Labor Requirements for Market Swine Produced in Hoop Structures

Michael D. Duffy, professor, Department of Economics, and Mark Honeyman, associate professor, Department of Animal Science

ASL-R1685

Summary and Implications

This article reports on a study examining the amount of labor used in hoop structures for finishing market hogs. The labor estimates were obtained from farmers who finish hogs in such facilities. The results show that labor use is not substantially different from confinement facilities. Areas for consideration also are identified in this article.

Introduction

Labor requirements in alternative swine systems vary in quality and quantity. Determining the quality of the labor and the environment in which it is performed is a difficult task and is, to a degree, subjective. The amount of time spent in the environment, however, is more easily measured.

This article reports on a study designed to determine the amount of labor needed in a hoop structure. Hoops are deep-bedded tentlike structures used primarily to finish pigs. A recent report by the Midwest Plan Service (AED-41) provides a complete description of hoop structures.

As noted in the Midwest Plan Service report (p. 17), "Hoop structures can be used successfully to finish pigs, but producers need to be aware of the advantages and disadvantages of this type of housing." Extra labor requirements are often considered a disadvantage of using hoop structures. The Midwest Plan Service report assumed that labor use per pig in a hoop would be almost double (.21 versus .4 h) than in a conventional (confinement) operation with slotted floors and liquid manure.

Wide variations in labor use estimates for pig production exist in the literature. Labor times will vary considerably among systems, among producers, and among the estimates for several reasons. Although estimates vary the actual proportion of labor in the costs of finishing pigs is small.

The Iowa State University Livestock Budgets estimate that it takes .5 h to finish a feeder pig, representing 4% of the cash costs of production. The Midwest Plan Service estimate of .21 h per pig in confinement represented just 2% of the total operating costs. The estimate for hoop labor was .4 h per pig. This was 3% of the hoop total operating costs.

Although the labor use is low and is only a small portion of the total costs, some individuals resist hoops based on exaggerated labor requirements. This probably stems from a fear of the unknown or a fear of change.

Materials and Methods

Therefore, a project to examine the amount of labor required by farmers using hoop structures for feeding market pigs was conducted. Nine farmers in the Practical Farmers of Iowa group and two farmers working on ISU research farms with hoop structures were asked to track the time they spent as labor in their hoop operations.

Each farmer was given a time sheet. The farmers were asked to note the time in and time out for seven categories of labor related to hog production in hoops.

All of the farmers reported finished market pigs in hoops. Three of the farmers did not return the sheets or did not return complete sheets. The following results are for 11 hoop structures from eight farmers starting in the summer of 1998.

Before discussing the results, some caveats should be noted. In spite of careful planning in drawing up the survey form, some of the respondents were confused about what to include and what not to include on the time sheet. Additionally, each farm had a slightly different set-up, which made direct comparison difficult.

Feeding time was one of the areas where there was difficulty in making comparisons. Some of the farmers did their own feed grinding and mixing, whereas others had premixed feed delivered directly to the farm. Including the time spent on grinding-mixing changes the time requirements.

Another area of uncertainty was bedding. There was some confusion about whether to include the time that it takes to bale the corn stalks or bedding material.

Finally, cleaning was another area where the time reported varied depending on whether the cleaning included spreading the bedding and how far the material had to be hauled. It was agreed that cleaning time would include only the time needed to get the material out of the hoop.

Some of these issues were not been adequately addressed prior to the start of the project. Others varied depending on the farm, the farmer, and the purpose of the time estimate. The intention of this study was that the feeding time would include only the time spent filling and adjusting the feeders and waterers. It was also intended that bedding time would include only the time needed to get the bedding material into the hoop.

These are areas that could be debated, but they create individual variations in time requirements that should be noted. Individual farmers will need to make adjustments for their own situations. It is interesting that in spite of differences in calculations and variations in individual categories, the total labor estimates obtained are similar among the producers.

Results and Discussion

Table 1 shows the breakdown of the labor spent by category on all of the time sheets that were received and analyzed. Three of the categories, cleaning, feeding, and sorting, each represented about the same amount of time and accounted for 60% of the total labor.

Table 2 shows the breakdown for a subset of the farmers: three producers and four hoops. These farmers' responses were summarized because of the clarity and completeness of their records. Their total labor is almost identical to the total labor for the whole group: (.25 versus .26 h per hog,) but the breakdown is somewhat different. In Table 2, sorting and cleaning are the two largest categories, accounting for more than 40% of the labor used.

The initial results of this study show that labor use in hoop structures is similar to that reported for confinements. Labor requirements will change depending on the farm layout and the farmers' equipment.

Bedding is a source of labor use that must be considered by the individual farmer. Corn stalks are used in many of the hoop structures in Iowa. Labor is needed to bale the stalks and make them available for use in the hoop. The types of labor activities included will influence the total amount of labor for swine in hoop structures.

The labor required for manure disposal varies considerably. The labor estimate in this study was the labor needed to remove the manure from the hoop. However, labor will be needed to spread the manure and this will vary depending on the type of system used by the farmer. Some farmers compost the manure, whereas others spread the manure directly on the field. These different practices will require varying amounts of labor.

Labor, regardless of the system, does not represent a significant portion of the cost for finishing pigs. The results presented herein show that although some differences exist between systems, those differences are not great. Farmers should evaluate their own individual circumstances, including labor availability and cost, when determining which swine finishing system is best for them.

Table 1. Labor requirements for finishing swine in hoop structures.*

	Hours Per Pig
Bedding	0.03
Checking	0.05
Cleaning	0.06
Feeding	0.03
Sorting	0.01
Vet/medicine	0.06
Other	0.01
Total	0.25

*Average for eight farmers with 11 hoop structures.

Table 2. Labor requirements for finishing swine in hoop structures.*

	Hours Per Pig
Bedding	0.04
Checking	0.05
Cleaning	0.05
Feeding	0.03
Sorting	0.02
Vet/medicine	0.05
Other	0.00
Total	0.26

*Average for three farmers with four hoop structures.

Acknowledgements

We gratefully acknowledge the record keeping of the cooperating producers, the coordination and inspiration of the Practical Farmers of Iowa and the support of the Leopold Center for Sustainable Agriculture.