pump £5;
milk and calf feed buckets
(six at 5s.), milk drums at
piggery (six at 5s.), £3;
wash-up tubs £2 - - - £160

Implements:

Horse plough, 2-fur., £15;
Grubber £15; drill £25; clod
crusher £3; heavy tyne har-
rows £8; chain harrows £6;
mower £18; tedder £22;
stacker £30; topdresser £20;
spring cart £10; sundry
tools and harness £25 - - - £197

Total Capital Requirements - £3817

Summary of Capital Requirements:

Land and improvements, in-	£
cluding buildings - - -	3020
Livestock - - - - -	440
Dead stock (plant and imple-	
ments) - - - - -	357

Total - £3817

The capital required per cow equals
Capital 3817

equals

No. milking cows 31
equals £123 approximately, is more
for this hypothetical farm than
generally considered necessary for
"average" dairy farms by the dairy
industry in 1934. One reason for
this is that in Canterbury the ma-
jority of dairy farms are purchased
with a view to the carrying on of

some cash cropping and the per cow capital requirement of the majority of Canterbury dairy farms is much greater than the now almost out of date figure of £75 per cow accepted by the dairy industry.

THE PLAN

Before actual estimates can be made it is necessary to outline in detail, using figures where possible, the main points of the farm plan. In other words a programme must be worked out. All that is known to this point is that the area of the farm is 65 acres on which it is proposed to milk 31 cows and carry replacements, and which has an adequate complement of improvements in the form of buildings, fences, drains, etc., and is suitable for the growing of potatoes, barley, and lucerne in addition to dairying.

Winter Feed: The first consideration is to determine the quantities required.

One and a half tons of good hay and two and a half tons of chou moellier and mangels per milking cow are sufficient for the total herd including replacements (see "Feeding Dairy Cows", Bulletin No. 127).

Therefore the total requirements will be: Hay (one and a half tons x 31) 47 tons, chou moellier and mangels (two and a half tons x 31) 78 tons.

The hay could be provided by thirteen acres of lucerne. On average there would be one acre being renewed each year, leaving twelve effective acres yielding four tons per acre, equals 48 tons.

The chou moellier and mangels could be provided by growing one acre mangels (40 tons per acre) 40 tons and 2½ acres chou moellier (20 tons per acre) 50 tons, giving a total of 90 tons.

Those few extra tons above the cattle requirements would be fed to the pigs.

CROPPING PROGRAMME

It is necessary to work into a cropping programme the provision of the above winter feed requirements and also to make provision for the renewal of the lucerne stand. The cash cropping must fit into the scheme also. Such a programme could be:

One acre old lucerne, 5 acres old pasture—2½ acres chou moellier, 1 acre mangels, 2½ acres potatoes—1 acre lucerne, 5 acres barley sown down.

Thus each year five acres of old

pasture and one acre of lucerne are ploughed up and one acre of lucerne is renewed and five acres of new pastures are sown under barley, two and a half acres of potatoes are planted each year, and three and a half acres of mangels and chou moellier are sown for winter feed.

THE BUDGET

Now that the general farm management programme has been decided upon it is possible to draw up an estimate of how the plan will work out financially if it should be actually put into practice. In other words a budget can now be prepared. It is the supporting details to a budget, however, which are all important, and following this budget each item will be fully explained. It is in these explanations that many of the finer points of management will be revealed, and, it is hoped, much that will aid the farmer in working out his own figures.

Estimated Income:

Butterfat	£637;	pigs	£129;
calves	£12;	cull cows	£21;
potatoes	£144;	barley	£37;
rebate on sacks	£2	-	£982

Estimated Expenditure:

(all estimates are to the nearest pound)

Working Expenses:

Stock purchases	£10;	stock	
foods	£1;	fertilisers	£23;
lime	£25;	seeds	£40;
sacks	£18;	twine	£2;
dairy expenses	£19;	veterinary expenses	£7;
freight and cartage	£37;	electricity	£20;
motor expenses	£13;	accountancy and	
legal	£6;	repairs and main-	
tenance	£42;	phone and mail	
£6; general	£10	-	279

Wages:

Casual labour	£34;
harvesting labour	£24;
contract work	£37;
keep for casual workers	£18;
wages of management	£325
-	-
-	438

Overhead:

Rates	£14;
land tax	£4;
insurance	£9;
depreciation	£53;
interest, live and dead stock,	
£40; interest, land,	£136;
surplus	£9
-	-
-	265
	£982

SUPPORTING DETAILS

Each item in the budget will now be fully explained and enlarged upon in order, commencing with the income.

Butterfat:

Thirty-one cows less one for family use equals 30 at 260 lbs. butterfat per cow, equals 7800 lbs. at 19.6 pence per lb., equals £637.

Pigs:

For budgeting purposes, with pig meat at 8½d. per lb. and where meat meal is bought at say £15 per ton on the farm, the net returns from pigs works out at about 2½d. per lb. of butterfat produced.

Where pig foods are home grown the return is of course greater. The actual working out of returns on this farm will reveal some interesting information. For bacon-pork production one sow per ten milking cows is an efficient ratio. Each sow is required to farrow twice a year and seven pigs sold per farrowing can be reasonably achieved. Thus with 31 cows, three sows could be carried, each producing two litters per year, giving a total of six litters annually.

With the majority of the cows calving in August-September efficient utilisation of the skim milk will require that two sows farrow in May and their litters be sold as baconers the following November and December and one sow farrows in June, the litter being sold as porkers in October and November. The two sows which farrow in May, farrow again in November and the other sow in December, these three litters being reared to the porker stage and sold in March and April.

Thus of the six litters reared each year two will be sold as baconers and four will be sold as porkers at weights approximately as follows:

Two litters, fourteen baconers at 130 lb. equals 1820 lb.; four litters, twenty-eight porkers at 65 lb. equals 1820 lb.; total pig meat sold equals 3640 lb.

3640 lb. pigmeat 100

7800 lb. butterfat 1 — equals

46 lb. of pig meat sold per 100 lb. of butterfat produced. This figure falls within the generally accepted standard efficiency range of 40-50 lb. of pig meat sold per 100 lb. butterfat.

Receipts from pigs equals 3640 lb. at 8½d. per lb., equals - £129

Fourteen baconers at £4 12s. equals £64 8s.; 24 porkers at £2 6s. equals £64 8s.; total pig meat sold equals - - - £129

Calves:

Only normal replacements are kept for rearing. The average an-

nual replacement rate is about 20 per cent; therefore, sufficient heifer calves must be reared to ensure 20 per cent of the herd being available as two-year springing heifers, i.e. 20 per cent of 31 equals six springing two-year heifers. To allow for deaths, say one, up to the two-year stage, seven heifer calves must be reared annually. Assuming a 90 per cent calving there would be

90 31
— x — equals 27 calves
100 1

born alive each year, of which seven are reared, leaving 20 to be sold as bobby calves at the gate.

Twenty at 11s. 6d. equals £12.

Cull Cows:

With six two-year heifers going into the herd each year and allowing for one herd death, there must be five others sold if the herd number is to remain at 31 milking cows. Of the five sold, three will probably be sold as "boners" and two as "fats".

Three boners at £3 each equals £9;

two fats at £6 each equals £12;

total from cull cows equals £21.

Potatoes:

2½ acres potatoes at 9½ Total
tons total yield per acre: yield
7½ tons table equals - 18 tons
1½ tons seed equals - 3¾ tons
½ ton pig equals - 1½ tons

Half the seed requirements might be kept each year and the other half "bought in". The pig potatoes and surplus seed, four tons in all, would be fed to the pigs.

Potatoes for sale: 18 tons at £8 per ton f.o.b.s.i. ("reds" at £7 15s. and "whites" at £8 5s.) equals - - - £144

Barley:

Five acres malting barley at 45 bus. per acre equals 225 bus.; less requirements for pigs, 89 bus.; giving 136 bus. for sale at 5s. 6d. per bus. ex stack f.o.r.s.e - £37

Rebate on Sacks:

It will be noted the barley is sold sacks extra and a rebate of 1s. 4d. per sack is made to the farmer.

136 bus. at four bushels per sack equals 34 sacks; 34 sacks at 1s. 4d. equals - - £2

ESTIMATED EXPENDITURE

Stock Purchases:

Include the cost of purchasing replacements not bred on the farm.

Bull:

In a herd of 30 cows it is a practice to purchase a "yearling"

bull (fifteen months) every second year.

Purchase price £15; sold two years later as a boner £5; leaving £10 as the cost for two years. Annual cost equals - £5

Sows and Boar:

The three sows and boar will have to be replaced on average once in four years. At, say, £6 per head the annual stock purchase charge for pigs will be £6, less, say, £3, being the proceeds from the sale of sow or boar as chopper. Annual cost - £3

Horse:

The horses are depreciated at 10 per cent, equals - £2
Total stock maintenance costs £10

Stock Foods:

The only stock food purchased is meal for the calves, though at this point the total pig requirements and their provision will be considered.

Calf Meal:

Say 10lb. meal per calf at 2d. per lb. Seven calves equal 70 lb. meal at 2d., equals - £1

Pig Food Requirements:

Pig foods are commonly expressed in terms of barley meal units, so that different types of food can be readily compared and a suitable ration easily computed. A barley meal unit is 1 lb. barley meal or its equivalent equals one gallon skim milk, equals 10 lb. mangels, equal 4 lb. potatoes.

For one sow and litter of seven to bacon stage 6055 barley meal units are necessary. Similarly for a sow and litter to the porker stage 3360 units would be required. The requirements for a boar for twelve months are 2000 units.

For the well established figures in the matter of feed requirements for pigs, see "Pig Production", Bulletin No. 62.

The total requirements for this particular budget can now be readily estimated:

2 sows and bacon litters at	
6055 units each equals	- 12,110
4 sows and pork litters at	
3360 units each equals	- 13,440
1 boar equals	- 2,000

Total barley meal units re-	
quired equals	- 27,550

The Supply:

Milk, 30 cows at 540 gallons	16,200
Barley, 1½ lb. per 1 lb. pig	
meat sold equals (3640 x 1½), equals approximately	
4450 lb., equals 89 bushels	4,450

Potatoes, 4 tons (seed and pig): 4 x 2240 and divided by 4 equals	- 2,240
Mangels, 12 tons (surplus from cows): 12 x 2240 and divided by 10 equals	- 2,688
Grazing, say 2000 units	- 2,000

Total barley meal units available equals	- 27,578
--	----------

Thus the supply available is sufficient for the requirements.

Fertiliser, Lime, and Seeds:

These three items can be conveniently worked out as under:

One acre mangels:

5 lb. seed at 4s. per lb. equals £1;
3 cwt. super (4 cwt. reverted super) per acre; 1 cwt. lime.
Two and a half acres chou moellier:
3 lb. per acre equals 9 lb. at 3s. 7d. equals £1 12s. 3d.; 5 cwt. super; 5 cwt. lime.

One acre lucerne:

16 lb. at 2s. 6d. lb., £2; 2 cwt. super. (used as reverted super); 20 cwt. lime.

Two and a half acres potatoes:

2 tons seed and 1 ton from own crop equals 1½ tons at £14 10s. per ton, £18 2s. 6d.; 8 cwt super (equals 3 cwt per acre).

Five acres barley sown down:

8 bus. barley at 7s. bus., £2 16s.; 10 cwt super (2 cwt. super per acre); 100 cwt lime (1 ton per acre).

Pasture mixture per acre:

15 lb. "P.P." perennial rye at 16s. per bus., 12s.; 8 lb. cocksfoot at 3s., 24s.; 5 lb. Italian rye at 10/- per bus., 2s. 6d.; 4 lb. red clover at 2s. per bus., 8s.; 2 lb. "P.P." white clover at 3s. 6d. per lb., 7s.; cost per acre £2 13s. 6d. Five acres at £2 13s. 6d. per acre equals £13 7s. 6d.

Total Seeds	-	-	-	£40
-------------	---	---	---	-----

Topdressing:

Lucerne, 12 acres: 12 cwt. super (1 cwt. per acre); 120 cwt. lime (10 cwt. per acre).

Pasture, 50 acres: 50 cwt. super (1 cwt. super per acre); 250 cwt. lime (5 cwt. per acre).

Total Fertiliser: 90 cwt. (4½ tons at £5 "on farm") equals - £23

Total Lime: 496 cwt. (25 tons at £1 "on farm") equals - £25

(see Bulletin No. 156, "Establishment of Permanent Pastures in Canterbury".)

Sacks for Produce sold:

Potatoes (12 sacks per ton): 18 tons x 12 equals 216 sacks at 1s. 4d., £14; barley (4 bus. per sack), 136 bus. equals 34 new sacks at 1s. 6d., £3; replacement sacks for own use for potatoes

and barley for pigs, say 20 per annum at 1s., £1; total sacks £18

Twine:

Seaming twine to sew 34 sacks barley for sale, plus 25 for own use equals 2 hanks twine at 2s., 4s.; binder twine to reap 5 acres barley (say 5 balls), to sew 276 sacks potatoes (say 2 balls), 7 balls binder twine at 4s., £1 8s. total twine - - £2

Dairy Expenses:

This item covers sundry purchases such as cow covers, teat grease, separator oil, nails, staples, handles for tools, weed killer, washing soda, rubbers, brushes, etc., etc., equals 12s. per cow milked, equals 31 x 12, equals - - £19

Veterinary Expenses:

Allows for the cost of drenches, licks, salts, disinfectants, douches, medicines, and occasional veterinary services, equals 4s. 6d. per cow milked, equals 31 x 4s. 6d. - £7

Freight and Cartage:

In order to estimate this item, it is assumed the farm is four miles from the nearest railway station and shopping centre and twenty miles from Addington.

Cartage to Railway Station:

216 sacks potatoes at 6d. each; this figure includes 1d. per sack to cover loading sacks from rows in the paddock, equals £5; 34 sacks barley at 5d. each equals £1.

From Railway Station:

Lime and manure, prices "on farm"; 1½ tons seed potatoes, equals 16 sacks at 5d. each, equals - 10s.

Cartage of Sundry Purchases:

Oil fuel, timber, sacks, etc., say £5 10s.

Cartage to Addington:

57 pigs at 2s. 6d. - - £7

Freight:

F.O.B. charges on potatoes at 1s. sack (216 sacks at 1s.), £11; seed potatoes (1½ tons), and sundries, say - - - £5

Droving - - - - £2

Total Freight and Cartage - £37

Car for Farm Purposes:

Say one trip to local village (four miles) per fortnight and one trip to Christchurch (twenty miles) per month at 4½d. per mile, equals 688 miles at 4½d., equals - - £13

Accountancy and Legal:

Includes the cost of preparing Social and National Security and Income Tax returns, return of land, and minor legal expenses, say £5

Repairs and Maintenance (all repairs on average annual value):

Buildings:

House and garage, 1½ per cent of

£800, £12; milking shed, 2 per cent of £150, £3; implement shed, 2 per cent of £80, £1 12s.; pigstyes, 4 per cent of £40, £1 12s.; total £18 4s.

Plant and Machinery:

Milking machinery, 7 per cent of £90, £6 6s.; separator motors, pump and heater, 2 per cent of £60, £1 4s.; implements and harness, 5 per cent of £207, £10 14s.; total £18 4s.

Fencing at 9d. per chain: say two chains per acre, 70 acres equals 140 chains at 9d., £5 5s.

Total repairs and maintenance £42

Phone and Mail, say - - £6

General:

An item to cover odds and ends not mentioned - - - £10

Casual Labour:

One man for two months (May-June) to allow owner one month's holiday and to help with harvesting potatoes, hedge cutting, mangel pulling, and winter feeding out. One man at £4 per week, equals 8 weeks equals £32 plus holiday pay and keep £2, equals - - £34

Wages:

Harvesting Labour:

Stacking barley, owner to find four extra men, one horse and dray for one day: horse and dray 5s.; four men at £1, £4.

Stacking 24 tons lucerne hay, owner to find five extra men for four days at £1 per man per day, £20.

Potatoes dug, sorted, and bagged by hand with help of casual employee employed for two months (May-June).

Total harvesting labour - £24

Contract Work:

Baling 24 tons lucerne at 23s. 3d. per ton, £29; threshing barley, 225 bushels at 8d. bus., £8; total contract - - - £37

Keep for Casual Workers:

One man, eight weeks at £1, plus other £10 - - - £18

Wages of Management:

For a farm of this size it is generally considered that the reward to a working owner with a wife and three young children of school age would be in the vicinity of £325, without allowing for payment of life insurance and Social Security taxes.

Overhead:

Rates, say 1½d. per £ capital value of £3020, £14; Land Tax, 1d. per £ unimproved value of £1500 less £500 exemption, tax on £1000, £4; Insurance, employer's liability and

personal risk £4; buildings, value £1045, 8s. 8d. per £100, £5; total insurance - - - £9

Depreciation, wood and iron buildings £1070 at 2½ per cent, £27; implements and plant, £357 at 7½ per cent, £26; total depreciation £53.

Interest: live and dead stock, £797 at 5 per cent, £40; land, 65 acres at £46 10s. per acre equals £3020 at 4½ per cent, £136.

CONCLUSION

Farmers should bear in mind that while this budget is a complete forecast of the management envisaged on a hypothetical Canterbury dairy farm, it is not suggested that the farming policy herein described should be literally followed. It is intended that farmers will be helped in their budgeting by using this as a basis or example.

Copies of this Bulletin may be obtained from the Secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.