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POULTRY LITTER CLEANOUT CONTRACTOR PRACTICES

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We sincerely appreciate the cooperation of the 45 participants who responded to our questionnaire. Twenty-four cleanout contractors took time to provide us with valuable information concerning their work as cleanout contractors. This involved reviewing personal work records, making calculations, answering the questions asked and returning the completed questionnaire. In addition, most cleanout contractors discussed their responses over the telephone. Their time and assistance is greatly appreciated.

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POULTRY LITTER CLEANOUT CONTRACTOR PRACTICES

This report presents the findings of a study of poultry litter cleanout contractors in Arkansas. The primary purpose of the study is to determine what cleanout contractors do with the litter they remove from poultry houses and to what extent they sell litter for uses other than applying to pastures. This is one in a series of reports describing different aspects of the market structure for poultry litter.

METHOD OF STUDY

The findings in this study are from two sources. One is from the responses to a questionnaire sent to cleanout contractors in Arkansas. The second source is from telephone interviews with cleanout contractors who provided us with a more in-depth understanding of cleanout contractor operations.

Questionnaires were sent to 155 cleanout contractors in July, 1993 with a postage paid envelope (see Appendix A.) Due to a poor response, there was a second mailing in August. Forty-five questionnaires were received, which is a 29 percent response. Of the questionnaires returned, only 24 were complete and from cleanout contractors who are still in business. The remaining questionnaires were from individuals who were previously thought to be cleanout contractors but were either retired, no longer in the business, or were not cleanout contractors. The information from the 24 respondents is summarized and analyzed by regions: Northwest, River Valley, Southwest and Eastern. Appendix B shows the number of responses by region.

Cleanout contractors were asked how much litter they removed per house in 1992 in six poultry type categories. Respondents could answer in tons per house or loads per house. They were also asked how many tons of litter are in each load. Ten respondents knew the average tons of litter removed per house in 1992. Eight cleanout contractors knew the average loads of litter removed per house and the approximate tons per load but did not answer the average tons per house. In these cases. the tons per load was multiplied by the average loads per house to get an approximate number of tons per house. In two cases the respondent knew a range of tons per house but did not answer the average tons per house. In these cases the midpoint of the range was assumed to be the average tons per house. Once these alterations were made, the 20 responses were used to determine the amount of litter removed by cleanout contractors. To get an approximate amount of litter removed by a typical cleanout contractor in one year, the person's average tons of litter removed per house was multiplied by the total number of cleanouts for each respondent in one year.

Telephone interviews were conducted with several cleanout contractors as a follow-up to the questionnaire. It was unclear whether or not we had obtained the correct number of cleanouts made by cleanout contractors in a year's time. Follow-up calls were necessary to determine if respondents answered the question in the correct way. This information was needed, along with the average amount removed per house, to determine the amount of litter removed by cleanout contractors in one year. Telephone conversations with several cleanout contractors were helpful in verifying the accuracy of their responses and in learning more about litter cleanout practices.

FINDINGS

Number of Growers

The responding cleanout contractors remove litter mostly for broiler growers. Some remove litter for growers of cornish hens, layer hens, breeder hens and turkeys (Table 1). The respondents indicated an average of 26 growers per cleanout contractor were serviced in 1992 with a range from 1 to 120 growers.

Table 1: NUMBER OF GROWERS SERVICED BY RESPONDENTS

	NUMBER OF GROWERS WHO UTILIZED SERVICE OF RESPONDENTS IN 1992	PERCENT OF TOTAL NUMBER OF GROWERS SERVICED
BROILER GROWERS	458	73%
CORNISH HEN GROWERS	3	
LAYER HEN GROWERS	39	6%
PULLET GROWERS	58	9%
BREEDER HEN GROWERS	43	7%
TURKEY GROWERS	30	5%

Variability of Litter Removal

Follow-up telephone interviews indicated that the frequency and extent of cleanout varies from grower to grower. One cleanout contractor said that some growers prefer to remove all litter or "clean to the floor" only once or twice per year while others prefer to clean to the floor between every grow-out. Still other growers rarely clean to the floor and instead have cleanout contractors remove only "caked" litter between every grow-out. According to cleanout contractors, the "caking-out" process involves the removal of the top layer of packed-down litter in strips of the floor mostly along water lines. The amount of litter removed when houses are caked-out is much less than a complete cleanout. The number of cleanouts for contractors who cake-out

between batches is greater than those who are doing only complete clean-outs or both cake-outs and complete cleanouts. Interviews indicate that the frequency of cleanout is dependent upon many factors including grower preference, cost of re-bedding, the market value of the litter removed and the cost of cleanout. Less new bedding is required on the poultry house floor between grow-outs when some litter remains from previous grow-outs.

Season of Cleanout

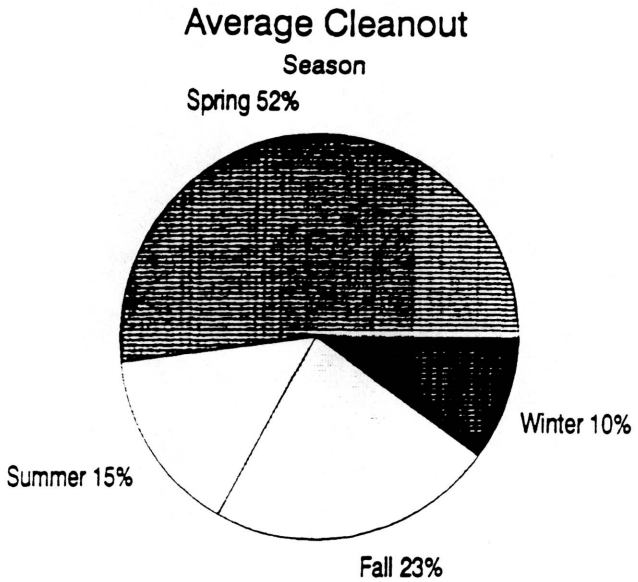
Cleanout contractors remove litter from poultry houses throughout the year, although the spring and fall are their busiest seasons. All cleanout contractors responding to our questionnaire remove litter from poultry houses in the spring, but only 71 remove litter in the winter (Table 2).

Table 2: WHEN CONTRACTORS REMOVE LITTER

	Spring	Summer	Fall	Winter
Respondents Clean Some Poultry Houses During This Season	100%	79%	96%	71%

Although most cleanout contractors remove litter in all seasons, the percentage of houses that they clean out differs among seasons (Figure 1). On average, the responding contractors clean 52 percent of houses in the spring, 15 percent in the summer, 23 percent of houses in the fall and 10 percent of houses in the winter.

Figure 1



Amount of Litter Removed

Cleanout contractors in our study handle an average of approximately 14,000 tons of litter per year. Table 3 gives the total tons of litter removed by 20 respondents. The amount of litter removed per year per respondent ranged from 760 to 92,950 tons, with a midpoint of 9,617 tons.

Table 3: LITTER REMOVED BY CLEANOUT CONTRACTORS

	AMOUNT OF LITTER REMOVED IN 1992
TOTAL TONS OF 20 RESPONDENTS	283,877
MEDIAN TONS PER RESPONDENT	9,617

Uses of Litter

Although most cleanout contractors spread the litter they remove on growers or other fields in the area, contractors also sell and store some of the litter they remove. Of the 24 respondents who indicated their uses of litter (Table 4), 92 percent spread on growers own fields. Seventy-five percent spread on other fields in the area and 54 percent sell the litter to be used as a fertilizer for pasture. Four cleanout contractors (17%) sell litter for cattle feed, and 13 percent sell to row crop farmers as a soil amendment.

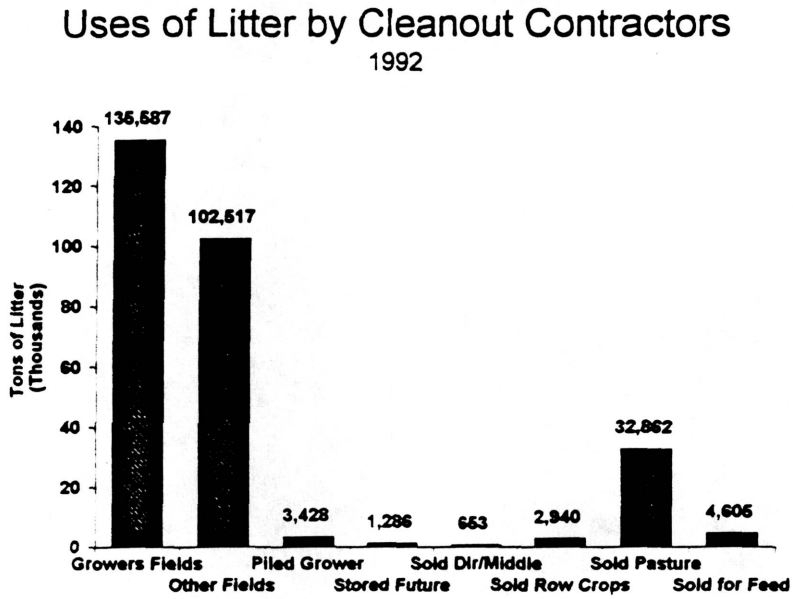
Table 4: USES OF LITTER

	NUMBER OF RESPONDENTS n=24
SPREAD ON GROWERS OWN FIELDS	22
SPREAD ON OTHER FIELDS IN AREA	18
PILED ON GROWER'S LAND	5
STORED FOR FUTURE USE	3
SOLD TO DEALERS/MIDDLEMEN	1
SOLD TO ROWCROP FARMERS AS SOIL AMENDMENT	3
SOLD TO BE USED AS FERTILIZER FOR PASTURE	13
SOLD AS A CATTLE FEED	4

Twenty of these also indicated the percentage of litter used for each purpose. The total amount of litter removed by the 20 respondents was 283,877 tons. Figure 2 illustrates the uses of the litter removed by cleanout contractors in 1992. Nearly half of all litter removed by responding cleanout contractors in 1992 was spread on the grower's fields. About 1/3 of litter was spread on other fields in the area. About 12 percent of litter was sold to farmers as a fertilizer/amendment for pasture. Smaller percentages of litter removed by the contractors was sold to farmers as cattle feed, piled on the grower's land, sold to dealers/middlemen or sold to farmers as a soil amendment for row crops.

The amount each cleanout contractor spread on grower's fields ranged from 179 tons to 35,321 tons. Those who spread litter on other fields in the area used from 233 to 55,770 tons for this purpose. Cleanout contractors who piled litter on the grower's land used a range of 261 tons to 1,859 tons each for this purpose. One contractor sold 653 tons of litter to a dealer or middleman. Contractors who reported selling litter to farmers as a soil amendment for row crops sold between 357 to 1,958 tons each. One half of the responding cleanout contractors sell litter to farmers as a fertilizer/amendment for pasture. The amount of litter used for this purpose ranges from 357 to 6,750 tons per contractor. The contractors who sold litter to farmers for cattle feed sold between 179 to 3,802 tons per contractor.

Figure 2



Regional Differences

The response of cleanout contractors by region is in proportion to the number of broilers grown in the regions. More broilers are grown in the Southwest and Northwest and these are the regions in which we received the most responses from cleanout contractors. Eight of the 24 responding cleanout contractors are from the Southwest, seven are from the Northwest region, five are from the River Valley region and three cleanout contractors are from the Eastern region. One cleanout contractor did not indicate an address, therefore, the region is unknown.

Although there were few responses, there appear to be differences in what the cleanout contractors do with the litter among the regions of the state (Figures 3-6). Further research is necessary to confirm these regional differences. The findings suggest that the percentage of litter spread on grower's fields is greatest in the Southwest region (71%), and least in the Northwest region where respondents spread about 1/4 of litter removed on grower's fields. The greatest number of uses of litter is found in the Eastern region, with the fewest number of uses found in the River Valley.

The River Valley respondents spread about half of their litter on other area fields. Northwest respondents used over 1/3 for this purpose as well as selling almost 1/4 of litter to farmers for pasture. The cleanout contractors in other regions used considerably less for this purpose.

Fourteen percent of the litter removed by the responding cleanout contractors in the Eastern region was sold to rowcrop farmers as a soil amendment. Northwest and

River Valley regions had no litter sold for this purpose. The Southwest region had one cleanout contractor who sold to row crop farmers, however, the amount sold for this purpose was less than one percent for the region.

The Northwest and Eastern regions had the greatest percentage of litter sold to farmers as a cattle feed.

In addition to regional differences in the uses of litter, the findings also suggest differences in time of cleanout among regions. The Northwest appears to have the largest percentage of houses cleaned in the spring season. The Southwest and River Valley regions also appear to have a large spring peak. The Eastern region, however, appears to have a more level distribution of litter removal throughout the year (Figure 7).

Figure 3

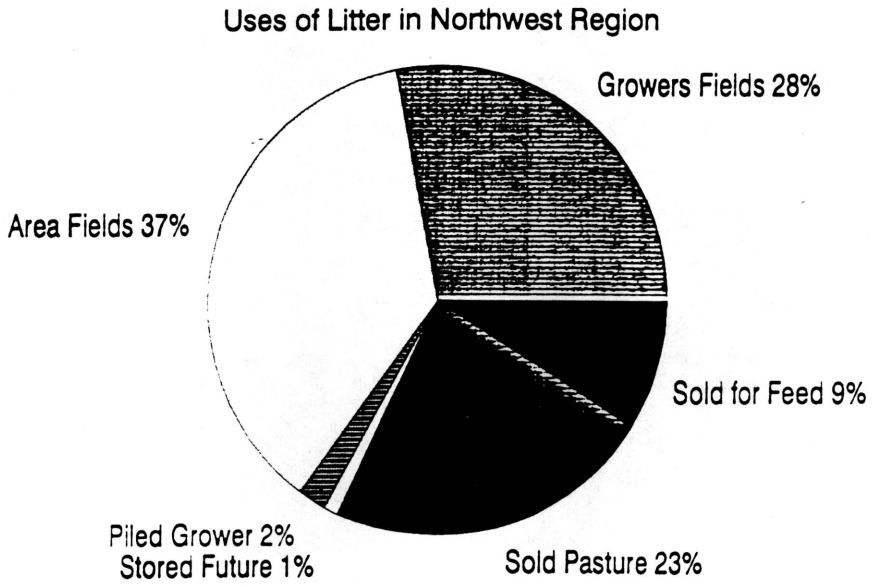


Figure 4

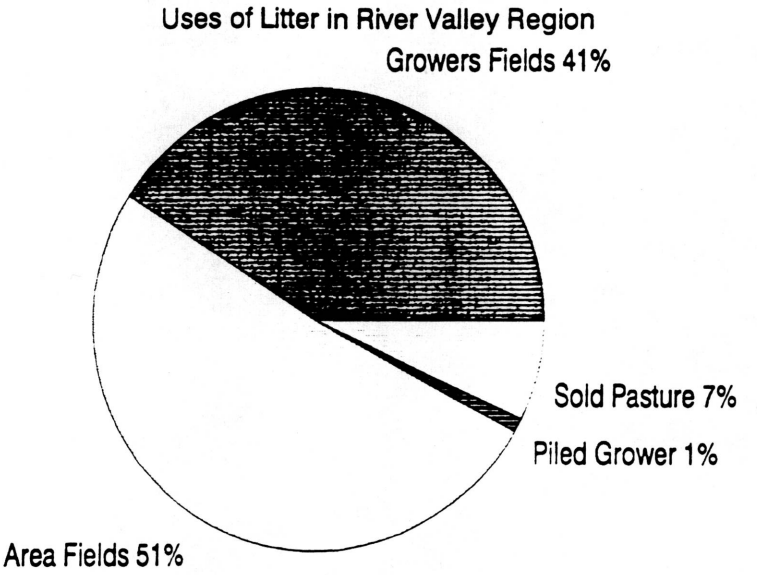


Figure 5

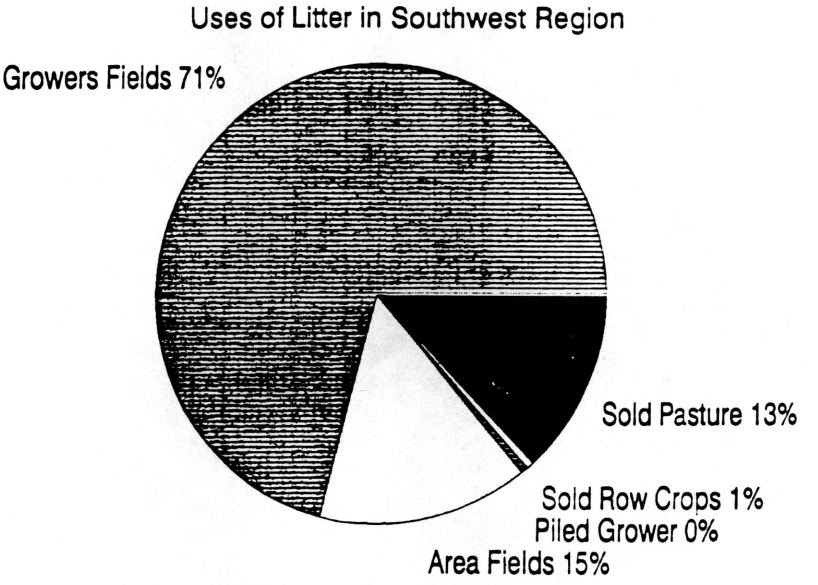


Figure 6

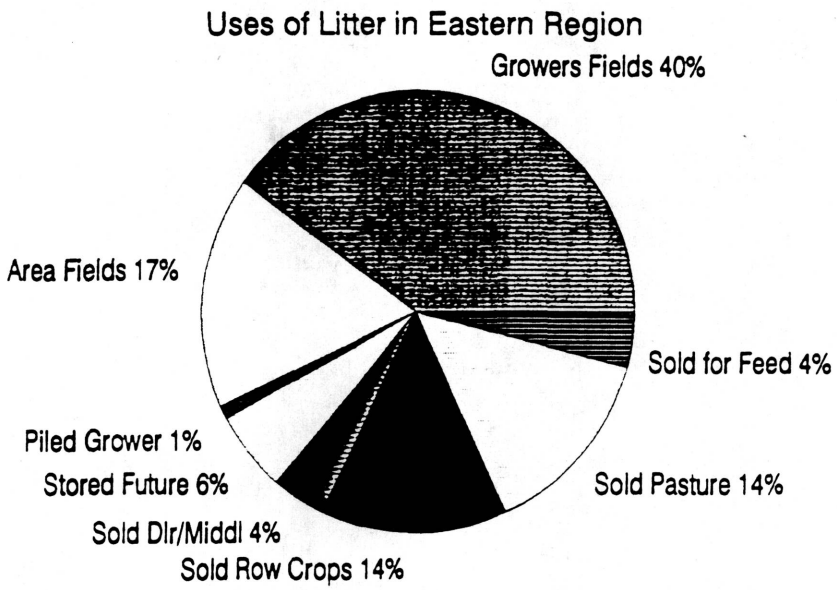
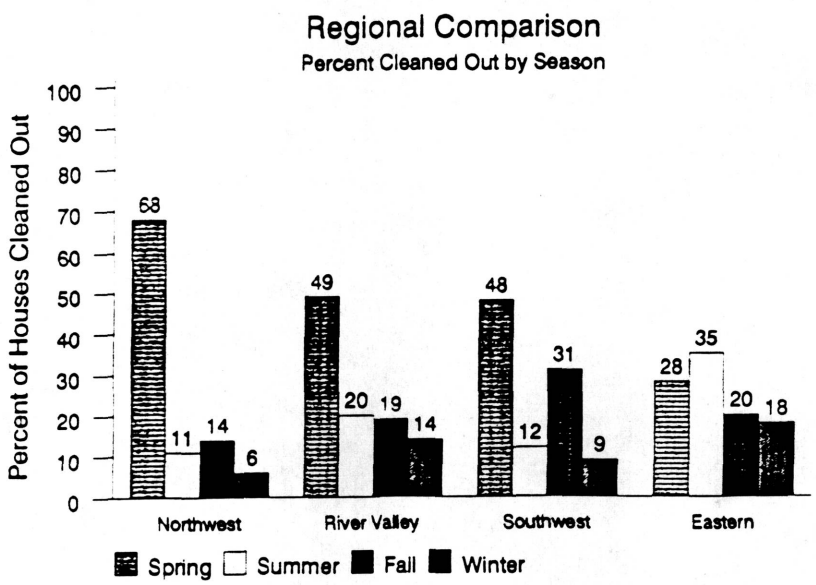


Figure 7



Cleanout Arrangements

The most common cleanout arrangements are spreading and buying. Ninety-two percent of respondents use spreading arrangements. In fact, several respondents use spreading arrangements entirely. Almost 2/3 of respondents use buying arrangements. Forty-two percent use hauling arrangements, and only 13 percent trade. An example of a trading arrangement is cleaning out houses in exchange for the litter.

On average, respondents use spreading arrangements 63 percent of the time, buying arrangements 19 percent of the time, hauling arrangements 14 percent of the time, and trade 4 percent of the time.

Table 4: CLEANOUT ARRANGEMENTS

	NUMBER OF RESPONDENTS WHO USE ARRANGEMENT n=24
SPREAD	22
BUY	15
HAULING ARRANGEMENT	10
TRADE	3
OTHER	0

SUMMARY

Although most cleanout contractors apply the litter they remove from poultry houses on grower or nearby pastureland, over half also buy and then resell the litter for a variety of uses. Most of those who purchase the litter sell it to others as a fertilizer for pastureland, although some sell the litter as cattle feed or as a soil amendment for row crops.

Similarly, most of the poultry litter (84%) removed from poultry houses by cleanout contractors is spread on grower or nearby pastureland, with an additional 12 percent sold for pasture. However, some of the litter (2%) is sold for use as a cattle feed. Approximately 1 percent of the poultry litter removed by cleanout contractors (2,940 tons reported) is sold to row crop farmers as a soil amendment. Another 1 percent (3,428 tons) is piled on the grower's land and smaller amounts are stored or sold to dealers or middlemen.

The cleanout practices and uses of poultry litter vary somewhat among the cleanout contractors responding to our survey by region. Those in the Northwest, Southwest and River Valley regions clean out a large portion of houses in the spring. The Eastern region, however, has a more equal distribution of houses cleaned out

throughout the year. In addition, litter from the Eastern region is used for more purposes than all other regions. Cleanout contractors in the Southwest region spread over 2/3 of their litter on the grower's fields, while only about 1/4 of litter removed in the Northwest region is spread on grower's fields. Fourteen percent of the litter removed by cleanout contractors in the Eastern region was sold to rowcrop farmers as a soil amendment while the other regions had little or no litter sold for this purpose.

In summary, most poultry litter cleanout contractors spread litter on pastureland, but a surprisingly large number also buy and then resell the litter for a variety of uses. As the markets for these other uses increase, the cleanout contractors will be in key positions to facilitate the movement of litter to its highest end use.

Appendix A

POULTRY LITTER UTILIZATION PROJECT

Questionnaire For Cleanout Contractors

1. When did you begin operating as a cleanout contractor? Year _____?

2. How many growers utilized your cleanout service in 1992? (Please indicate the number of growers of each type.)

   Broiler growers_____ Cornish Hen growers_____ Layer growers_____
   Pullet growers _____ Breeder Hen growers_____ Turkey growers_____

3. How many houses did you cleanout in 1992? (Please indicate number of houses of each type.)

   Broiler houses_____ Cornish Hen houses_____ Layer houses _____
   Pullet houses _____ Breeder Hen houses_____ Turkey houses_____

4. How much litter did you clean out per house in 1992? (Please answer in either tons per house or truck loads per house.)

POULTRY TYPE	AMOUNT OF LITTER	AVERAGE	RANGE Least	RANGE Most
Broilers	Tons per House			
	Loads per House			
Cornish Hens	Tons per House			
	Loads per House			
Layer Hens	Tons per House			
	Loads per House			
Pullets	Tons per House			
	Loads per House			
Breeder Hens	Tons per House			
	Loads per House			
Turkeys	Tons per House			
	Loads per House			

4a. If you answered question 4 in loads per house, how many tons are in each load?

Tons per load? _____

5. What time of year did you clean out the houses in 1992? (Please check each season in which you clean houses and indicate the percentage of houses cleaned in each season.)

____ Winter _____% _____ Summer ____%

____ Spring _____% _____ Fall _____%

6. What did you do with the litter taken from the houses in 1992? (Check all that apply and indicate percentage of each category.)

____ Spread on grower's fields ..... _____%

____ Spread on other fields in area ..... _____%

____ Piled on grower's land ..... _____%

____ Stored for future use ..... _____%

____ Sold to dealers/middlemen ..... _____%

____ Sold to farmers as soil amendment for row crops ..... _____%

____ Sold to farmers as fertilizer/amendment for pasture ..... _____%

____ Sold to farmers for cattle feed ..... _____%

____ Other (please indicate)_____ ..... _____%

7. What are the different cleanout arrangements you use? (Check all that apply and indicate percentage of each category.)

____ Spread ..... _____%

____ Buy ..... _____%

____ Hauling Arrangement ..... _____%

____ Trade ..... _____%

____ Other (please specify) ..... _____%

Although we would like you to provide us with your name, address, and telephone number so we could contact you for additional insights, it is not required.

Your Name: _____ Telephone: _____

Address: _____

City/State: _____ Zip Code: _____

POULTRY REGIONS IN ARKANSAS