SRD WORKING PAPER

STUDY OF HOG BALANCE SHEET AND ALTERNATIVE WAYS TO ASK FARROWING QUESTIONS

By Mike Steiner

ABSTRACT

Three possible changes to the multiple frame hog questionnaire are examined. A change in position of the questions on expected farrowings seems to make the interview easier. Providing respondents with previously reported expected farrowings influences the response of some respondents and causes resentment in other respondents. Respondents have difficulty in accurately reporting data on the hog and pig balance sheet.

Key words: Balance sheet, expected Farrowings.

CONTENTS

SUMMARY

Expected Farrowings After Sow Inventory:

Asking expected farrowings after breeding sow inventory and before the remaining inventory questions makes the interview easier for the enumerator and respondent since they do not have to switch their train of thought from sows to other breeding stock to market hogs to sows expected to farrow. Enumerators working on this project preferred the location of the expected farrowing questions on the test questionnaire over the operational questionnaire. Whether a change in the order of the questions would affect the farrowing indications requires a large scale research project.

Providing Previously Reported Expected Farrowings:

Some telephone respondents were influenced in their response to actual farrowings for the past three months by having been given their previously reported expected farrowings. One third of the field enumerators conducting personal interviews received negative feedback from respondents over giving them their expected farrowings. Some respondents resented being asked about differences in their data, and were also concerned about confidentiality of their data. One fourth of the field enumerators thought that supplying previously reported expected farrowings was helpful in conducting the interview. Six different reasons were obtained for differences in expected and actual farrowings. The main reason was a failure to get as many sows bred as desired. Providing previously reported expected farrowings on the questionnaire does require a significant amount of pre-survey work.

Hog an Pig Balance Sheet:

Some respondents found the balance sheet difficult to complete, particularly over the telephone. Not all respondents were able or willing to complete the balance sheet. Of the respondents reporting positive hog data on the regular survey questions, 15 percent did not complete the balance sheet. Of those completing the balance sheet, there were some large differences between the regular inventory and the balance sheet inventory. The ratio of balance sheet inventory to regular inventory ranged from 78 percent to 287 percent. Use of the balance sheet inventory rather than the regular inventory would have produced a 14.6% increase in the September estimate of hog and pig inventory. Whenever the two inventory figures were significantly different, the respondent was asked which figure was more reliable. All respondents indicated that the regular inventory was more reliable than the balance sheet inventory. The completion date of the June MF Hog Survey seems to have some effect on differences between the two inventory figures. A difference results when changes in hog numbers occur between the completion date of the June questionnaire and June 1. The research study pointed out that there were some problems when different respondents reported for the two surveys. A different respondent in September than in June often resulted in major changes to data reported in June.

INTRODUCTION

Some states in the Multiple Frame Hog Survey have occasionally experienced wide variation in survey indications from quarter to quarter. Inconsistency of hog and pig inventory levels between quarters is one type of variation. Another major type of variation is differences between expected and actual farrowings.

It is felt that the placement and wording of questions on the multiple Frame hog questionnaire may be causing some of the variation in survey indications from quarter to quarter. Two earlier studies indicated that estimates were affected by changes in the wording and ordering of questions. A 1974 study by Vogel [2] tested the impact of a change in the wording and ordering of calf crop questions on the multiple frame cattle questionnaire. It was found that these changes did affect the estimates for most items concerning calves. A study conducted in 1975 by Ford [1] tested the effect of placing land questions on Multiple Frame Hog Surveys at the end of the questionnaire. The t-values calculated from the data were not high enough to use as evidence of a significant difference, but were large enough to be alarming.

The current multiple frame hog questionnaire asks all inventory questions before asking expected sows for farrowing. This ordering requires the enumerator and respondent to switch their train of thought from sows to other breeding stock to market hogs to sows expected to farrow. The operational questionnaire asks for inventory at time of interview and does not specifically refer back to previous quarter's inventory. Farrowings for the last three months are asked, but do not relate back to expected farrowings reported three months before.

To examine possible changes to the multiple frame hog questionnaire, a small-scale study was conducted in Nebraska during the Septeber 1979 Multiple Frame Hog Survey. This project was a preliminary study of methods to reduce survey variabtion through improved questionnaire design. Three changes were made in the multiple frame hog questionnaire. These were:

1. Change the position of the expected farrowings questions. Ask number of breeding sows on hand, sows expected to farrow, and then the remaining inventory questions.
2. Provide the respondent with previously reported expected farrowings for the next three months. Ask for explanation of difference between expected and actual farrowings.
3. Obtain current inventory of hogs and pigs by use of a balance sheet using previous quarter's inventory.

Each of the three changes is discussed in separate sections of this report. The questionnaire used in this study is shown as Appendix A.

Fifty hog operations from Nebraska were selected to receive the test questionnaire. These operations had been contacted for the March and June Multiple Frame Hog Surveys, but had been rotated out of the operational sample for September. Operations for the test were nonrandomly selected in stratum 82 and 94 from those previously reporting a positive hog inventory. Data were collected during the survey period for the September Multiple Frame Hog Survey. Personal interviews were conducted by twelve Nebraska field enumerators. Telephone interviews were conducted by one Nebraska telephone enumerator and a statistician from Statistical Research Division. From the sample of 50, there were 40 completed or partially completed questionnaires with positive hog data. There were five questionnaires reporting no hogs, and five refusals or inaccessibles. All enumerators were asked to complet an evaluation stating their opinions and their observation of the hog producers' reactions to the test questionnaire. Appendix B is a complete summary of enumerators' evaluations.

Expected Farrowings After Sow Inventory

On the test questionnaires the expected number of farrowings was asked after "Sows, gilts, and young gilts bred and to be bred: and before the remaining inventory questions. All of the enumerators indicated that respondents had no difficulty in completing the hog inventory questions on the test questionnaire. There was no difficulty in asking the expected farrowings questions over the telephone. All but one enumerator conducting personal interviews felt that the question on expected farrowings was easier to ask on the test questionnaire.

Although asking expected farrowings after breeding sow inventory may make the interview easier, what would this change do to the survey indications of farrowing intentions? The new sequence of questions may put more emphasis on including in "Sows, gilts and young gilts bred and to be bred" only those animals which are of sufficient age to be bred. See Appendix C, part 1.c. for Nebraska's evaluation on this issue.

It is possible that the new sequence of questions would result in a difference in the reported number of expected farrowings. Perhaps with the new questions, respondents would more closely relate expected farrowings to sow inventory. Table 1 shows the ratio of expected farrowings for the next six months to sows and gilts on hand. Of the 40 completed test questionnaires, 31 reported positive expected farrowings while 9 reported zero farrowings. Thirty of these operations who received test questionnaires reported positive expected farrowings in June, while 28 did so in March. On the test questionnaire, 58 percent of the respondents reported that exactly all of the sows and gilts now on hand would farrow in the next six months. This result compares to 33 percent of the same operations on the June MF Hog Survey and 57 percent for the March MF Hog Survey. Whether the new sequence of questions would affect the indications is a question to be answered by an extensive research project.

Table 1: Ratio of Expected Farrowing for the Next Six Months to Sows and Gilts on Hand by Survey

Ratio	March 1979 MF Hog Questionnaire		June 1979 MF Hog Questionnaire		September 1979 Test Questionnaire	
	Number	%	Number	%	Number	%
< .75	2	7.1	10	33.3	7	22.6
.75 - .99	7	25.0	3	10.0	2	6.4
1.0	16	57.2	10	33.3	18	58.2
1.01 - 1.25	2	7.1	1	3.4	2	6.4
> 1.25	1	3.6	6	20.0	2	6.4
TOTAL	28	100%	30	100%	31	100%

PROVIDING PREVIOUSLY REPORTED EXPECTED FARROWINGS

Respondents in the research study were given what they reported on their June 1 questionnaire for expected farrowings during June, July and August. They were then asked how many sows did they actually farrow during the time period, and to explain any difference. Table 2 shows the relationship between the expected and actual farrowings for operations in the research study since March 1979. The number of expected farrowings for March, April and May was taken from the March MF hog questionnaire. The actual farrowings for the same time period were taken from the June MF hog questionnaire. The respondents to the June MF Hog Survey did not have their expected farrowings when reporting their actual farrowings. Data for the June to September comparison were taken from the September test questionnaire. In September respondents did know their previously reported expected farrowings before answering their actual farrowings on the test questionnaire.

Table 2 indicates that access of the respondents to their expected farrowings resulted in actual farrowings being closer to expected farrowings. There were five cases of actual and expected farrowings being the same in June to Setpember, while in only one case were they the same in March to June. Some respondents on telephone interviews were influenced in their answer to the actual farrowing question by having been given their previous quarter's expected number. After being given expected farrowings, two telephone respondents stated immediately "that's about right" and would themselves not actually respond with a numeric answer. Two other telephone respondents merely repeated the number given to them without taking time to think about their answer. While it is certainly possible for expected and actual farrowings to be the same, these four telephone responses seemed to be influenced by having been given their expected number. Respondents on personal interviews

Table 2: Ratio of Intended Farrowings to Actual Farrowings by Survey

Ratio of Intended Farrowings To Actual Farrowings	Intentions Reported In March Actual Farrowings Reported In June 1/		Intentions Reported In June Actual Farrowings Reported In September 2/	
	Number	%	Number	%
< .75	3	10.3	5	17.2
.75 - .99	5	17.2	6	20.7
1.0	1	3.5	5	17.2
1.01 - 1.25	4	13.8	5	17.2
> 1.25	16	55.2	8	27.7
TOTAL	29	100%	29	100%

1/ Data taken from March and June MF hog questionnaire

2/ All data taken from September test questionnaire

Table 3: Reasons Given For Differences Between Expected and Actual Farrowings for June, July and August

Reason for Difference	Number	Percent
Fewer sows bred than had hoped	7	35
Expected farrowing figure incorrect	4	20
Changed decision on number to farrow	3	15
Going to sell sows but did not	2	10
No reason given - Small difference between expected and actual (2 or 3 sows)	2	10
Sold sows	1	5
Bought bred sows	1	5
TOTAL	20	100%

did not seem to be influenced by having been given their expected number.

Some field enumerators encountered problems with the farrowing question. Four enumerators conducting personal interviews indicated that they received a great deal of negative feedback from respondents over giving them last quarter's intentions. Respondents resented being checked up on and were also concerned about confidentiality of their data. Three field enumerators thought supplying last quarter's intentions was helpful in conducting the interview. Five field enumerators thought the change had no effect.

When there was a difference between expected and actual farrowings, enumerators asked for an explanation of the difference. Two field enumerators stated that operators did not have difficulty in explaining differences. Table 3 shows the reasons respondents gave for differences. The most frequent reason given was that fewer sows were bred than had hoped. Four respondents indicated that the previously reported number of expected farrowings was incorrect. Table 4 shows the intentions' number reported in June and the corrected figure given in September for these four operations In the three of the four cases the respondent was the same for both surveys.

Table 4: Operations with Corrections of Farrowing Intentions Reported in June

Farrowing Intentions Reported In June (Number of Sows)	Corrected Figure Indicated in September (Number of Sows)
4	0
0	20
90	45
30	41

HOG AND PIG BALANCE SHEET

Two different methods of obtaining hog and pig inventory were used in this study. The operational method of determining current inventory of breeding stock and market pigs was asked first. A balance sheet using previous quarter's inventory was completed on page 4 of the questionnaire. The balance sheet and regular inventory method should have produced the same hog and pig inventory. Table 5 shows the ratio of balance sheet inventory to regular inventory by method of data collection.

There were 34 questionnaires with a completed balance sheet. In 28 cases (82%) the two inventory numbers were different. The balance sheet inventory numbers were different. The balance sheet inventory was greater than the regular inventory 53 percent of the time, and less than the regular inventory 29 percent of the time. When the balance sheet inventory differed from the regular inventory, enumerators attempted to bring the two figures together. If the attempts to reconcile the two figures failed, the respondent was asked which of the two totals was better. In all cases respondents felt that the regular inventory was more reliable than the balance sheet inventory. Since there were only three mail returns, it was not possible to evaluate mail response.

Telephone Response:

The balance sheet was difficult to complete over the telephone. Some telephone respondents were very confused by it. Many respondents had trouble in kaking adjustments to bring the balance sheet inventory in line with the regular inventory. One of Nebraska's better field enumerators commented about the balance sheet that they "certainly would not want to explain one of these on a telephone." Even after lengthy telephone interviews, some reports had very questionable data. Many balance sheet inventories were much

Table 4: Ratio of Balance Sheet Hog and Pig Inventory to Regular Hog and Pig Inventory by Method of Data Collection

Balance Sheet Inventory ÷ Regular Inventory	Method of Data Collection			Total	
	Mail	Telephone	Personal Interview		
	Number			Number	%
.75 - .89	0	2	1	3	6
.9 - .99	0	3	4	7	14
1.0	2	1	3	6	12
1.01 - 1.10	1	4	3	8	16
1.11 - 1.25	0	3	0	3	6
> 1.25	0	5	2	7	14
Balance Sheet Not Completed	0	3	3	6	12
Refusal or Inaccessible	0	1	4	5	10
Zero Hog Data	0	3	2	5	10
TOTAL	3	25	22	50	100%

greater than the regular inventory. The ratio of balance sheet inventory to regular inventory ranged from 78 percent to 287 percent. Respondents were not able to complete the balance sheet all the time. Of the 21 telephone interviews completed with positive hog data, there were three cases (14 percent) when responden-s were unable to complete the balance sheet. There were two cases where the respondents said they did not knowthe number of "hogs and pigs sold or butchered during June, July and August." There was one case where the respondent said they did not know thenumber of "Hogs and pigs purchased during June, July and August."

Personal Interview:

In terms of having the two inventory numbers close together, personal enumeration seemed to give slightly better results than did telephone enumeration. However, some reports still had very questionnable data. The ratio of balance sheet inventory to regular inventory ranged from 78 percent to 158 percent. In addition, there were 3 cases (19 percent) when field enumerators conducting personal interviews were unable to complete the balance sheet. In these 3 cases the respondents were either unable to unwilling to take time to complete the balance sheet questions.

Three of the enumerators conducting personal interviews felt that respondents liked the balance sheet. Seven enumerators conducting personal interviews indicated that respondents had very negative reactions toward the balance sheet. Some respondents resented the use of previously reported data, and thought that we were checking up on them. Two field enumerators reported that respondents were confused by the balance sheet and that too much time was required to complete it.

Completion Date of June Report:

One factor which could cause the two inventory figures to vary is the completion date of the June report. The completion date in Nebraska for the June MF Hog Questionnaires ranged from May 22 to June 6. Differences from the time of completing the previous report to the first of the month may cause problems when using the balance sheet. This is clear from the following example. Consider the case of an operation which farrows continually and completed the June questionnaire on May 22. The operation could have farrowed sows between May 22 and June 1. A number of pigs would have been born after completion of the June MF Hog Questionnaire. On the balance sheet we were asking for "pigs born in June, July and August on hand or already sold." In September a respondent would not report pigs born the last week of May. These pigs born the last week of May would not appear on either question 1 or 2 of the balance sheet. But the pigs still on hand would be on the regular inventory, resulting in the regular inventory being greater than the balance sheet inventory. An operation reporting before June 1 which sold pigs would have the opposite result. Pigs sold after completion of the June survey would not appear on the regular September inventory. However, they would appear on the balance sheet inventory since they would not appear as "hogs and pigs sold or butchered during June, July and August." In this instance the balance sheet inventory would be greater than the regular inventory. Reporting after June 1 on the June MF Hog Survey could result in similar problems with balancing the two inventory figures.

Table 6 shows the relationship between the ratio of the two inventories and completion date of the June MF Hog Survey. Although Table 6 shows no clear relationship, there were some instances where the June reporting date was probably responsible for not being able to bring the two inventory numbers together. Not knowing exactly when previous survey data were collected presented a problem in using the balance sheet. Even if the June completion date had been on the September research questionnaire, it still would have been difficult to work back to a specific date.

Survey Respondents:

Another factor which might cause the two inventory figures to vary is the survey respondent. Table 7 shows the ratio of the two inventories by survey respondents in June and September. Even though nearly half the time operators reported in both surveys, there were still some major differences between the two inventories. The survey respondent does not appear to explain differences between the two inventories. However, when there were changes in respondents between surveys, there were many corrections in previously reported figures.

Corrections of Reported Data:

When there were major differences between the regular inventory and balance sheet inventory, enumerators re-checked questions for accuracy. There were four questionnaires out of a possible 40 (10 percent) where changes were made to the regular inventory answers. Table 9 shows the changes that were made. These are changes that normally would not have been detected, but became apparent because of the balance sheet answers.

Table 5: Average Difference Between Balance Sheet Inventory And Regular Inventory by Number of Days Between Completion of June MF Hog Questionnaire And June 1

Number of Days Between Completion of June MF Hog Questionnaire And June 1	Number of Questionnaires Completed	Average Absolute Value of % Difference Between Balance Sheet Inventory and Regular Inventory
0	4	2.2%
1	4	21.3
2	2	16.2
3	4	38.6
4	6	4.0
5	1	0
7	5	46.7
8	3	4.4
9	4	15.6
10	1	57.7

Table 6: Ratio of Balance Sheet Hog and Pig Inventory to Regular Hog and Pig Inventory by Respondents in June and September

Balance Sheet Inventory ÷ Regular Inventory	Operator Both Surveys	Wife Both Surveys	Wife (June) Operator (Sept.)	Other Combination	Unknown	Total
.75 - .89	1	1	0	1	0	3
.9 - .99	4	0	1	0	2	7
1.0	4	0	1	1	0	6
1.01 - 1.10	5	2	1	0	0	8
1.11 - 1.25	2	1	0	0	0	3
> 1.25	4	1	2	0	0	7
Balance Sheet Not Completed	2	1	0	0	3	6
Refusal or Inaccessible	0	0	0	0	5	5
Zero Hog Data	1	0	0	1	3	5
TOTAL	23	6	5	3	13	50

Table 7: Corrections of Reported Data on Regular Inventory Questions by Method of Data Collection

Method of Data Collection	Change Made To Reported Data		No Change Made To Reported Data		Total	
	Number	%	Number	%	Number	%
Mail	0	0	3	100	3	100
Telephone	2	9.5	19	90.5	21	100
Personal Interview	2	12.5	14	87.5	16	100
Total	4	10.0%	36	90.0%	40	100%

Table 8: Operations With Corrections of Reported Data on REgular Inventory Questions

Stratum of Operation	Method of Data Collection	Data Item	Originally Reported Figure	Corrected Figure	% Change
83	Telephone	Pigs Under 60 lbs.	107	114	+ 6.5
		Inventory	193	200	+ 3.6
84	Telephone	Pigs 60-119 lbs.	115	57	-50.4
		Inventory	419	361	-13.8
93	Personal Interview	Pigs Under 60 lbs.	224	248	+10.7
		Pigs 60-119 lbs.	136	100	-26.5
		Inventory	620	608	- 1.9
93	Personal Interview	Sows	400	500	+25.0
		Inventory	1726	1826	+ 5.8

Table 10 shows the number of times corrections were made to the balance sheet. Of the questionnaires with a balance sheet completed, 26.5 percent had changes to one or more of the balance sheet answers. Changes occurred more frequently on telephone interviews than personal interviews. Table 11 shows the actual changes made. On 7 questionnaires out of a possible 34 (21 percent) there were changes made to the June 1 hog and pig inventory. As Table 11 shows, these changes were not small changes but were rather larger ones. In 5 of the 7 cases, there were different respondents for the two surveys.

Deaths of Unweaned Pigs:

Another factor causing differences between the regular inventory and balance sheet inventory could be deaths of unweaned pigs. Unweaned pigs on hand at time of the June MF Hog Survey that died before weaning would not be included as disappearance (question 4 of balance sheet). This would result in the balance sheet inventory being greater than the regular inventory.

Table 9: Corrections of Reported Data on Balance Sheet Questions by Method of Data Collection

Method of Data Collection	Change Made To Reported Data		No Change Made To Reported Data		Total	
	Number	%	Number	%	Number	%
Mail	0	0	3	100	3	100
Telephone	7	38.9	11	61.1	18	100
Personal Interview	2	15.4	11	84.6	13	100
Total	9	26.5	25	73.5	34	100%

Table 10: Operations With Corrections of Reported Data on Balance Sheet Questions

Stratum of Operation	Method of Data Collection	Data Item	Originally Reported Figure	Correcred Figure	% Change
83	Telephone 1/	June 1 Inventory	85	40	-52.9
83	Telephone 1/	June 1 Inventory	273	120	-56.0
83	Telephone	June 1 Inventory	211	163	-22.7
		Current Inventory	270	222	-17.8
85	Telephone 1/	June 1 Inventory	68	34	-50.0
		Current Inventory	112	71	-36.6
93	Telephone 1/	June 1 Inventory	400	300	-25.0
93	Interview	Hogs & Pigs Purchased	100	50	-50.0
94	Telephone	June 1 Inventory	300	515	+71.7
		Current Inventory	235	450	+91.5
94	Telephone	Hogs & Pigs Sold	200	500	+150.0
		Current Inventory	875	575	-34.3
94	Interview 1/	June 1 Inventory	2600	260	-90.0

RECOMMENDATIONS

1. Conduct a large scale research project on asking expected farrowings after sow inventory and before the remaining inventory questions. A split list test could determine the effect this change would have on the survey indications of farrowing intentions.

2. Respondents should not be provided with their previously reported expected farrowings since the negative aspects of doing so outweight any possible benefits. If an explanation for major differences (such as disease) between expected and actual farrowings is desired, a question asking respondents if they encountered any major problems in farrowing over the last three months might accomplish this purpose. A question like that might be better received by respondents than asking for an explanation of differences between expected farrowings and actual farrowings.

3. Since there was much difficultuy in completing the balance sheet with no apparent gain in accuracy of data, the balance sheet should not be considered as a useful alternative in obtaining hog data.

REFERENCES

1. Ford, Barry L. The Effect of Land Questions on the Multiple Frame Hog Survey, U.S. Department of Agriculture, Statistical Reporting Service, June 1975.

2. Vogel, Fred A. How Questionnaire Design May Affect Survey Data -- Wyoming Study, U.S. Department of Agriculture, Statistical Reporting Service, March 1974.

APPENDIX A

Crop Reporting Board

Economics, Statistics, & Cooperatives Service

U.S. Department of Agriculture

Hog and Pig Survey

September 1, 1979

Form Approved
O.M.B. Number 40-R3774
Approval Expires 3-31-81

C.E. 11-0087

M - NEB.

Stratum	ID - Segment	Tract	Subtract
00		01	01

Survey	Response	Office	Office	2 Tel. 3 Int. 7 TR 8 IR 9 Inac.
809 1	910	911	920	

Dear Reporter

Your HELP is needed to MAKE HOG and PIG ESTIMATES as ACCURATE as possible.

Your name was selected in a small sample of farmers in the State and a report is needed even if you have no hogs and pigs or only a few. Questions refer to hogs and pigs on all the land you operate. Facts about your operation will be kept confidential and used only in combination with similar reports from other producers.

Response to this survey is voluntary and not required by law. However, your cooperation is very important to insure timely and accurate estimates.

Please help reduce survey costs by completing this inquiry and returning it as soon as possible. Should your report be delayed in reaching us, one of our interviewers may request your assistance by phone or in person. The enclosed envelope requires no stamp. Thank you.

Respectfully,

John W Kirkbride

John W. Kirkbride, Chairman
Crop Reporting Board

Please make corrections in name, address and Zip Code, if necessary.

Is your operation known by another name, than printed above?

☐ NO

☐ YES *Enter name* _____

LAND OPERATED NOW

The following questions refer to the hogs and pigs on all the land you operate. Therefore, we first must determine the total acres you operate. Please make any necessary corrections when acres operated are entered. Include cropland, pastureland, woodland and wasteland.

1. How many ACRES are now in YOUR ENTIRE FARM or RANCH? ..... 900 .0

(Include *all land owned, rented or managed, but* exclude *land rented to or managed by others.*)

(Please turn to page 2.)

HOG AND PIG INVENTORY

Please report below all **HOGS** *and* **PIGS** *on the land you operate regardless of ownership. Include hogs and pigs purchased and still on hand.*

3. HOGS and PIGS for BREEDING

a. **Sows, gilts** and young **gilts** bred and to be bred. 301

1) Of these how many are expected to farrow:
   a) Sept., Oct. and Nov. 1979?. 331
   b) Dec. 1979, Jan. and Feb. 1980?. 332

b. **Boars** and young **males** for breeding. 302

c. **Sows** and **boars** no longer used for breeding. 303

4. HOGS and PIGS FOR MARKET and HOME USE

(Exclude breeding hogs already reported in item 3.)

a. Under 60 lbs. *(Include pigs not yet weaned.)*. 311

b. 60 — 119 lbs. 312

c. 120 — 179 lbs. 313

d. 180 lbs. and over *(Exclude hogs no longer used for breeding.)*. 314

5. **TOTAL** number of **HOGS** and **PIGS**. 300

REPORTED FARROWINGS

8. Your June 1 Report indicated that you expected to farrow _____ sows and gilts during June, July and August. . . 997

9. How many sows and gilts did you actually farrow during June, July and August. 326

(Please explain below differences between questions 8 and 9)

10. **PIGS** from these *(Item 9)* litters:
   a. Now on hand. 327
   b. Already sold. 328

Please explain difference between questions 8 and 9: _____

PURCHASES

11. **Hogs and Pigs** purchased since March 1, 1979 that are still on hand. 334

DEATHS AFTER WEANING

13. DEATHS of WEANED PIGS and OLDER HOGS during June, July and August? 335

OPERATION DESCRIPTION OF LAND

Additional information is needed on your operation to assist in detecting possible duplication in reporting. (Please make any necessary corrections when operation description information has been entered below.)

18. Do you *(the individual or operation listed on the face page)* operate AGRICULTURAL LAND in a partnership or joint operating arrangement? *(Exclude landlord-tenant, cash rent or share crop arrangements)*
(Check One) ☐ YES - *continue* ☐ NO - *turn to page 4.*

a. Was this partnership or joint operating arrangement formed since December 1978?

☐ YES ☐ NO

19. Who are the persons in this partnership or joint land arrangement with you?

a. Name _____ Telephone No. _____
(Last) (First) (Middle)

b. Address _____
(Route or Street) (City) (State) (Zip)

c. Partnership or Operation Name _____

a. Name _____ Telephone No. _____
(Last) (First) (Middle)

b. Address _____
(Route or Street) (City) (State) (Zip)

c. Partnership or Operation Name _____

20. How many acres of land are in this partnership or joint operating arrangement? . . . . . Acres

a. How many of these acres were included in Item 1, page 1? . . . . . Acres

21. How many hogs and pigs are now on the Item 20 acres . . . . . Number

a. How many of these hogs and pigs were included

HOG AND PIG BALANCE SHEET

We are testing another method of determining the number of hogs and pigs on your operation. This method uses the inventory reported during the last survey together with sales, purchases, births, and deaths to arrive at current inventory. The total number of Hogs and Pigs from your June 1 Report is listed below in question 1. If it is wrong, please correct. If question 1 is blank (not available), please enter your best estimate of the total number you had on hand June 1.

PREVIOUS INVENTORY

1. Total hogs and pigs reported on or about June 1. 990

SUPPLY

2. Pigs born in June, July and August now on hand or already sold . . . . . (add) 991
   (Bring forward from questions 10a + 10b on page 2)
3. Hogs and pigs purchased during June, July and August . . . . . (add) 992

DISAPPEARANCE

4. Hogs and pigs that died during June, July and August that were weaned pigs and older hogs. . . . . (Subtract) 993
   (Bring forward from question 13 on page 3)
5. All hogs and pigs sold or butchered during June, July and August . . . . . (Subtract) 995

CURRENT INVENTORY

6. Total hogs and pigs now on hand. . . . . *(Items 1+2+3-4-5=)* 996
   (Previous Inventory + Supply - Disappearance)

Please check this number with the number reported in question 5 on page 2. If different, please make any appropriate adjustments (cross through previous answer) on pages 2, 3 or 4 (including previous inventory) so total current inventory on page 2 and on page 4 are in close agreement. Some unaccounted difference may be due to pigs on hand June 1 that died before weaning. Please comment on whether this approach helps you report more accurately and on any difficulties encountered in completing the balance sheet.

REPORTED BY _____

TELEPHONE NUMBER _____ **DATE** _____
(Area Code) (Number)

OFFICE USE
912

NEBRASKA

Crop & Livestock Reporting Service

P.O. Box 81069, 273 Federal Building, Lincoln, Nebraska 68501
Phone: (402) 471-5541

SUBJECT: Enumerator Evaluation of September 1979 Hog Research Project Questionnaire (white)

[Please give us the benefit of your reactions to these format changes; it will be very helpful in determining if changes will be made.]

FROM: Bill Dobbs, Assistant Statistician in Charge, NEBRASKA SSO

a. Sows, gilts and young gilts bred and to be bred..... 301

1) Of these how many are expected to farrow:
a) Sept., Oct. and Nov. 1979?..... 331
b) Dec. 1979, Jan. and Feb. 1980?..... 332

1. (Question 3a) - 1)

a) Did the respondent you interviewed with the research questionnaire have any difficulty in completing the hog inventory questions because of the location of the expected farrowings questions? Please explain.

	Field Enumerator	Telephone Enumerator
Yes	0	0
No	12	1

b) Were the expected farrowings questions easier or more difficult to ask on the research questionnaire than on the regular questionnaire? Why?

	Field Enumerator	Telephone Enumerator
Easier	11	0
No Difference	0	1
More Difficult	1	0

8. Your June 1 Report indicated that you expected to farrow _____ sows and gilts during June, July and August... [997]

2. (Question 8)

a. What do you think was the effect, if any, of providing the respondent with the expected farrowings from the June 1 Report?

	Field Enumerator	Telephone Enumerator
No Effect	5	0
Caused Negative Attitude	4	0
Helpful In Conducting Interview	3	0
Influenced Response	0	1

b. Did the operators you interviewed have difficulty in explaining differences between expected June-August farrowings and actual June-August farrowings? Please explain.

	Field Enumerator	Telephone Enumerator
Yes	2	0
No	10	1

3. **Balance Sheet page 4.**

a. What reactions did the operators you interviewed have to the Hog and Pig Balance Sheet?

	Field Enumerator	Telephone Enumerator
Approval	3	0
Disapproval	7	0
Confusion	2	1

b. What questions were the most difficult for the respondent to answer correctly?

	Field Enumerator	Telephone Enumerator
June Inventory	1	0
Deaths	1	0
Sales	4	1
All of Them	1	0

c. What changes do you feel should be made to the balance sheet?

	Field Enumerator	Telephone Enumerator
No Change	5	0
Drop Entire Balance Sheet	3	0
Some Type of Change is Needed	2	1
Include Balance Sheet Question with Regular Questions	2	0

Number of telephone interviews completed _____

Number of personal interviews completed _____

_____ _____

Enumerator **Date**

NEBRASKA

APPENDIX C

Crop & Livestock Reporting Service

Nebraska Evaluation of the September 1979 Hog Research Project Questionnaire

Our reactions and evaluation of the new questionnaire format are:

1. Expected to farrow question following breeding stock.
   a. Enumerators had no trouble with the sequence and most seemed to prefer this order. This sequency of questions seemed to provide a better flow in the interview.

   b. With only three mailed returns, we could not really evaluate the difficulty or problems, if any, this group of respondents may have with this sequence.

   c. This sequence will put more emphasis on including in item 3a. only those animals which are of sufficient age or weight to be bred. Maybe that's all we are or should be getting anyway. Based on my observation of these and other survey questionnaires, I feel producers do not report young potential breeding stock in item 3a., until they are of the age to be selected for breeding. Some of our enumerators are also handling this situation this way.
   Currently our instructions call for including young gilts of <u>any</u> age in item 3a. If this was followed to the letter, every purebred operation would be reporting most of their inventory in item 3a. and 3b. These few reports distort the relationship of items (331+332)/301 and result in a nearly useless lower edit limit of .2 for edit code 6 in the GE edit.

   Possibly this could be clarified by making the following changes:
   1) Questionnaire format - change item 4 to read - ALL OTHER HOGS AND PIGS; and add in italics under Item 3 (*Include those of breeding age and older*).
   2) 1979 JES interviewer's manual instructions for item 3a. pg 631 - change (3) young gilts of breeding age which will be bred at a later date.

   For years our intentions survey indications have given us the most concern, these changes may make it easier for our enumerators and respondents to report the data and definitely will give us a better edit on the reported data.

d. The location of the questions did not cause a problem in obtaining the correct total inventory.

e. I feel this is a change in format that should be considered for future surveys.

2. Providing respondent with previously reported expected farrowings (item 8).
   a. Some enumerators received very negative comments on using this approach. Some reasons given were: it disputes the confidentiality of the questionnaire (different enumerators making contacts); respondents didn't like being pinned down on reasons for differences, etc.; it's a negative approach to get answers; incorrect data entered-original data probably reported by a wife, etc.

   b. I do not recommend using this approach. The negative comments from respondents and the amount of pre-survey office work required more than negate possible benefits.

3. Hog and Pig balance sheet.
   a. Most respondents had real problems making this work out. Different reporting dates than June 1 caused marketing differences and the imprecision of accounting for deaths of unweaned pigs on hand June 1 were probably the two main reasons for balancing problems.

   b. Both the enumerators and respondents thought the balance sheet was too time consuming and troublesome. It required returning to the operator's records in many cases and for some it would mean the difference between reporting or being a refusal. It also loses the confidentiality of their report and this adverse feeling cannot be turned around easily.

   c. I recommend that the balance sheet approach not be used for obtaining livestock data because of the respondents' difficulty in accurately reporting the data and our concern over the reliability of actual data that were reported for most reports. The respondent needed to be guided through the balance sheet in order to get the figures and then most data were forced in order to balance.