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Hog Production
and
Marketing Activities, 1994
of Medium and/or
Very Large U.S. Hog Producers

by
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Summary

The percentages of medium size producers engaging in various production activities in 1994 were: farrowing pigs 86, finishing 95, selling seedstock 14, selling commercial feed 7, mixing and grinding own feed 87, and financing some feed with feed dealer 12. About 65% of hogs are fed self-produced grain--the larger the producer the smaller the proportion of such grain. Of the 12% of producers financing some feed at feed dealers, about 60% of their feed purchases were financed. Those medium producers that processed their own feed ground an average of 94% of their needs, while very large producers not also feed companies processed about 76%.

Selling hogs at today's market price was the pricing method used for 74% of the medium producers' hogs in 1994 but for only 10% of the VL producers' hogs. Usage of formula pricing to sell MH rose from 10% of the size A's hogs to 31% of size E's to 78% of the VL producers' hogs. Contractors claimed to have sold 84% of their market hogs on some sort of carcass merit basis in 1994 while non-contractors claimed 60%. The percentage sold on carcass merit was strongly and positively related to size of producer--49% for size A, 72% for size E and 84% for the very large group. About 27% of medium size producers reported receiving direct advice from packers to improve the quality of their seedstock.

Introduction

This report is a supplement to "1994 Marketings of the Nation's Medium and Very Large Producers of Hog," University of Missouri Agricultural Economics Report 1995-7. That report summarizes information on the changing structure of U.S. hog production, defines terms, and describes the two studies behind this report. Briefly, a large sampling study of the subscriber population of Pork 95 Magazine in early 1995 covered medium size producers--those operations marketing 1,000 to 49,999 pigs/hogs (HP) in 1993/94. At the same time, 67 very large producers (each marketing 50,000 plus head) were identified in the nation and 66 of them responded to a questionnaire similar but shorter than the one mailed to medium producers. Smaller producers that make up as many as 80% of total producers but market less than 20% of the nation's slaughter hogs were not covered. All activities reported here include the medium size producers and in a few cases cover the very large (VL) as well.

Producer Activities

Medium producers were asked whether they farrowed pigs, finished hogs, sold seedstock and sold commercial feed. Almost everyone (95.1%) finished, most (85.7%) farrowed, a few (14.1%) sold some seedstock (SS), and even fewer (6.8%) sold commercial feed (CF). Contractors were a trifle less likely than non-contractors to farrow, a trifle more likely to finish and much more likely to sell seedstock and commercial feed (Table 1).

Size of operation was not related systematically to percentage finishing--virtually everyone of every size finishes at least some hogs. (Medium size groups and their identifying letters are A-annual marketings of 1,000-1,999 head of hogs/pigs, B-2,000-2,999, C-3,000-4,999, D-5,000-9,999, and E-10,000-49,999). Size was positively related to the percentage farrowing for both contractors and non-contractors (Table 2). Size was positively related to the percentage selling seedstock for non-contractors only. Those contractors selling commercial feed tended to be larger producers, but there was no size relation for non-contractors. Comparing the very large producers to size E supports a positive size effect for all four activities. (There were too few non-contractors among the VL producers to justify separate percentages for contractors and non-contractors.)

The S. Central had the highest association of commercial feed sales and hog production at 10.7% while the West had the lowest at 2.0%. The East North Central (ENC) at 86.2% had the highest percentage of producers farrowing pigs while the E. Coast at 78.1 and the S. Central at 81.9 had the lowest percentages. The ENC at 95.8 had the highest percentage finishing hogs with the West lowest at 90.4. The S. Central at 23.5% and the West at 23.2% had the highest producer participation in selling seedstock while the West North Central (WNC) was lowest at 13.4%.

The 1,934 medium producers (6.8% of the medium group) selling commercial feed marketed 4,743,000 market hogs (MH) in 1994 or 7.5% of the total marketings of medium producers. Those selling commercial feed had a similar profit-loss pattern in their hog operations in 1994 to those not selling feed. Those contractors selling commercial feed relied more on growers for finishing--82% by growers and 18% in own facilities--than did those many more contractors that did not sell commercial feed--64% by growers and 36% in own facilities. (Note that these percentages are based on incomplete data because many contractors did not provide data on grower production versus production in their own facilities.)

Hog Feed Produced by Medium Producers

Medium producers were asked: what % of your grain for hog feed do you produce? Nearly 74% was the average for the non-contractors and 53% for the contractors (Table 3). The contractor percentage was lower than non-contractors in every size group and every region. The percentage of feed needs produced was strongly inverse to size, so the proportion of hogs fed on self-produced grain was about 65% compared to the unweighted average of 72.6% shown for all producers in Table 3.

The two North Central regions, containing the Corn Belt and the greater percentages of smaller producers, had the highest average percentages of feed needs produced by hog producers. The percentage averages were: ENC 75.7, WNC 75.2 E.Coast 52.5, S. Central 34.8, and West 38.5. There was no systematic relation between the minimum level of hog prices projected by producers and the percentage of feed needs self-produced.

Feed Milled at Operation by Medium and VL Producers

Medium and VL producers were asked: what percentage of your hog feed (on a weight basis) do you mix and grind in this operation? Of those replying, 13% of medium producers mixed and ground no feed in their operations. Those producers that did grind feed processed about 94% of their needs, on average. The average reply, including those responding zero percent, was 82% with non-contractors higher at 85% and contractors lower at 77%. We estimate that about 80% of this medium group's MH in 1994 were fed by feed ground in the operation. This 80% of MH is a little lower than the average producer reply of 82% because there was some negative association between the percentage ground and the size of non-contractor operations (Table 4). However, note that the percentage for the contractors was highest in the largest group E.

There was a small positive association of the percentage feed processed in the operation and those reporting profits in 1994. That is, the unweighted average percentage of feed ground was 85% for the group claiming profits and 77% for those reporting losses (Table 5). It is also shown in Table 5 that the newest operations ground a much lower percentage of feed than the older ones.

Interpretation of the replies of very large producers is complicated by the fact that several are feed dealers or large feed manufacturers. Several,

but not all of the feed related producers supply 100% of their needs from their own mills although not necessarily from mills located at the hog operations. Hence, the data reported are for those VL producers that were not feed companies. These show that 76% of the hog/pigs marketed in 1994 by VL producers were fed with feed mixed and ground at the operation rather than bought commercially. The packer integrated firms ground feed for 84% of their hogs/pigs while the non-integrated operations ground for 74% of their HP. Those VL firms engaged in contract production processed feed in their operations for 74% of their HP while the non-contractors ground for 86%. The big difference was between contractors and non-contractors in the super size group (50,000 to 499,999 head) where contractors ground feed for only 43% of their HP and non-contractors processed for 81%. The mega producers (500,000 up) ground feed in their own operations to cover 95% of their HP marketed while the super size producers processed for only 54%. Older (production begun before 1980) VL operations ground feed for 81% of their HP compared to 69% for the newer operations.

Feed Purchases Financed by Feed Company

Medium producers were asked: of the feed or supplements that you purchase what % is financed by the feed dealer or manufacturer? There was no room in the questionnaire to give a time dimension to "financed" so some producers with accounts paid monthly may have considered that to be financed. Consequently, the data are probably higher than those receiving longer time finance. Twelve percent of the respondents used such financing. The average usage (for all respondents) was 7% for non-contractors and 10 percent for contractors. The percentage of total hog rations financed would be much lower since 80% of hog feed (by weight but less by value) is still home grown. If we recompute the mean percentages of purchased feed for the 12% of producers that used feed company financing, the means are naturally much larger than those for all respondents. The average user of feed company finance used it for 60% of his feed purchases (Table 6). On this basis of intensity of use, there was no average difference between contractors and non-contractors. The percentage intensity of usage fell as size of contractors rose, while it peaked at mid-size for non-contractors (table 6).

The average percentage of purchased feed financed by feed companies was 9% in the S. Central, 8% West and ENC, 7% WNC and 5% E. Coast. There was a negative association between profits and the percentage financed. Those reporting profits in 1994 from their hog operations financed 5% of their feed purchases, those reporting breakeven averaged 6%, and those reporting losses, on average, financed 12% of feed purchases.

Contract Production

Contract production is an important and growing activity. Its relation to structural change is discussed in the major report cited in the Introduction. Moreover, many further details are presented in "Contractors, Growers and Contract Production" University of Missouri Agricultural Economics Report 1995-6.

Producer Networks

The cooperative working together of hog producers and, sometimes, other agencies is an important and growing activity. Because of its structural significance, it is discussed in the major report cited in the Introduction.

Marketing Activities

The surveys of both the medium and very large producers included information about methods of selling market hogs including the proportions sold on carcass merit. Additionally, the medium producers answered a question about any direct encouragement by a packer to improve their seedstock.

Selling Market Hogs

The traditional method of selling market hogs on the spot market is gradually being replaced by various forms of prior agreements. By spot market, we mean taking hogs to market (public market, buying point or packer dock) and receiving the market price that day (for that particular weight and quality range). However the spot market was, in 1994, still the most common method of marketing for medium producers with nearly 3/4 of their slaughter hogs sold in that fashion. The next most popular method--17%--was some sort of formula contract tied to reported prices at some designated market such as IA-MN. About 3% were sold on a cash contract or other price that had been fixed by prior agreement (Table 7).

An extremely important influence on choice of market method is the size of the producer's marketings. The percentage using the spot market

fell from 79% for both sizes A & B to 72% for size C, 65% for D and 55% for E (Table 7). The use of the spot market fell further to 23% of the super producers' hogs (marketings of 50,000 to 499,000 hogs and pigs) while no larger mega producer reported using it (Table 8). Thus, the usage of the spot market varies systematically from 79% for the small producers to zero for the largest ones. The two methods reported by the mega producers were formula pricing 88% and some form of internal pricing 12% that was reported under OTHR (Table 8) for some packer-integrated production. The super producers relied most on formula pricing--for 64% of their slaughter hog marketings; second for them was the spot market with 23% and the other 13% was distributed among several other methods (Table 8).

The low usage of spot markets by the super producers and zero usage by the mega producers raises a red flag for price discovery as the industry structure trends toward a larger size. If most everyone in the next century tries to free ride on the prices discovered by those using spot markets, those spot markets will lack the volume necessary to provide reliable price discovery.

Contractors above size B were a little more inclined than non-contractors to bypass spot markets. However, as already demonstrated, size of marketings was by far the most important force.

On a regional basis, the medium producers in the two N. Central regions made comparable use of the same pricing methods (Table 9). The West and S. Central showed the greatest differences in percentages from the WNC. The West, with lots of niche markets, had the lowest percentage using the spot markets. The S. Central had the highest percentage using a fixed price (Table 9).

Combining the two surveys indicates 46.2 million slaughter hogs in 1994 were marketed on the spot market (table 10, column 1). We then assumed the percentages of smaller producers (<1000 head marketed) by pricing method to be the same as in the Group A survey group and we estimated the numbers of those MH. Adding those two sets of numbers gives the second column in Table 10. That is, we roughly estimate that about 59 million hogs were sold on the spot market in 1994 by all US hog producers, while about 25 million were sold by formula price.

Carcass Merit

A surprising 73% of medium producers claimed to sell at least some slaughter hogs on carcass merit in 1994. While 72% of non-contractors reported such carcass merit sales, 91% of contractors reported them. In every region and in every size group, a higher percentage of contractors than non-contractors reported some carcass merit sales. Carcass merit selling was also related positively to size of operation with the percentage of producers rising from 68% for size A to 84% for size D and then dipping slightly to 82% for size E. Regional differences were also fairly large for the medium producers with the percentage in the WNC highest at 78, followed by the ENC at 71, East Coast at 56, S. Central at 53 and the West at 33% claiming some sales on carcass merit. The West has several niche marketers that may help to explain its trailing position.

Virtually all very large producers made some carcass merit sales in 1994 and most of them made a majority, or all, of their sales on carcass merit. Two super producers reported no sales on carcass merit and only seven others reported sales of less than 50% of their MH by carcass merit. Two vertically integrated packers made transfers to the slaughter plant rather than making sales.

It can be seen in Tables 11 & 12 that two-thirds of the survey groups' marketings in 1994 (52.9 million MH or 55% of national slaughter) were reported to be sold on carcass merit. Both size of operation and contractor status increased the proportions sold on carcass merit. If we apply the 48% of size A non-contractors (Table 11) to the estimated 16,669,000 hogs marketed by the smaller producers not surveyed and add the resulting 8,001,000 head to the 52,874,000, then about 60,875,000 slaughter hogs or 64% of all U.S. slaughter was sold on carcass merit in 1994. That represents a large growth from the 12.1% of hogs sold on carcass merit according to the 1989 Report of the Packers and Stockyards Administration, USDA. As both contract production and larger operations gain market share in the next decade, sales of MH on the basis of carcass merit will likely continue to rise.

Packers and Seedstock Quality

The medium producers were asked: within the last 3 years have you been directly encouraged by a packer to improve your seedstock? Respondents checked one of the following:

- (1) Yes, he told me to improve or else he would quit taking my hogs
- (2) Yes, he advised improvement

(3) Yes, he advised buying a specific seller's seedstock

(4) No.

The first reply was checked by 1% of respondents, the second by 21%, the third by 5% and the fourth by 73%. Thus, about 1/4 of medium producers report receiving recently from packers some sort of direct encouragement to improve their seedstock. There was a slight negative relation to size of producer; 28% of size A had received such advice compared to 21% of size E. A smaller proportion of non-contractors than of contractors had received such advice--26% versus 30%. Likewise, 37% of respondents in the S. Central region reported such advice compared to 26 or 27% in other regions.

TABLE 1

Percentages of Medium Producers Participating in Selected Activities by Contractor Status

Activity	All	Non-C	Contr.
Finished	95.1	91.3	95.7
Farrowed	85.7	85.8	82.9
Sold SS	14.1	13.6	21.9
Sold CF	6.8	6.6	9.9

TABLE 2

Percentages of Producers Doing Selected Activities by Size and Contractor Status

Activities	Size and Contractor Status, Medium Prod.						Very Large Producers
	A		C		E		
	Non-C	Cont	Non-C	Cont	Non-C	Cont	
Finished	94.6	96.4	96.2	100.0	92.3	94.1	100
Farrowed	84.4	68.8	88.3	77.2	97.0	87.5	100
Sold SS	11.9	18.6	15.6	14.3	21.1	18.0	34.8
Sold C.F.	6.3	7.2	7.2	8.2	6.1	14.6	18.2

TABLE 3

Average Percentages of Hog Feed Grain Self-Produced by Medium Producers, 1994, by Contractor Status and Size

Type	Size					
Producer	All	A	B	C	D	E
Non-Contractor	73.8	77.5	76.4	69.5	56.9	39.8
Contractor	52.9	71.1	52.7	52.8	54.8	27.9
Combined	72.6	77.3	75.2	68.2	56.5	36.5

TABLE 4

Mean Percentage of Feed Mixed and Ground in Medium Size Hog Operation, 1994, by Contractor Status and Size

Type	Size						
	Producer	All	A	B	C	D	E
Non-Contractor		83	86	82	78	78	66
Contractor		59	58	57	56	54	71
Combined		82	85	81	76	74	67

TABLE 5

Mean Percentage of Feed Mixed and Ground in Hog Operations, 1994, by Profit-Loss and Period Hog Operation Begun

Period Hog Operation Begun					
P&L	Before 1970	1970s	1980s	1990s	All
Profits	88	83	92	69	85
Breakeven	87	81	80	61	81
Losses	83	80	70	62	77
Combined	86	81	82	64	82

TABLE 6

Percentages of Feed Purchases Financed by Feed Companies for Those Medium Producers Using Such Financing, 1994, by Contractor Status and Size of Producer

Type	Size of Producers						
	Producer	A	B	C	D	E	All
Non-Contractor		61%	53%	70%	60%	59%	60%
Contractor		65	64	64	55	49	61
All		61	54	69	59	57	60

TABLE 7

Percentages of MH Sold in 1994 by Method of Pricing & Size of Medium Producers

Method	Size A	Size B	Size C	Size D	Size E	All Sizes
MarP	79%	79%	72%	65%	55%	71%
ForP	10	9	17	23	31	17
FIXP	3	2	4	3	5	3
SHRP	*	*	1	2	4	2
OTHP	8	9	5	6	5	7
Total	100	99	99	99	100	100

Notes:

Rounding sometimes causes totals of 99 rather than 100%.

* indicates <0.5%

MarP means spot market price

ForP means formula price set by previous agreement

FIXP means a fixed price set previous to delivery-- a cash contract

SHRP means a risk-sharing deal with the packer

OTHP means any other answer. For these sizes of producers, it was sometimes used by producers who said they sold part or all of their hogs on a carcass merit basis. It includes some who were confused by the choices given them in the questionnaire.

TABLE 8

Percentages of Market Hogs Sold by Method of pricing and Size of Very Large Producers in 1994

Method	Super Size	Mega Size	Total
MarP	23%	0%	10%
ForP	64	88	78
FIXP	3	0	1
SHRP	4	0	2
OTHP	5	12	9
Unreported	1	0	*
Total	100	100	100

Notes:

OTHP is mainly internal transfer pricing of vertically integrated packers.

TABLE 9

Percentages of MH Sold by Pricing Method by Regions, 1994, by Medium Size Producers

Methods	Regions				
	ENC	WNC	E. Coast	S. Cent	West
MarP	71%	72%	70%	61%	56%
ForP	17	16	23	28	23
FIXP	4	3	5	9	6
SHRP	*	2	0	1	*
OTHP	8	6	2	1	15

Note: * indicates <0.5. Columns do not always total 100 because of rounding.

TABLE 10

Numbers of Market Hogs by Pricing Methods Sold, 1994
(thousand head)

Method	Combined Groups	All U.S. Slaughter
MarP	46,244	59,412
ForP	23,430	25,097
FXP	2,356	2,856
SHRP	1,264	1,264
OTRP	5,754	7,088
Totals	79,048	95,717

Note: The percentages for small group A in Table 7 were applied to the estimated 16,669,000 hogs marketed by those producers too small to be included in this survey and those numbers were added to those in the first column to get the rough estimates for the Nation's slaughter hogs in 1994.

TABLE 11

Number of Medium and VL Producers' MH Sold on Carcass Merit by Size Producer and Contractor Status, 1994

Size Producers (thousand head MH)							
	A	B	C	D	E	VL	Total
Non-Contr.	7,872	7,069	6,500	5,980	5,127	1,100	33,648
Contractor	246	403	680	1,968	3,494	12,434	19,225
Total	8,118	7,472	7,181	7,948	8,621	13,534	52,874

Note: Rounding sometimes affects totals

TABLE 12

Percentage of Medium and VL Groups' MH Sales That Were Sold on Carcass Merit. 1994

Size Producers							
	A	B	C	D	E	VL	Total
Non-Contr.	48 %	64 %	64 %	66 %	64 %	66 %	60 %
Contractor	58	63	70	83	87	86	84
Total	49	64	64	69	72	84	67

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Summary

28,470 medium size producers (each marketed more than 999 but less than 50,000 head of hogs/pigs) marketed an estimated 63 million slaughter hogs in 1994; 66 still larger producers marketed another 16 million. This total of 79 million head indicates that about 10% of the nation's hog producers marketed 82.6% of the nation's commercial slaughter, compared to the same size groups marketing 68 million or 77.3% of slaughter in our last survey covering 1991.

The larger the producer the more likely that he uses contract production to produce some of his pigs, or to finish some of his hogs to market weight. The 66 very large producers had 10.4 million head of market hogs finished by growers and about 6.3 million head farrowed by growers. The medium size producers used growers to finish 5.4 million head and to farrow nearly 1 million head. Contractor-producers also produced many more pigs and hogs in their own facilities. In total, the 15.8 million contract finished market hogs accounted for 16.6 % of national slaughter. or 1 in every 6 hogs.

There is much interest (concern) about vertical integration--the control of hog production by packers or feed companies. The medium size producers reporting commercial feed sales--presumably dealers--marketed 4.7 million market hogs. The 66 very large producers included 13 producers making feed sales (ranging from national feed manufacturers to large feed dealers) and 6 pork packers. These 19 vertically integrated very large producers marketed 6.1 million market hogs in 1994. The combined groups marketed 10,870,000 market hogs or 11.4% of U. S. slaughter.

The rate of growth of marketings of hogs/pigs (HP) from 1993 to 1994 ranged from 4.2% for the smallest of 5 groups within the medium producers to 15.9% for the largest size medium group to 29.8% for the very large producers. Since national slaughter in 1994 was only 2.7% greater than in 1993, the far more rapid growth of these producers obviously replaced a large drop in marketings by smaller producers. HP marketings of contractors grew about 3 times as fast as those of non-contractors. Newer operations, on average, grew faster than older ones. Contractors projected much the same growth rate of HP marketings to 1995 that they had experienced in 1994, but non-contractors projected slower growth rates.

For the medium producers, 46% of the market hog marketings were associated with reported profits from their hog operations in 1994, although prices were very low in the last quarter; 24% were

associated with a breakeven and 30% with losses. For the very large producers, 56% of the market hog marketings were associated with reported profits, 2% with breakeven, and 42% with losses.

When asked the minimal level of hog prices at which they could survive for the next 5 years if corn prices averaged about \$2.17 in Central Illinois, medium producers marketing 55% of that group's MH indicated prices below \$40 while very large producers marketing 76% of that group's market hogs indicated prices below \$40. Those indicating prices below \$40 projected, on average, much faster growth in the future than those indicating the necessity of prices above \$40.

When asked which of a list of possible limitations on expansion applied to them, 58% of the medium producers picked possible inadequate profits, 38% picked personal considerations such as age and health, 31% selected environmental hassles, and smaller percentages checked other circumstances such as lack of credit or of competitive outlets for their hogs.

Producer networking has grown into an important set of arrangements involving about 9% of these producers. Because participation increases with size of operation, nearly 18% of the market hogs were marketed by network participants. Contractors were much more frequent networkers. Joint marketing and joint purchasing were the principal activities of medium participants while joint purchasing was the main activity of the very large producers.

Introduction

This information was acquired through the cooperation of thousands of busy hog producers in early 1995. The methods of collecting the data are covered in the appendix and in an associated publication, 1994 Marketings of the Nation's Very Large Producers of Hogs, which is available from Pork Magazine or from the authors at the University of Missouri. This report focuses on medium size producers who each marketed 1,000 to 49,999 head of hogs/pigs (HP) in 1994 and/or 1993, but it also includes comparisons of the very large (VL) producers who each marketed more than 50,000 HP in 1994. Results for the medium size producers are estimates based upon a large sample of the subscriber lists of Pork Magazine; technically, these results apply to the population of the magazine's subscribers which is thought to approximate the nation's population of hog producers but is not identical to it. Results for the VL producers are based upon a nearly complete census.

Marketings by Size and Location of Producers

While we focus mainly upon slaughter hogs that we refer to as market hogs—and use the abbreviation MH—we collected some data about feeder pigs (FP), and seedstock (SS) and aggregated the three groups into Hogs/Pigs (HP).

The 28,470 medium producers marketed nearly 63 million MH or 65.8% of national commercial slaughter in 1994 while the 66 VL producers added another 16 million (Table 1). These 79 million MH constituting 82.6% of national slaughter compare to 68 million MH constituting 77.3% of national slaughter marketed by the same size grouping in 1991 (our previous survey reported in "Structure of U. S. Hog Production: A 1992 Survey," University of Missouri Ag. Econ. Report 1992-3). The VL producers focused more on MH—91% of their HP marketings were MH while only 80% of the medium producers HP were MH. The medium producers marketed 78.4 million HP while the 66 VL producers added another 17.6 million HP (Table 1).

Most of these medium producers finished their hogs in the West North Central (WNC) and East North Central (ENC) regions (Table 2). Perhaps the magazine located in Kansas City has better coverage there than in other regions, so these regional totals may not represent accurately the national population. Note that the WNC and ENC have larger shares of the smaller sizes A and B than of the larger sizes D and E (Table 2).

The VL producers are distributed so much differently than the medium producers that a different regional division was used. Slightly more than one-half (8,246,000 MH) were finished in North Carolina and Virginia, with 4,803,000 finished in the combined North Central and 3,005,000 in the rest of the nation.

Contract Production

Contract production, a practice in which a grower in his own facilities provides, for a fee, the day to day care for pigs/hogs owned by a contractor, has been around for 40 years, but has grown considerably in the past decade. Most contractors produce hogs in their own facilities as well as in growers' facilities. Consequently, the number of hogs finished by contractors is much larger than the number finished through contract production. In appraising the extent and significance of contracting, it is important to distinguish between those two sets of numbers.

Contractors are found in all size groups, but their significance is highly related to size. Less than 3% of the MH marketings in the small size

group A were marketed by contractors in 1994 contrasted to nearly 90% of the MH marketings of the VL group (Table 3).

More slaughter hogs were marketed in 1994 by 54 VL producer-contractors than by the 1,689 medium producer-contractors (Table 3). The 22.8 million hogs marketed by these 1,743 contractors accounted for 23.8% of national commercial slaughter in 1994. However, this percentage overstates the importance of contract production because most of these contractors produced many of these hogs in their own facilities, just as non-contractors did. Contract production is measured by the 15.8 million MH that were finished by growers and the 7.3 million pigs farrowed by growers (Table 3), which was 7.2% of the U. S. pig crop. The 15.8 million finished by growers was 16.6% of national slaughter; that is an impressive proportion of 1 in 6 MH that were contract finished, but it is much less than the nearly 1 in 4 sold by contractors.

Numbers of MH marketed by medium contractors were rather similar on a relative basis by regions. Of the 8,345,000 MH marketed by contractors in 1994, the WNC contractors accounted for 5,864,000 head or 15.0% of the region's total MH marketings; the ENC contractors accounted for 1,861,000 head or 10.6% of that region's total MH marketings; the E. Coast contractors marketed 223,000 head or 13.1% of that region's total MH marketings; and the RON contractors marketed 485,000 head or 10.3% of that region's total MH marketings.

For the VL producers, contractors were most important in the NC-VA region where contractors marketed 8,241,000 head or 99.9% of the group's MH, were important in the NCR where they marketed 3,946,000 head or 82.2% of the group's MH, and were least important in the RON where they marketed 2,202,000 MH or 73.3% of the group's MH.

Medium contractors in the WNC relied proportionately more on growers for farrowing than was true for contractors in other regions. However, contractors' pigs farrowed by growers as a percentage of all contractors' pigs farrowed was a small number everywhere, varying from 14.6% in the WNC region to 6.1% in the RON to 5.1% in the ENC. Medium contractors relied on growers much more for finishing. The percentages of contractor MH that were finished by growers ranged regionally from 68% in the WNC to 62% in the ENC to 58% in the RON.

VL contractors farrowed 9,470,000 pigs in the NC-VA area of which 3,550,000 or 38% were farrowed through their growers; they farrowed 5,421,000 pigs in 1994 in the NCR of which 1,417,000 or 26% were farrowed through their growers, and they farrowed 3,099,000 in the RON of which 1,376,000 or 44% were by their growers. VL contractors in 1994 finished and marketed 8,246,000 MH of which 6,424,000 or 78% were finished by their growers; they marketed 4,803,000 MH in NCR of which 2,139,000 head or 54% were finished by their growers; and they marketed 3,005,000 MH in the RON of which 1,843,000 head or 84% were finished by their growers.

Vertical Integration

How many feed companies or feed dealers are vertically integrated into hog production either by producing in their own facilities or through growers? We cannot provide those numbers, but 1,933 medium producers told us that they do sell commercial feed. That was a surprisingly high 6.8% of the medium producers, and the percentage rose slightly with size of producer. Those producers making commercial feed sales reported MH marketings of 4,742,000 MH or 7.5% of the medium group's total MH marketings. Those producers reporting commercial feed sales were more likely to be contractors and, as contractors, they relied more heavily on growers for finishing than did producers that did not report any commercial feed sales. The 66 VL producers included 13 producers with commercial feed sales as well as 6 packers marketing a total of 6,128,000 MH in 1994. Thus, it appears that in the medium and VL groups, a total of 10,870,000 head of MH may have been associated with vertical integration in some form in 1994. About one-half was integration with feed dealers rather than with large feed manufacturers or packers.

Growth Rates

Most producers provided us with marketings data for HP for both 1993 and 1994; growth rates for 1993 to 1994 were calculated for those producers. On average, these medium size producers increased their 1994 HP marketings by 5,970,000 head, or 8.6%, more than their 1993 HP marketings. Their rate of growth was strongly related to size of operation with size A growing only 4.2% and size E growing 15.9% (Table 4). Note also that the VL producers grew almost twice as fast as the size E group (Table 4). Not every operation grew, of course, and some experienced large reductions in HP marketings--the maximum decline was 15,724 head, while the maximum

numerical increase was 20,000 head among the medium producers. The combined medium and VL groups increased marketings by 10 million head between 1993 and 1994. We don't know how much HP grew nationally, but national slaughter grew only 2.6 million head, so HP probably grew less than 5 million head suggesting that those producers marketing less than 1,000 head per year must have reduced their marketings of HP by 5 million head or more 1993 to 1994.

Medium producers' growth in marketings of HP for 1993-94 was fastest at 9.6% in the WNC region, next fastest at 7.5% in the ENC, 5.6% in the RON, and slowest at 3.6% in the E. Coast. Growth among the VL producers was also fastest in the NCR at a tremendous 49%, while the NC-VA area was next at 29% and the RON was last at 15%.

HP marketings of medium contractors grew nearly three times as fast as non-contractors--19% versus 7%. Contractors had a faster percentage growth in every size group except D. Those engaged in contract production grew an average of 1,054 head of HP between 1993 and 1994, while non-contractors grew an average of only 166 head. Some of this big difference is because contractors are larger on average, but contractors usually grew faster than non-contractors in the same size groups (Table 5). The HP marketings of VL contractors also grew nearly three times as fast as non-contractors from 1993 to 1994--33% to 12%, although both of their rates were faster than the medium group. The faster growth of contractors stems from the significant proportion of capital supplied by their growers.

We also have a slightly longer term measure of growth as most respondents checked an answer as to how much their HP marketings grew between 1991 and 1994. There was a strong relation between rates of growth for the two overlapping periods as shown in Table 6. Note that those operations that were more than 150% or more larger in 1994 than in 1991 had increased their HP marketings by an average of 1,039 head per operation for a total of 2,332,000 head. Note how the average growth in 1993 to 1994 declined as growth declined from 1991 to 1994 and becomes negative for those that had negative growth in 1991 to 1994 (Table 6).

There was a small positive relation between size of operation and its rate of growth 1991 to 1994 but a much stronger relation to contracting--the contractors grew much faster than the non-contractors (Table 7).

Newer operations generally grow faster than older ones. We have found that relationship on several previous studies and found it again with the medium producers. Only 15% of the operations that began marketing HP before 1970 reported increasing their HP marketings by 25% or more between 1991 and 1994, while 48% of those beginning in 1990 or 1991 reported such an increase. Incidentally, hog operations in the NCR average a bit older than those in other areas.

The increased marketings of HP from 1993 to 1994 of the medium producers were also a negative function of the age of the operations (Table 8). It was also true for VL producers that the HP marketings of the newer ones grew much faster 1993-94; the increase over 1993 marketings was 16% for the 35 operations that began marketing HP before 1980, 33% for the 20 that began in the 1980s, and 182% for the 8 beginning in the 1990s (3 operations did not provide beginning dates).

Projected Growth

After being asked their 1993 HP marketings, producers were asked to project their HP marketings for 1995 and then for 1997; 97% of them complied with 1995 estimates and 87% with 1997 estimates. Our measures of average and percentage growth are calculated by comparing 1994 data for those who projected ahead with their projections. Some projected decreases including getting out of business, but the average increases were positive for every size group and for all but one region. Projected growth in HP marketings to 1995 was 16% greater than 1994 for contractors (the same as their 1993-94 growth rate) but non-contractors projected a slow down to 5.5% contrasted to their 8.6% growth in 1993-94. Projected growth to 1997 was, likewise, much greater for the contractors with a 52% increase over 1994 compared to a 19% increase, on average, for the non-contractors.

The projected growth rates for the VL contractors were considerably higher than for the average medium contractor--31% for 1994-95 and 107% for 1994-97, but the projections for the VL non-contractors--at 2% and 15% were smaller than for the medium group.

The average medium producer increased HP marketings by 216 head between 1993 and 1994 and projected an increase of 201 head for 1995 and a 671 head increase by 1997 (Table 9). While the 3 year projection is only slightly more than 3 times the actual increase of 1993-94 or the projected increase for 1994-95, not everyone made such a simple extrapolation. The maximum increases and decreases shown in Table 9 indicate the

considerable dispersion in individual projections. The projections by size group show that expansion, on average, is relative to size--the concept of an expansion for the operator of a 20,000 head operation is about 20 times the magnitude of an expansion planned by an operator of a 2,000 head unit.

Just as medium contractors grew faster than non-contractors 1991-94 and 1993-94 in HP marketings, so they projected much larger increases for 1995 and 1997. The increases were somewhat even across regions, but there were some interesting deviations. Contractors in the WNC projected the largest increases, on average, for both 1995 and 1997 (Table 10). Non-contractors in the RON projected the largest increases for that group for both 1995 and 1997. Both sets of producers in the E. Coast projected decreases, on average, for 1995 but not for 1997.

Projected growth rates of HP for VL producers for 1994-95 by region were NC-VA 30%, NCR 28% and RON 22%. Projected rates for VL producers for 1994-97 were NCR 121%, NC-VA 89% and RON 78%.

Profit & Loss in 1994

Producers were asked to check either net profit or breakeven or net loss as the financial result for their hog operation in 1994. The percentages reporting net losses among the very large producers were nearly double those among the medium size producers. However, the results were more comparable when weighted by the numbers of MH in each of those size groups. The percentages reporting losses were also larger among contractors than among independents.

Net loss was reported by about 30% of the medium size operations and almost 60% of the VL producers that answered this question. (There was only 0.5% of the medium producers who skipped that question but 4 of the 66 VL producers did not answer.) Larger percentages of contractors than non-contractors reported losses--8.5% points more in the medium group and 23.5% points in the very large group (table 11). The differences between non-contractors and contractors were less for the medium size producers if we look at profits--only a 2.2% differential in favor of the non-contractors. Size was not an explanation for either profits or losses within the medium group, but the very large as a group reported a less favorable distribution of profits-losses than did the medium size group,

The non-contractors in the West and the ENC regions had the lowest percentages of losses and the highest percentages of profits, while those in the S. Central had the highest percentage of losses and the

lowest of profits (table 12). The contractors usually had higher losses in each region than the non-contractors--the numbers of contractors were fairly low outside the NCR region, so we have not provided percentages.

Since the P & L was not related to size for the medium producers, the share of MH and HP in 1994 associated with profit or loss were quite similar to the percentage of producers (table 13). However, the P & L distribution was related to size within the VL producers so that the profits picture in terms of MH was much better than the percentage distribution of producers in Table 11. In terms of MH marketings, the VL producers had greater percentages of hogs in both losses and profits than the medium size producers (table 13). The average MH marketings of the 20 very large producers reporting profits was 425,000 head marketed compared to 170,000 for the 37 reporting losses and 56,000 for the 5 VL producers reporting breakeven results in 1994.

When annual profits are hurt by a sharp drop in prices in the last quarter, those producers specializing in finishing might be expected to be hurt more than those that farrow-finish or farrow only. The percentage showing losses was higher and the percentage showing profits was lower for the finishers than the other medium size producers: 34.5% losses for finishers only vs. 29.6% for F-F and 28.7% for farrow only; 35.3% profits for finishers only vs. 43.6% for F-F and 42.4% for farrowing only.

One might expect that those producers not making profits in 1994 would project a slower rate of growth than those reporting profits. Curiously, those reporting profits projected the same growth to 1995 but a trifle slower growth to 1997 than those reporting losses (table 14). It was the group reporting breakeven results that projected much slower growth.

However, there was another factor behind the scenes that affected the results in Table 14. The percentage of operations with losses was highest for those 2300 plus operations beginning in or after 1990, and these newer operations were the ones projecting the biggest increases in marketings. Those increases ran opposite to the expected relationship to profits-losses in 1994, and they were big enough to offset the expected relationships for two other older groups (Table 15). Thus, lack of profits did have the expected negative effect on projected growth for the oldest operations and for those starting in the 80s, but there was no relation for those starting in the 70s and a strongly inverse relation for those beginning in the 90s. Some of the newer operations attributed their losses to their

rapid expansion and were not deterred by them.

There was no difference in the profit-loss patterns of those medium producers selling commercial feed and those not doing so. Those making profits milled a little higher percentage of their feed needs on average (69%) than those reporting breakeven (61% of their needs) and than those reporting losses (62%). Those medium producers reporting profits financed a smaller percentage of their feed purchases (5%) than those at breakeven (6%) or those reporting losses (12% of their purchased feed financed by the feed seller).

Minimum Prices

Producers were also asked to indicate the minimum price that would keep their operation in business for 1995-99 if corn prices average the same as the preceding 4 months (roughly November 1994 through February 1995 when they averaged \$2.17 a bushel in Central Illinois). They also had the option of indicating that they did not expect to be in operation by 1999 regardless of the level of hog prices. In effect, we were asking for minimal hog prices at which an operation could survive. We assume that the lower the prices reported the more competitive the operation. It is a difficult question that probably was answered with widely varying degrees of information of producers about their costs, and differing required profit margins so the answers need to be treated with caution.

About 52% of the operations picked a price level below \$40, 31% picked \$40-42, and nearly 13% picked a level above \$42, while 4% did not expect to be operating by 1999 (Table 16). Only 2% of the contractors expected to be gone and the contractors' price pattern was a bit lower--more competitive--than the non-contractors (Table 16). Likewise the price pattern was a bit lower for size E and for very large producers than for size A producers (Table 16).

55.5% of the MH marketed by the medium size producers were associated with a minimum price below \$40 (Table 17) compared to 52.1% of their operations (Table 16). This small difference reflects a small association of lower prices with larger size medium operations. In contrast, 76.1% of the MH marketings of the very large producers were associated with a minimum price below \$40 (Table 17) compared to 59.3% of the VL producers (Table 16). This larger difference reflects a stronger association of lower survival prices and larger producers among the very large producers. In fact, those VL producers claiming survival in the \$34-36 range averaged MH marketings of 547,000 head, those in the \$37-39

range averaged 268,000 head, those in the \$40-42 range averaged 156,000 head, those over \$42 averaged 184,000 head and the one very large producer expecting to be gone by the year 2000 marketed only 28,000 MH (but more than 50,000 HP).

The WNC region at 3.4% had the smallest percentage of medium producers expecting to be gone by 1999; the other regions were within 1.4% points higher except for the E. Coast at a pessimistic 9.4%. Regional influence on minimum price was not as strong as the size effect but the ranking from lowest price pattern to highest was: ENC, WNC, S. Cent., E. Coast and West.

Those who projected a low minimum price would be expected to more largely fall in the profit category in 1994 than those who projected a higher price. While the relation was not as strong as might be imagined, it can clearly be seen in Table 18. Some 64% of those projecting \$34-36 prices reported profits in 1994 while only 26% of those projecting prices above \$42 reported profits.

Table 19 shows a higher percentage of losses for the higher projected price minimums for the VL producers. Perhaps, these very large producers have a much better grasp of their costs than do many of the medium size producers.

It might be expected that those who can survive at lower prices would have been expanding faster than those needing higher prices. There was, for medium producers as shown in table 20, such an expected relation between rate of expansion in HP marketings 1991-94 and the minimum price level projected for the next 5 years although it was not as strong a relation as would seem logical if everyone used the same accounting procedures. Most of those too new to have marketing records for 1991 were confident of their ability to compete at low hog prices. Rates of expansion 1991-94 are not available for the VL producers.

Finally, when we look at average expected expansion from 1994 to 1997 as related to both profit-loss in 1994 and projected minimum price levels for 1994-99, we see a much clearer association of the minimum price and marketings projections than of the profit-loss and the marketings projections. Note how the average size of the expansion falls as the price minimum rises in Table 21.

There was no systematic relation between the level of minimum prices projected and the proportion of a hog producer's feed needs that was self produced.

Circumstances Possibly Limiting Expansion Not everyone wants to expand, but most

producers have expanded and many expect to do so again. Medium size, but not VL, respondents were given a check list of ten circumstances that might limit expansion. Note the wording of "might limit" expansion; for some producers a particular circumstance may be regarded as an absolute barrier, while others may see it as a challenge that has been and must be overcome. The relative frequency of listing gives us, however, a rough measure of the relative importance of particular limits. These producers were also able to indicate that nothing limits their expansion. Only 7% of the producers said that there were no limits to their expansion. A few indicating no limits volunteered that they didn't want to expand so the limits really were irrelevant, but some producers apparently felt no effective limitations. The 7% indicating no limits was down from 12% in our 1992 survey. Also, the size E group had 14% with no limits versus 5% in size A.

The over-riding limitation was feared inadequate earnings for 58% of the medium size producers (table 22), representing 52% of the hogs & pigs (Table 23) in 1994. While possible loss is always a large limitation in planning expansion, this 58% was 6% points larger than reported in 1992. Presumably the occurrence of this survey in March 1995 following several months of very low hog prices was an important cause.

There were sizable differences in the percentages of contractors and non-contractors listing several of the specific limits. Contractors placed higher emphasis than did non-contractors on getting loans for facilities and operating expenses, local opposition and labor hassles. Non-contractors placed more emphasis on personal considerations such as age and health and concerns about the continuance of competitive outlets for hogs. Some, but not all, of the contractor status differences are associated with size differences. The average size contractor had marketings of 4,994 MH or almost two and 1/2 times as many as the average non-contractor with 2,038. The most obvious examples of this association were: local opposition with both contractors and size E operators seeing it as more important, concern about competitive outlets and also personal considerations with both contractors and size E producers listing them as less important than did non-contractors and smaller producers (Table 22).

The fact that a higher percentage of contractors listed credit problems is probably related to the fact that contractors, on average, have been expanding faster and have been pushing harder against credit limits than have been the smaller, less aggressive non-contractors.

The differences found between the % of market hogs and % of producers in Table 23 reflects again the impact of differing attitudes by size of operation. Whenever the % of producers exceeds the % of HP, a higher percentage of the smaller operators than of the larger ones listed that circumstance.

In comparing results for 1991 and 1994, the general consistency of rankings and numbers is good enough to give credibility to using the question and answers. Considering all the attention being given to structural change, a greater concern about outlets in 1994 is logical. Likewise, as average size of producer continues to increase, we would expect the percentages for personal considerations and lack of a successor to fall--as they did between 1991 and 1994. Local opposition was a newly listed circumstance in this survey; probably one should add the limit of local opposition to the limit of environmental hassles in 1994 to compare to environmental hassles in 1991. The sum of the two at 44.8% would indicate some worsening of that problem since 1991.

Regional differences were higher than expected for some of these limits. As shown in Table 24, the West had the high % of the no limits response while the S. Central had the low. The WNC had a high of 62% worried about future earnings while the West had only 42%. The special niche markets of many western producers probably affects their optimism. Likewise personal considerations and concern about lack of a successor were much lower in the West than elsewhere. Environmental hassles were highest in the S. Cen. and E. Coast where public pressures seem to have risen lately. Labor hassles were most frequently mentioned in the ENC and least in the West which probably reflects the differences in those labor markets. Proportions of producers concerned about loans for both operating and facilities were generally low on the E. Coast and high in the NCR. Concerns about the future availability of competitive outlets were greatest on the E. Coast and in the S. Cen. and lowest in the WNC with its abundance of packers and buying points.

Networking

Networking has been much in the news, but there has been no information about the extent of participation. We estimate that about 9% of medium size and larger producers marketing nearly 18% of national slaughter in 1994 were involved in networks. Networks are becoming important.

By definition, a producer network involves more than one producer and may involve other types of participants as well. About 9% of the medium size

producers reported networking with other producers (Table 25). Medium size contractors were 3 to 4 times more frequently involved in networking than were non-contractors (Table 25). The percentage of producers reporting networking with other producers was strongly related to the size of producers--rising from 6.6% of size A to 25.9% of size E.

Joint marketing was reported by 4.8% of the medium producers, joint purchasing by 3.4%, sharing of data by 1.7%, cooperation in seedstock multiplication by 1.4% and split production by 1.2% (table 26). There was likely a little under reporting of activities as some networking producers did not reply to the activities question.

Contractors typically reported a particular activity about 3 times as frequently as independents (table 26). The larger operators more frequently reported networking activities. For example, the percentage reporting joint purchasing rose from 2.0% of the size A group to 11.8% of the size E group.

The very large producers also network. Five of the 9 mega producers (each marketing more than 500,000 HP in 1994) reported joint purchasing, but no other networking. It is understood that more than five megas were also involved in some data sharing although none of them reported it. Likewise 12 of the 57 super producers (50,000 to 499,999 HP) participated in networks with 9 in joint purchasing, 3 in joint marketing, 1 in seedstock multiplication, 2 split production and 4 shared data. In sum, the very large producers emphasized joint purchasing. The mega producers have probably grown too large to have any advantage in several activities such as split production and joint marketing.

The total number of market hogs marketed by medium size producers involved in networking was 8,780,000 in 1994 or about 14% of their total marketings (Table 27). Nearly as many MH (8,067,000) were associated with some form of networking by the very large producers as by the medium size group. The total of 16,847,000 MH was 17.6% of national slaughter in 1994.

The medium producers' most common activities were joint marketing by producers selling 4,129,000 MH and joint purchasing by those selling 3,846,000 MH; there was much overlap between those two groups. Among the medium producers, 1,706,000 MH were reported as associated with seedstock multiplication and 1,951,000 were associated with sharing data (Table 27).

The proportions of producers reporting network participation differed considerably by region. The West was highest with 31.1%, the S. Central was next at 12.8%, then the ENC at 9.9 %, the WNC at 7.0%, and finally the E. Coast at 4.4%.

Appendix on Sampling Survey

In mid-February, 1995, Pork Magazine mailed our 4 page questionnaire to 9,954 subscribers. Sample sizes were based upon Pork's size classifications based upon annual marketings as provided annually by their subscribers. The sampling rate varied from 50% to 25% as follows:

Subscriber <u>Marketings</u>	No. Owners/ <u>Mgrs</u>	<u>Sample</u>	<u>Returns</u>
10,000-49,999	1,668	834	282
5,000-9,999	2,796	1,398	479
3,000-4,999	4,500	1,125	367
2,000-2,999	7,456	1,864	564
1,000-1,999	<u>18,932</u>	<u>4,733</u>	<u>1,450</u>
Totals	35,352	9,954	3,142

The analysis uses multipliers to project to the magazine population (total subscriber list). For example, 1,668, the number of owners/managers (operations) in the largest size group, was divided by 282, the number of returned usable questionnaires in that group, to produce a multiplier of 5.915 for all questionnaires in that magazine group.

The reason for using a subscription list is simple. It is the only affordable method for a nongovernmental entity. Sampling from a list is much cheaper than a geographic sampling approach. Few lists are available and all have the shortcoming of an unknown degree of deviation from the national population of all hog producers. We emphasize that these sampling results fall short of that national population because (1) we omitted those small producers marketing less than 1,000 head and the very large producers marketing 50,000 head and more that were covered by a census technique, and (2) the magazine list is a good approximation of the national population of hog producers in the selected size groups but it is not identical to it.

We focus on business units rather than places of production. The Pork list of owners facilitates that list. Since a manager could manage one of two or more facilities under one ownership, we asked non-owner managers if they managed only a part of the operation. When that was the case, the questionnaire was not used.

In order to obtain a reliable sample of contractors and growers, we took a large--and

expensive--sample of the Pork list. For most purposes, the non-contracting operations at the national level can be treated as having small sampling error, assuming respondents and non-respondents are alike. Sampling errors for contractors and growers are larger but they should be small enough for most purposes. Non-sampling errors presumably exist. Producers can report erroneous data--accidentally or deliberately or through misreading the question. Various errors can creep into sampling, mailing, coding and analysis. Some of these errors may not be offsetting.

Our size classifications are based upon the hogs/pigs marketings for 1993 and 1994 as provided on the questionnaires. Any operation that marketed more than 999 head in either year, or in both years, but marketed less than 2,000 head in both 1993 and 1994 was classed in the smallest size group A. Likewise, any operation marketing more than 9,999 head of hogs and pigs in either or both 1993 and 1994 but less than 50,000 head in both those years was grouped in the largest size E. This two-year criterion yields slightly more eligible producers than would a size criterion based upon only one year because marketings do vary from year to year. We think a two-year criterion is more realistic. An operation that typically markets in a particular category, say size C, may have dropped temporarily into a lower category in 1994 because of a fire or repopulation, but it is still a C size operation in our results.

Our regional classification uses the same regions often used by the U.S. Dept. of Agriculture. The WNC includes the 7 adjacent states of MN, IA, MO, KS, NE, SD, and ND. The ENC includes the 5 adjacent states of IL, IN, OH, WI, and MI. The S. Central includes the 8 adjacent states of KY, TN, AL, MS, LA, AR, OK and TX. The E. Coast includes all states east of the ENC and the S Central of which the most important hog states are NC, VA, PA, and GA. The West includes all states west of the WNC and the S Central.

TABLE 1

Marketings of the Nation's Medium and Very Large Producers, 1994 by Size of Producers

Size of Prod.	No. Of Prod.	Marketings (000 head) of			
		MH	FP	SS	HP
A 1000-1999	15,201	16,670	2,956	233	19,859
B 2000-2999	6,192	11,700	1,840	194	13,734
C 3000-4999	3,806	11,189	2,130	218	13,537
D 5000-9999	2,209	11,439	2,622	399	14,460
E 10,000-49,999	1,062	11,996	4,278	556	16,831
Total Med.	28,470	62,994	13,826	1,600	78,241
VL 50,000+	66	16,054	1,199	361	17,615
Grand Total	28,536	79,048	15,025	1,961	96,036

TABLE 2

MH Marketings of Medium Hog Producers by Size and Region, 1994

Size	Regions (Marketings in 000 Head)				
	WNC	ENC	E Cos.	RON	Nation
A	10,814	4,502	529	825	16,670
B	7,824	3,234	213	429	11,700
C	6,056	3,978	534	621	11,189
D	6,972	2,803	324	1,340	11,439
E	7,297	2,971	103	1,625	11,996
Total Med.	38,963	17,489	1,702	4,840	62,994

Notes: Producers are located by where they finished their MH which is usually but not always where they marketed them.

Rounding of data to the nearest thousand may occasionally cause rows or columns to have sums slightly different than the indicated totals.

RON includes 131,000 hogs that lacked regional identification.

TABLE 3**Contractors and Contract Production, 1994**

(Numbers of Head in 000)							
Size	#C	MH Sold	% All MH Sold	# Finsh. Growers	G. Fin. % MH	# Far. Growers	G. Far. % MH
A	350	425	2.6%	241	57%	37	8.8%
B	302	641	5.5	348	54	65	10.1
C	294	968	8.6	430	44	122	12.6
D	448	2,372	20.7	1,532	65	221	9.3
E	295	4,028	33.6	2,876	71	540	13.4
Total	1,689	8,435	13.4	5,428	66	984	12.3
VL	54	14,390	89.6	10,046	72	6,343	44.1
Total	1,743	22,825		15,834		7,327	

Notes: #C is number of producers reporting contract production.

MH Sold is marketings by contractors.

% All MH Sold is MH Sold as a % of total marketings by contractors and non-contractors in that size group.

Finsh. Growers is the No. of MH finished by contractors' growers.

G.Fin. % MH is the grower finished MH as a % of all contractor marketings of MH.

Far. Grwers is the estimated number of pigs farrowed by growers for these contractors.

G.Far. % MH is the percentage that grower farrowed pigs were of contractor marketings of MH.

Because some contractors did not provide data on the numbers they finished or farrowed through growers, the percentages computed from those answering were extrapolated to estimate the numbers finished or farrowed by all contractors' growers in each size group. Hence, these numbers have a larger probable error than the numbers marketed.

TABLE 4**Growth in HP Marketings, 1993 to 1994, by Size of Operation**

Size	Growth 1993-94	% Growth Over 1993	Max. Growth Any Operation	Max. Decline Any Operation
A	782,000	4.2%	1,930	-1,900
B	601,000	4.7	2,700	-2,482
C	787,000	6.4	4,800	-2,457
D	1,597,000	12.8	9,600	-5,000
E	2,203,000	15.9	20,000	-15,724
Medium	5,970,000	8.6		
VL	4,041,000	29.8	563,275	-20,754
Total	10,011,000			

Note: This table necessarily excludes the 3% of medium producers who omitted their 1993 HP marketings.

TABLE 5

Producers' Average Growth in Head of HP, 1993-94, by Size and Contractor Status

Size of Producers						
Contractor?	A	B	C	D	E	All
No	52	86	205	749	1,466	166
Yes	99	373	336	711	3,988	1,053
Combined	53	100	215	741	2,170	216

TABLE 6

Rates of Growth in Marketings of HP 1991-94 and 1993-94 for Medium Producers

1993-94	1994 Marketings of HP as % of 1991					
Growth	150+	125-149	105-124	100	99-	***
Total (000)	2,332	1,661	1,825	398	-1,004	717
Average	1,039	509	271	35	-320	858

Note: *** indicates those operations begun since 1991.

TABLE 7

Growth in HP Marketings 1991-94 by Size and Contractor Status

Percentage Distribution of Responses to 1991-94 Growth					
Size	Contr	125+ %	105-124%	None	Decline
A	Non C	17%	22%	46%	15%
	C	32	31	26	11
B	Non C	17	29	43	11
		53	34	13	0
C	Non C	22	26	42	10
	C	29	43	22	6
D	Non C	34	26	32	8
	C	43	35	20	2
E	Non C	23	32	37	8
	C	62	25	11	2
All	Non C	19	25	44	12
	C	43	34	19	4

Note: C designates contractor and Non C designates a non-contractor.

TABLE 8

Growth in Average Head per Operation of HP Marketed 1993-94 by Period Operation Began Hog Production and Contractor Status

Period Hog Production Begun					
Contractor ?	<1970	1970s	1980s	1990s	All
No	109	106	222	508	166
Yes	559	1,092	875	2,776	1,054
Combined	128	161	264	655	216

TABLE 9

Actual and Projected Expansion of HP Marketings by Producers and Size

Average Number of Head Increase			
Size	1993-94	1994-95	1994-97
A	53	76	255
B	100	110	437
C	215	204	740
D	741	497	1,258
E	2,170	1,884	6,024
All	216	201	671
Max. Incr.	20,000	48,285	164,720
Max. Decr.	15,724	36,000	47,999

TABLE 10

Actual and Projected Increases in HP Marketings of Medium Producers by Region and Contractor Status

Average Number of Head Increase				
Region	Contract	1993-94	1994-95	1994-97
ENC	Non C	152	143	496
	C	859	1,154	3,227
	Both	183	190	610
WNC	Non C	173	129	485
	C	1,222	1,354	3,822
	Both	240	209	713
EC	Non C	104	-196	77
	C	-329	-1,247	764
	Both	78	-262	112
RON	Non C	178	444	850
	C	352	285	164
	Both	187	434	819
Nation	Non C	166	140	494
	C	1,054	1,177	3,486
	Both	216	201	671

TABLE 11

Percentages of Producers Reporting 1994 Profits or Losses by Major Size and Contract Status

Results	Medium Size			Very Large		
	Non C	Contr	All Med	Non C	Contr	All VL
Profits	42.8%	40.6%	42.6%	60.0%	26.9%	32.2%
Breakeven	27.3	21.0	27.0	0	9.6	8.1
Losses	29.9	38.4	30.4	40.0	63.5	59.7

TABLE 12

Percentages of Non-Contractor, Medium Size Hog Producers Reporting 1994 Profits or Losses by Region

Results	Regions					
	ENC	WNC	E. Coast	S. Cent	West	Nation
Profits	50.2%	40.3%	34.4%	31.8%	51.5%	42.6%
Breakeven	22.5	28.9	34.2	34.6	20.9	27.0
Losses	27.2	30.8	31.4	33.5	27.6	30.4

TABLE 13

Numbers and Percentages of MH and HP Marketings Associated with Operations Reporting Profits or Losses for 1994

Results	Medium Producers				V L Producers	
	# MH (000)	% MH	# HP	% HP (000)	# MH (000)	% MH
Profits	28,645	45.7%	34,541	44.3%	8,494	56.4%
Breakeven	15,150	24.2	18,996	24.3	278	1.8
Losses	18,890	30.1	24,467	31.4	6,286	41.8
Totals	62,685	100.0	78,004	100.0	15,058	100.0

TABLE 14

Average Growth in Hogs/Pigs Projected for 1995 & 1997 by Financial Results Reported in 1994 by Medium Size Producers

Average Head Growth Per Producer in No. HP		
Fin. Results	1994-95	1994-97
Profits	209	685
Breakeven	140	557
Net Losses	209	707

TABLE 15

Average Growth in Hogs/Pigs Projected for 1995 by Financial Results and Period Medium Size Operation Began

Fin. Results	Period Operations Began				All Age
	Before 1970	1970s	1980s	1990s	Groups
Profits	172	217	185	435	209
Breakeven	-43	186	177	722	140
Losses	11	211	29	1,345	209

TABLE 16

Percentages of Operations Picking a Minimum Price of Hogs by Size and by Contractor Status

Price	Type or Size Producer						
	All Med	Non C	Contr	A	C	E	VL
\$34 to \$36	17.0%	17.1%	16.7%	14.7%	21.8%	20.9%	10.2%
\$37 to \$39	35.1	34.2	39.9	34.8	34.2	39.5	49.1
\$40 to \$42	31.3	30.5	35.7	32.2	29.5	32.7	28.8
Above \$42	12.7	13.1	5.8	13.2	12.2	6.2	10.8
Be Gone	3.9	4.0	1.8	5.1	2.3	0.6	1.7

TABLE 17

Numbers and Percentages of MH Marketings Associated with Minimum Prices and Size of Operations

Price	(Thousand Head) Size Producers							
	All Med		A		E		VL	
\$34-\$36	12,451	20.0%	2,481	15.2%	2,756	23.4%	3,283	22.6%
\$37-\$39	22,031	35.5	5,843	35.8	4,380	37.2	7,779	53.5
\$40-\$42	19,671	31.7	5,193	31.8	3,886	33.0	2,342	16.1
\$42+	6,486	10.4	2,038	12.5	543	4.6	1,102	7.6
Be Gone	1,482	2.4	750	4.6	207	1.8	28	0.2
Totals	62,121	100	16,305	100	11,772	100	14,534	100

TABLE 18

Percentages of Medium Producers Reporting Profits in 1994 and Projecting a Specific Minimum Price 1995-99

Minimum Price Levels	Profit & Loss, 1994			
	Profits	Breakeven	Losses	Total
\$34-\$36	63.7%	21.0%	15.3%	100%
\$37-\$39	46.2	29.9	23.9	100
\$40-\$42	35.6	28.9	35.6	100
\$42+	25.8	24.2	50.0	100
Be Gone	24.0	24.8	51.2	100

TABLE 19

Percentages of Very Large Producers Reporting Profits in 1994 and Projecting a Specific Minimum Price, 1995-99

Minimum	Profit & Loss, 1994			
Price Levels	Profits	Breakeven	Losses	Total
\$34-\$36	66.7%	0.0%	33.3%	100%
\$37-\$39	41.4	3.4	55.2	100
\$40-\$42	13.3	13.3	73.4	100
\$42+	0.0	.0	100.0	100
Be Gone	0.0	.0	100.0	100

TABLE 20

Percentages of Medium Producers Reporting Rates of Expansion in HP Marketings, 1991-94, and Projecting Minimum Price

Minimum	Rate of Expansion, 1991-94					
Price	50+%	25-49%	5-24%	None	Decline	New*
\$34-\$40	61.6%	54.7%	57.8%	48.2%	40.1%	71.2%
\$40-\$42	27.5	35.4	29.1	31.5	35.9	21.3
\$42+	7.5	7.7	11.3	15.4	17.0	6.1
Be Gone	3.4	2.2	1.8	4.9	7.0	1.4
Totals	100.0	100.0	100.0	100.0	100.0	100.0

* New producers not marketing in 1991

TABLE 21

Average Growth in No. of Head of HP Marketings Related to Profits-Loss 1994 and Projected Minimum Price, 1995-99

Financial	Average Head Increase per Producer Projected 1994-97 Minimum Price Projected					
Results	\$34-\$36	\$37-\$39	\$40-\$42	\$42+	Gone	All
Profits	788	586	963	263	-593	685
Breakeven	1,058	786	364	185	-1,386	557
Losses	2,332	1,221	442	252	-830	707
All	1,100	792	608	239	-901	671

TABLE 22

Percentages of producers listing specific limitations on their further expansion of output, 1994

Limitation	No. Prod.	% All	% Non C	% Contr.	% Size A	% Size E
Lack Profit	16,529	58.1%	58.5%	51.0%	61.5%	38.0%
Personal	10,880	38.2	39.2	22.7	42.3	14.0
Envir Hassle	8,858	31.1	30.9	33.8	28.9	36.8
Labor Hassle	8,037	28.2	27.5	39.8	23.9	25.2
Facil Loans	7,594	26.7	25.7	41.5	24.4	26.9
Oper Loans	4,782	16.8	16.0	29.6	16.5	21.2
Comp Outlets	6,978	24.5	25.3	12.4	29.6	6.7
No Successor	4,848	17.0	17.4	11	19.9	2.8
Local Oppose	3,911	13.7	13.3	21.0	12.5	25.7
Other	1,004	3.5	3.6	3.0	4.3	1.7

TABLE 23

Producers and Share of Hogs & Pigs Related to Specific Limitations, 1991 and 1994

Limitation	% HP 4 1994	% Producers	
		1994	1991
None	5.1%	6.9%	12.4%
Lack Profit	51.8%	58.1%	42.2%
Personal	31.8	38.2	43.8
Envir Hassle	34.2	31.1	41.9
Local Oppose	17.9	13.7	N/A
Labor Hassle	30.0	28.2	43.0
Facil Loans	27.9	28.2	26.6
Oper Loans	18.3	16.8	15.3
Comp Outlets	18.0	24.5	18.4
No Successor	12.6	17.0	17.0
Other	2.9	3.5	9.0

TABLE 24

Percentages of Producers Listing Specific Limitations on Expansion by Region, 1994

Limitation	Regions					
	Nation	ENC	WNC	E. Co.	S. Cen.	West
None	6.9%	5.9%	7.2%	7.3%	3.3%	14.2%
Lack Profit	58.1	52.8	61.8	51.4	48.4	42.2
Personal	38.2	37.6	39.5	35.1	32.3	17.0
No Successor	17.0	17.8	16.5	24.9	20.0	6.2
Envir Hassle	31.1	32.5	29.6	36.4	45.4	28.1
Local Oppose	13.7	16.9	12.3	14.5	18.5	15.6
Labor Hassle	28.2	33.0	27.0	22.0	24.0	20.2
Facil Loans	26.7	26.2	28.1	13.0	22.7	15.8
Oper Loans	16.8	14.6	18.0	10.3	18.8	15.5
Comp Outlets	24.5	26.4	21.6	42.8	46.2	27.1
Other	3.5	3.7	3.5	1.5	2.0	6.9

TABLE 25

Percentage of Medium size Producers Reporting Networking with Specific Participants by Status of Contracting, 1994

Type of Participants	All	Producers Non-Contr.	Contractors
Hog Producers	9.1%	7.9%	28.8%
Feed Dealer-Mfg.	2.2	1.8%	9.5
Packer	1.5	1.2	5.4
Veterinarian	1.3	1.2	3.7
Grain Producers	0.8	0.8	1.4

TABLE 26

Percentage of Medium Size Producers Reporting Specific Networking Activities by Contracting Status of Producers, 1994

Networking Activities	Producers		
	All	Non-Contractors	Contractors
Jt. Marketing	4.8%	4.3%	11.6%
Jt. Purchasing	3.4	3.0	9.2
Multip. Seedstk.	1.4	1.0	7.4
Shares Data	1.7	1.5	5.5
Splits Production	1.2	1.0	4.1

TABLE 27

Marketings of MH4 of Producers Reporting Various Networking Activities by Major Size Groups

(000 Head)		
Activity	Medium	Very Large
Jt. Purchasing	3,846	7,628
Jt. Marketing	4,129	328
Seedstk. Mult.	1,706	120
Splits Production	1,202	143
Shares Data	1,951	484
Mills Feed	163	0
1 or >1 Activity	8,780	8,067