LIVESTOCK ALTERNATIVES IN SOUTHERN IOWA

Walter Woods and Ralph Durham

The livestock alternatives for the 10-county study area are involved in methods which (1) intensify or expand production, (2) make maximum utilization of permanent pasture, (3) create opportunity for more profitable labor and management income and (4) provide a basis for area cooperation in marketing of livestock. Livestock intensification offers possibilities for expanding volume in this study area. The various alternatives depend on the farm sizes, land type, operator's interest, availability of capital and market outlets. In the following discussion of possible alternatives, the emphasis is placed in most cases on a greater volume of livestock than is currently present in this area.

The only way to economically utilize permanent pasture is through cattle and sheep. It would seem that the number of livestock in beef cattle and ewes could be increased in this area. The one area that seems to offer an alternative for a more economic and practical unit is in the efficient use of the pasture produced. It has been demonstrated by pasture improvement studies that the carrying capacity of this land can be increased which would permit a greater increase in livestock numbers. One solution to the problem then, it seems, is to adapt a type of production to the 10-county study area that would insure a more desirable income and utilize the pasture produced. The types of production that characteristically fit a grain-deficient, pasture area is the production of milk fat slaughter calves and feeder calves. The ewe flock is also adapted in the production of slaughter lambs and feeders. The following discussion will deal with several alternatives designed to incorporate the above possibilities in a pasture farm.

The common concept of feeding pigs from birth to market on the same farm is not adapted to a grain-deficient area. An alternative that would make more use of pasture or silage would appear to be adapted to the 10-county study area. The production of feeder pigs has potential in this area and is discussed as an alternative in southern Iowa.

Cattle and Sheep Alternatives

Slaughter Calf Production

The production of slaughter calves has the desirable traits that makes it an alternative for the 10-county study area of southern Iowa. A slaughter calf is a milk fat calf weighing 550 to 700 pounds. This type of production has enjoyed

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success in Kentucky and Missouri. The cow of predominately dairy breeding lends herself to this type of production. It is important that the cows have the ability to produce considerable milk to insure the growth and fattening desired. The desirability of this is shown in table 1. There are a sufficient number of cows of dairy breeding in the study area to consider the possibilities of fat calf production.

Table 1. Production of Milk Fat Calves

<table>
<thead>
<tr>
<th>Type of Cow</th>
<th>Final Farm Weight</th>
<th>Average Daily Gain</th>
<th>Average Carcass Grade</th>
<th>Average Dressing Percent</th>
<th>Market Value Per Calf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Hereford</td>
<td>536.3</td>
<td>1.77</td>
<td>Good</td>
<td>56.97</td>
<td>$85.89</td>
</tr>
<tr>
<td>Cross Bred</td>
<td>573.4</td>
<td>1.92</td>
<td>Good plus</td>
<td>59.06</td>
<td>$93.79</td>
</tr>
<tr>
<td>Grade Jersey</td>
<td>625.0</td>
<td>2.13</td>
<td>Choice</td>
<td>60.36</td>
<td>$99.64</td>
</tr>
</tbody>
</table>

1/ Summary of four years' results reported in University of Kentucky Annual Livestock Field Day Report for 1957.

The farmer who has cows of dairy breeding can produce fat calves with the minimum of change. The only initial expense would be the purchase of a beef bull. The production of fat calves offers an income from the pasture land that might not be realized by other methods of production. It also seems reasonable to think that the farmer with improved pastures would benefit in this type of program. The possible return per cow and per acre of land from the production of fat calves is shown in table 2.

The individual starting in milk-fat calf production has the possibility of upgrading his cattle and becoming a feeder calf producer. This type of production will be discussed later.

The production of slaughter calves offers the possibility to the farmer of marketing home-grown grain through livestock. The returns should be economically profitable in this type of production. In considering the attractiveness of the production of slaughter calves, the size of the farm unit is a consideration. The smaller farm has less chance of being adapted to this type of production than larger farms. To make slaughter calf production the major source of income, it is estimated that it would take about a 100 cow herd to give the operator the return that is equal to the average of the state.

A second alternative that appears attractive in the fat-calf production would be, after weaning the calf, to feed it for about 90 days. This would mean selling a 11-12 month old calf weighing 750-850 and still carrying a desirable finish.
Table 2. Cost of Production and Return of Slaughter and Feeder Calves

<table>
<thead>
<tr>
<th>Type of Production</th>
<th>Weight of Calf</th>
<th>Price Per Cwt.</th>
<th>Cost of Cow Per Year</th>
<th>Net Return Per Cow</th>
<th>Net Return Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
<td>No Creep</td>
<td>Creep</td>
</tr>
<tr>
<td>Slaughter calf</td>
<td>600</td>
<td>$18</td>
<td>$60</td>
<td>$70</td>
<td>$48</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>60</td>
<td>70</td>
<td>60</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>60</td>
<td>70</td>
<td>72</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>60</td>
<td>70</td>
<td>84</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>60</td>
<td>70</td>
<td>96</td>
<td>84</td>
</tr>
<tr>
<td>Feeder calf</td>
<td>400</td>
<td>22</td>
<td>60</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>60</td>
<td>70</td>
<td>36</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>60</td>
<td>70</td>
<td>44</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>60</td>
<td>70</td>
<td>52</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>60</td>
<td>70</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

1/ It was estimated the calf would consume 500 pounds of creep feed.
2/ Assuming 4 acres per animal unit.
The feeder would make maximum uses of corn silage with a minimum amount of grain. This would provide the farmer with a greater income per cow in that the total weight sold would be increased. It also gives the operator a more intensive program. It would be possible to increase net returns per calf by feeding it an additional three months by $12 to $20.

**Feeder Calf Production**

The increased concern about supply of feeder cattle for the corn belt combined with high prices enjoyed for feeders in recent years makes the production of feeder calves an attractive enterprise for the 10-county study area. The area is located near the large cattle feeding region which gives it an advantage from transportation standpoint. The production of feeders would make maximum utilization of the roughage produced in this area.

The first requirement to meet is to insure a supply of feeders that are high in quality and quantity. This can be done by organizing in local areas to sell calves. The farmer having a beef cow herd can then expect to have a ready market for feeder calves. It also offers the possibility to the farmer of being able to feed his own calves thus intensifying his operation.

The production of feeder calves seems to be more adapted to areas containing large amounts of permanent pasture since it is not necessary to have the calves in as good condition as the milk-fat calves. The possible return per cow and per acre are shown in table 2. The unit that is necessary to insure the operator of a return equal to the average of the state appears to be about 100 head of cows if the calves are sold as feeders. By wintering or feeding the calves, the number of cows can be reduced to give the same level on income.

A sub-alternative to feeder calf production for the farmer who can produce more harvested roughages than his cow herd would require would be to winter the calves for several months. With a roughage type program the raiser of feeder calves could hold them until the high market in the spring and realize a greater income from his feed and labor. The gain from weaning time to this period would be put on at a minimum with fairly cheap feeds.

**Spring Lamb Production**

The purpose of discussing spring lamb production is not to consider it as a new alternative but to emphasize the possibility of expansion in this area. The high price for slaughter lambs comes at the time when the spring lamb should be ready for market. This type of production has enjoyed success in several states and is rapidly making progress in the study area. The greatest opportunity is to encourage a greater participation in this program. The
returns from this type of program can be increased considerably by proper management and feeding.

Since climatic condition is a consideration in southern Iowa, the production of spring lamb should be timed to the availability of forages. The lamb is sold before the native pastures are in short supply. The ewe does not require an abundance of feed during the dry non-pregnant period.

The ewe flock should be looked upon as a major enterprise rather than a sideline. A ewe properly managed should return $8 to $10 above cost of keep per year. A 500 head ewe flock would be equivalent to about 100 beef cows and on this basis would yield a return of $4,000 to $5,000 per year, which would be equivalent to average income in the rest of the state. The assumption that has to be made is that the operator has the managerial ability to handle 500 ewes.

Feeder Lamb Production

The production of feeder lambs has not been considered strongly as an alternative in southern Iowa. It seems now that we have enough information on ewe flock management that we can consider recommending feeder lamb production in southern Iowa. Lambs have been produced in this area for the fall market, but the emphasis has not been on feeder lambs. Combining spring lamb production with a feeder lamb production would give a strong emphasis on sheep production. The farmer producing feeder lambs would have the alternative of fattening them. Feeder lamb production also has the attractiveness of requiring less grain than spring lamb production. With proper disease control and the supply of western ewes appearing to become short in supply, the ewe lambs could serve as a source of ewe replacement for areas further east in the spring lamb production. This type of production seems to be the most attractive for the farmer who can improve his pastures, and insure proper nutrition of the lamb during the summer period. However, it should be considered less attractive than the spring lamb production.

Swine Alternatives

Indications are that large commercial enterprises being set up will be difficult competition for the small operator. Two alternatives are suggested, as well as combinations of alternatives for the 10-county study area. One of these is feeder pig production. Here the capital requirements for feed purchased are low, relative to a complete finishing enterprise. The turnover is rapid, with income distributed over the year. The producer can use his better pastures as nearly the sole source of sow feed for about six months of the year. Silage can be also used as a supplementary winter feed.
For purposes of this report the more rigorous method (cost wise) of buying all his feed will be discussed. The reductions in costs where sows are pastured six months will be estimated.

Size of Enterprise

This will, of course, be determined by at least several of the following factors.

a. Managerial aptitude for large volume production
b. Capital availability
c. Feed availability
d. Desired income
e. Available labor

The figures given are conservative estimates of what a good manager could do—not necessarily what present hog producers are doing. It is assuming that these goals in production must be realized for the enterprise to be worthwhile. This will be a strict confinement of pigs to time of sale.

The goals it seems a producer must meet are as follows:

1. Litter Size - 8 salable pigs per sow
2. Weight - 52 pounds at 65 days
3. Efficiency - 350 pounds of feed per cwt. gain

If $5,000 income over feed, veterinary expenses and interest is to be realized, the operator must farrow about 40 sows four times a year. This can be scheduled to meet the housing requirements. If pigs are farrowed about January 1-5, March 15-20, June 1-5, and September 10-15, four farrowings can be accomplished per year by weaning at six weeks with immediate rebreeding. The pigs can be sold at 60-65 days weighing 52 pounds and the shed cleaned.

The only farrowing requiring much supplementary heat is the January farrowing.

Table 3 shows the feed, veterinary and housing cost per pig and per litter.

If the producer wished to feed out the winter crop of pigs for the high summer market, this could be done as a sub-alternative. This is shown in table 4.

Finishing

It is suggested that the producer consider finishing only those pigs which could be marketed on the seasonally high market. In 1958 summer farrowings brought $12 less per pig than in January, 1959. Some of the demand for feeder
Table 3. Costs and Income for Feeder Pig Enterprise

<table>
<thead>
<tr>
<th>Input:</th>
<th>Per Pig</th>
<th>Per Litter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sow Feed</td>
<td>$5.50</td>
<td>$44.00</td>
</tr>
<tr>
<td>Pig Feed</td>
<td>1.92</td>
<td>15.36</td>
</tr>
<tr>
<td>Boars</td>
<td>.25</td>
<td>2.00</td>
</tr>
<tr>
<td>Veterinary Expenses</td>
<td>1.25</td>
<td>10.00</td>
</tr>
<tr>
<td>Housing (including interest)</td>
<td>.40</td>
<td>3.20</td>
</tr>
<tr>
<td>Interest on Feed</td>
<td>.28</td>
<td>2.26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$9.60</strong></td>
<td><strong>$76.82</strong></td>
</tr>
</tbody>
</table>

Income:

- **160 litters of 8 pigs @ 1 3/4 times $15.00 cwt. and weighing 52 pounds**  
  - **$13.65**  
  - **$109.20**
- **Boars (2) @ $50.00**  
  - .06  
  - .48

**Total**  
- **$13.71**  
- **$109.68**

Income over cost  
- 4.11  
- 32.88

For 160 litters  
- $5,260.80

Assumptions:  
1. That the average price of market hogs will be $15.00.  
2. That all feed is purchased.  
3. That the goals of 8 pigs per litter averaging 52 pounds at 65 days are met.  
4. Feed costs can be lowered, commensurate with the farm's ability to produce the needed feed for the sow herd.  
5. That the cost of the replacement sow will be obtained from her sale.

Pigs farrowed in the other seasons will be for use by grain farmers who do not farrow at all. The great difference in marketing margin between July and January is an inducement for the producer to finish out the winter farrowed pigs. Housing for finishing can be large pens, either on or off concrete. The producer might utilize wooded areas also for housing if he did not wish to go to concrete. Table 4 shows the economics of this type of production, based on an average price of $19.00 cwt. for January farrowed pigs. Winter farrowed pigs, under present market cycles, will bring from $3.00 to $4.00 cwt. more than the average, where they are included, and from $4.00 to $6.00 cwt. more than the average of the other three farrowings. Considering the fact that
1. The facilities can be used for feeder pig production
2. That this producer must finance his finishing operation, it is considered that he would usually be foolish to feed out his whole crop of 1,280 pigs. He might find himself at the favorable spot in the hog cycle where he would want to do it, but then he would have to make strong financial arrangements.

Table 4. Finishing Enterprise with the January Farrowed Feeder Pigs

<table>
<thead>
<tr>
<th>Input:</th>
<th>Per Pig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeder pig value (52 pounds) 320 pigs</td>
<td>$13.65 (ref. table 1) This is what they should be worth if sold as feeders.</td>
</tr>
<tr>
<td>Feed cost (525 pounds complete feed @ $3.00 cwt. to put on 150 pounds net)</td>
<td>15.75</td>
</tr>
<tr>
<td>Interest on feed</td>
<td>.32</td>
</tr>
<tr>
<td>Veterinary Expenses (They will have been treated, vaccinated, etc., the cost of which is in the feeder pig expense)</td>
<td>None</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$29.72</strong></td>
</tr>
</tbody>
</table>

For 315 pigs $9,151.80

Income:

| 310 pigs, weighing 202 net, @ $19.00 cwt. when sold in June and early July | $38.38   |
| Total                                                                     | $11,897.80 |

Income over cost $2,746.00

Note: Approximately 150 tons of manure will be produced, which should have some value in use on the cropland.

Assumptions: 1. Three percent death loss. If this is distributed, then the feed cost will be figured on half the death loss, or the average number of pigs on hand throughout the period: 315.
2. Feed cost at 3 cents per pound. It should not cost more, and might cost less.
3. Efficiency of 350 pounds feed cwt. gain.
4. Nineteen dollars average price at this marketing. Further shifts to multiple farrowing may change the advantage summer marketings have, but great shifts are not in sight.
Summary of Swine Alternatives

It would appear that this area might be potentially more prosperous by employing more intense hog raising. Several factors must be considered, however:

1. Interest in management.
   This enterprise will require a high level of management.
2. Hog prices.

If the area, and others like it farther south, should markedly expand production, prices might be far lower than those estimated here.

Coordination of Alternatives

The three types of animals have been treated thus far as separate enterprises. This is not altogether realistic. The rough pasture land has value only as pasture for cattle or sheep. (It might have recreational value).

If we consider a typical farm in the area, the land would be distributed somewhat as follows:

<table>
<thead>
<tr>
<th>Rough Pasture</th>
<th>120 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>30 acres</td>
</tr>
<tr>
<td>Oat</td>
<td>30 acres</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>60 acres</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>240 acres</strong></td>
</tr>
</tbody>
</table>

Assuming carrying capacity of the rough pasture as three acres per cow, approximately 40 cows could be maintained. Half the corn could be ensiled for use of the cow herd and for winter sow feed. Twenty acres of the alfalfa could be pastured by the sow herd and the other half made into hay. Using a small daily feed of two pounds oats per sow, this pasture could be the sole feed for the gestating sow herd for six months. This would provide roughly $1,300 saving in sow feed, and thus provide a high rate of income from the land. The rest of the alfalfa would serve as hay for wintering the cows and possibly for wintering calves, if the price situation warranted.

The cow enterprise would thus fit nicely with the intensified swine enterprise, insofar as land use and feed supplies are concerned. In considering the use of beef cattle to make use of the permanent pasture, the carrying capacity of this farm would be about 40 cows. The rotation would permit additional pasture at certain times during the year. The oat crop would furnish silage or feed for the cow herd during winter. This leaves the hay and corn as possible crops to feed to the calves. If about 10 acres of the corn was made into
silage, the feeder calves could be wintered until March and sold on the high market. However, it seems that it would be better to utilize the hay as the wintering feed which would furnish ample quantity of feed for the calves. This would permit the harvesting of the corn as grain. This corn could then be fed to the calves from 40 cows. This offers an intensive program for the farmer and keeps his cattle facilities in use the major part of the year. By assuming that he would sell slaughter animal averaging 900 pounds and receive present day prices for these animals, the returns from 40 cows would give the farmer an income of better than $3,000.

The returns from the production of milk fat calves would be slightly less than the above situation if the animals were fed for about a 90-day period following weaning. This type of production would utilize more of the rotation pasture and make economical use of corn silage as the main part of the ration for the 90 days the calves are fed. The feeding of corn would be necessary during this period.

The farm would have the carrying capacity of about 200 ewes. The ewes and lambs would have the capacity to utilize the following feeds: (1) the permanent pasture and some aftermath grazing, (2) the hay produced from the rotation and (3) about 500 bushels of the corn. The operator should sell about 250 to 260 lambs from these ewes. The net return should be between $2,000 and $2,500. In addition to this, the income from about 1,000 bushels of corn and the oats produced from the 30 acres in rotation would be received. If capital were available, wintering of feeder calves would fit into this situation and utilize the oat crop in the form of silage.