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ABSTRACT

This report documents the current QAS imputation procedures, discusses their development, and quantifies the effect of imputation on the survey expansions from the December 1986 and June 1987 surveys. The quarterly surveys have thoroughly tested the procedures, with nonresponse typically ranging between 15 and 25 percent. Comparisons are made between re-weighted versus full imputation multiple frame summary expansions for several major items. The differences averaged about 2 to 3 percent. This report addresses some of the problems experienced with area imputation in the December 1986 survey, and stresses the importance of correct section presence/absence coding in avoiding future imputation "busts."

The procedures have evolved over a span of approximately two years beginning in the fall of 1985 and culminating with the procedures used for the June 1987 survey. No changes to the procedures have been made since June 1987, nor are any currently planned. With the "finalization" of the procedures the author feels that now is the time for more rigorous evaluations of the operational procedures versus alternate imputation procedures currently in use by other survey organizations.

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FOREWORD

The developmental phase of the Quarterly Agricultural Survey (QAS) imputation procedures has been an evolutionary process spanning almost two years. Preparation of the original specifications and initial programming began in fall of 1985, and program development culminated with the procedures used in June 1987. The imputation procedures were originally developed for crops and grain stocks. Imputation modules have been subsequently added for livestock but are not currently used operationally, due to the history of manual imputation for livestock area data and the existence of a special "adjusted" summary for use with livestock list data.

The imputation procedures as designed are predicated on the concepts of (1) generality, (2) maximum use of available information, (3) affordability and (4) availability for immediate implementation.

Generality was considered essential due to the quarter to quarter and state to state variability in QAS questionnaire content. An imputation procedure lacking sufficient generality would need to be rewritten each quarter, a resource-consuming burden unsuitable for an ongoing survey.

One of the main advantages of imputation, as compared to other methods of nonresponse adjustment, is the inherent capability with imputation to "customize" imputed data for a nonresponse record based upon auxiliary information available in the record. In contrast, expansion factor adjustment (re-weighting) can only reflect averages of current survey data from respondents within the same sampling stratum, making no use of ancillary data (i.e., list frame control or previous survey data) which may be available for a particular nonresponse record. The current imputation procedures are based upon rather extensive modeling of any previous survey or control data which are available for a particular nonresponse record.

Practicality played a key role in the development of the imputation procedures. The constraint of having some form of imputation procedure available for immediate implementation with the December 1985 survey was a primary driver in the developmental process which followed. This need arose from integrating the survey questionnaire without the capability to summarize by section of the questionnaire. The alternatives were to require manual imputation for partially completed questionnaires or to discard completed sections if not all sections were complete. The short time frame in which the QAS program became fully operational, as well as the lack of history for an integrated survey program, precluded the possibility of extensive research for the imputation process prior to implementation. Thus, procedures were developed based upon the logic used when manually imputing data. The procedures were first used in December 1985 and have evolved as deficiencies were perceived from reviewing each successive quarter's survey results.

The second prong of the practicality issue and a basic concept upon which the current imputation system was based, is the necessity of affordability. The imputation routines currently in place are section specific and exact. There is no error structure applied to the imputed means, as would be needed in a truly distribution-preserving procedure. The decision to slight distributional structure in the imputation process was based primarily on balancing cost versus potential benefit. Considering the large number of

variables which are processed with each quarter's QAS, maintaining a distributional structure for each would be extremely expensive. While there are many alternative procedures available which maintain this type of structure, these are generally used with much smaller data sets or less frequently. The primary advantage in the retention of distributional structure in an imputation procedure would be improved variance estimation.

From December 1985 through June 1987 the system went through a phase of development and transition, as refinements and enhancements were incorporated as deemed appropriate from reviewing previous quarters' survey results. While the resulting instability in the procedures caused some lack of comparability in the survey expansions from quarter to quarter, it was felt that the adjustments should be incorporated in order to "finalize" the imputation procedures as quickly as possible. The impetus for each change would come from reviewing previous survey results in conjunction with SSO input. Quantitative justification for implementation was based upon parallel testing of summary expansions using the previous quarter's data with the old and new procedures. To maintain as much quarter to quarter comparability as possible, while the procedures were in the developmental phase, adopted changes were limited to those from which substantial improvements in the summary expansions were anticipated.

The "imputation team" considers the imputation routines used as of the June 1987 survey to be the best exact procedures that they can empirically develop. With the stabilization of these procedures, the author of this report feels that now is the time for more rigorous evaluations of the operational procedures versus alternative imputation procedures currently in use by other survey organizations.

If imputation is to be a permanent part of the NASS survey program, then the statistical defensibility of the operational procedures needs to be addressed. To establish defensibility, resources should be allocated (1) to compare the NASS exact imputation procedures against alternative approaches used outside of NASS and widely discussed in statistical literature, and (2) to investigate ways to compensate for variance understatement resulting from imputation.

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INTRODUCTION

NASS currently summarizes Quarterly Agricultural Survey (QAS) data using two distinct approaches to account for survey nonresponse. One summary, referred to as summary 1 in this report and in standard Agency terminology, reflects essentially an expansion factor adjustment (re-weighting) approach. The second summary, referred to as summary 2, is based upon full imputation for nonresponse (i.e., all records are considered usable). The environment in which these two summary procedures operates is described in the ensuing paragraphs.

The questionnaires used are divided into sections, with each section containing a specific type of data (i.e., acreage and production, grain stock inventory, or hog inventory). A section completion-presence/absence (P/A) code is included in each section indicating whether or not the section is usable. For nonusable sections, questionnaire coders have the option of specifying whether or not the operator appears to have the type of data specific to that section of the questionnaire.

The expansion factor adjustment (re-weighting) summary indirectly accounts for all nonresponse list records with means based upon "usables" in the stratum of residence. While these stratum level means are not directly applied to the nonresponse records, the net result on the direct expansions is the same as if they were. The current summary system used for QAS is not capable of summarizing survey data by section of the questionnaire. Therefore, each questionnaire must be determined as a complete entity to be either usable or not usable. This rigidity of the summary system forces the Statistical Methods Branch to establish criteria for determining the utility of any list questionnaire containing partially usable data (i.e., for which at least one but not all sections are usable). The criterion currently employed for QAS is that any list questionnaire with a usable acreage and production section is deemed usable for summarization of all items in all sections of the questionnaire. Conversely, any list questionnaire for which the acreage and production section is not usable is considered not usable in summary. This criterion results in summary 1 discarding any reported grain stocks or hog data in a list questionnaire with a nonusable acreage and production section. Nonusable grain stock and hog sections in a list questionnaire with a usable acreage and production section are by necessity made usable through imputation. Furthermore, production can be entered as unknown but positive with a cell entry of "-1" in a usable acreage and production section. Any such missing production values are also imputed prior to summary. Therefore, even summary 1 contains some imputed data, and as such does not represent totally "clean" re-weighted indications.

The full imputation summary (referred to in this report as summary 2) considers all records usable. Nonresponse records are made usable prior to summarization through a

direct assignment of data in the imputation system. The imputation procedures key on the presence/absence coding of each section, and rely heavily on ratio estimation to "complete" nonusable reports. Through ratio estimation the procedures attempt to use any list frame control or previous survey data which are available for a nonresponse record. If fewer than 2 usable reports are available for the construction of a ratio estimate consistent with the presence/absence coding of a particular section of the questionnaire, then the procedures default to stratum means. Where possible, imputation means are generated within crop reporting district, in order to reflect the geographical differences in farming practices within a state as well as the basic stratification of the sample.

Both summaries require complete nonoverlap (NOL) area data, since the current summary procedures do not re-weight for incomplete area tracts. Therefore, area expansions from both summaries reflect imputed data for area NOL nonresponse.

These analyses are designed to quantify the frequency of imputation and its impact on our December 1986 survey expansions. Where appropriate, corresponding data tables for June 1987 are supplied to show the impact of subsequent adjustments to the imputation procedures. Unless otherwise noted, all tables and discussion will relate to the December 1986 survey.

The tables and charts in this report (Appendix I) compare the results of summary 1 to summary 2, with some benchmarking to the JES. The reader should be aware, however, that the summary 1 versus summary 2 expansions do not represent entirely pure comparisons of the two nonresponse adjustment procedures. Due to current summary limitations, even summary 1 contains minimal (mostly item as opposed to section) list imputation and full NOL imputation. (Note: Documentation on the imputation procedures used for list and NOL samples as of the June 1987 survey is included in Appendices II & III of this report.) To interpret the summary comparisons contained in these analyses, the following points regarding summary 1 and summary 2 must be understood:

- All NOL questionnaires are made usable through imputation for representation in both summary 1 and summary 2 expansions. Current summary procedures do not utilize adjustment of expansion factors for incomplete area data.

- All list questionnaires are made usable through imputation for representation in summary 2 expansions.

- Any list questionnaire with a usable crops section is considered usable for summary 1 expansion of all items in all sections. Conversely, any list questionnaire for which the crops section is not complete is considered nonusable, regardless of the completion status of the other sections of the questionnaire.

  (Note: Examples of the December 1986 list and area questionnaires are included in Appendices IV & V of this report.)

- Imputation for positive but unknown items (coded "-1") is only reflected in production and stocks data. Survey statisticians have the option of either manually imputing missing acreage or hog items in an otherwise complete section, or declaring the whole section nonusable.

Therefore, list imputation represented in summary 1 is on an "as required" basis and is limited to production, stock and hog items in questionnaires with a usable crops section. This approach for list summarization results in summary 1 reflecting mostly item imputation (for production and stocks), with a minimal amount of entire section imputation for stocks and hogs.

List imputation represented in summary 2 includes any imputation reflected in summary 1 plus full imputation for refusals and inaccessibles, as dictated by the presence/absence coding of the respective sections.

Area (NOL) imputation is also dictated by the presence/absence coding of the respective sections, and since all records have to be made usable for both summary 1 and summary 2 expansions, the NOL imputation reflected in the two summaries is identical.

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ANALYSES

The following discussion refers to the tables and charts in Appendix I. The tables will be discussed individually and the charts, globally.

Table 1 displays by state and summary type the percentage of December 1986 list and NOL samples requiring entire section imputation. As discussed in the introduction to this report, usable list questionnaires for summary 1 expansion are determined by the utility of the crops section. Therefore, as can be seen in Table 1, summary 1 includes no entire crops section imputation for list questionnaires. The entire hog and/or stocks sections for list questionnaires are imputed in summary 1 only in the rare cases where the crops section is usable but the hog or stocks section is not. Also, as discussed in the introduction and displayed in this table, NOL imputation is identical for summaries 1 and 2. This fact will be important to keep in mind when comparing expansions from the two summaries. Any differences in level will be solely attributable to the list samples.

As can be seen in Table 1, no NOL imputation is performed on hog data. This was a policy decision made in order to ensure continued comparability in our hog indications series. Both the questionnaire coding and imputation program capabilities are such that hog NOL imputation could be performed after the fact, and compared to the operational indication. This would require simply activating the in-place imputation procedures to impute over the manually edited-in entire farm data, and resummarizing to assess the ultimate effect on the direct expansions. While this activity is beyond the scope of these analyses, as time and resources permit, it would be an excellent topic for a separate investigation. The results could give us our first clear benchmark for how NOL imputation is performing relative to manual imputation.

Table 2 displays the actual indication levels for summary 1 and summary 2, aggregating all states for which the particular items appeared on the questionnaire. The CV's displayed are somewhat understated, since the imputation procedures utilized are exact rather than distribution-preserving. However, a comparison of the summary 1 and summary 2 CV's indicate that the understatement is probably rather small. The summary 1 CV's for acreages include no list imputation, and area imputation identical to that represented in summary 2. Therefore, the differences in CV level between summaries 1 and 2 for acreage items represent the relative understatement in the multiple frame (MF) CV's resulting from list imputation.

Table 2 also presents the percentages of the multiple frame direct expansions contributed by imputed data and by the NOL domain. Summary 1 expansions included about 1 to 6 percent imputation for acreages, 5 to 11 percent for production, and 7 to 13 percent for stocks. Percentages of summary 2 expansions contributed by imputation averaged between 13 and 24 percent for acreages, 20 to 28 percent for production, and 20 to 30 percent for stocks. The percentages of the multiple frame expansions for grain stock capacity contributed by imputed data were somewhat below those for other stock items, since list frame control capacity was brought in through the machine edit to fill data gaps for this item. Post-edit imputation (as reflected in this report) was used only if list frame control capacity was not available. (Note: The policy of "imputing" grain stock capacity in the machine edit was discontinued with the June 1987 survey.) The NOL contribution to the multiple frame direct expansion was generally in the 15 to 20 percent range for most summarized items.

The last column in Table 2 presents the relative differences between the summary 1 and summary 2 direct expansions. For most items the expansions were within 2 to 3 percent of one another. It's interesting to note that stock items tended to be slightly higher in summary 2 relative to summary 1, whereas acreages were somewhat lower. Subsequent adjustments to the imputation procedures with respect to the handling of "cropland" resulted in June 1987 summary 1 versus summary 2 acreage expansions which were more in line with the pattern demonstrated in the grain stock expansions. Table 2A displays the results of June 1987 summarization.

Table 3 demonstrates some acreage comparisons between summary 1, summary 2 and the 1986 JES. For most crops total comparability between the DAS and the JES does not exist, due to the time differences between the surveys and differences in questionnaire content. For items where comparability does exist, however, both summary 1 and summary 2 appear to have performed fairly well relative to the JES, both in terms of harvested acreages and harvested to planted ratios. For wide spread crops (i.e., corn) the CV's of the JES expansions were virtually identical with those of the multiple frame expansions. For rarer crops the precision benefits of multiple frame sampling were more evident, with the multiple frame expansions outperforming the JES. For purposes of comparison, Table 3A displays the summary 1 and summary 2 expansions from the 1987 June Agricultural Survey and the corresponding 1987 JES expansions.

Table 4 displays December 1986 summary 1 and 2 yields for most of the major crops, with their associated percentages of imputed production and harvested acreage. Even for crops with 30 percent of the production and 20 percent of the acreage imputed, there was virtually no difference between summary 1 and summary 2 yields. This is because the same crop reporting district average yields reported by respondents (summary 1) was imputed for nonrespondents (summary 2).

Table 5 is an attempt to address perhaps the deepest pitfall in imputation, and the one which caused the greatest number of problems with our December 1986 summaries. Paradoxically, the main strength of imputation relative to expansion factor adjustment can also be its greatest weakness. This strength/weakness is its use of ancillary data (i.e., crop reporting district, presence/absence coding, etc.) to "customize" imputation means to the particular record requiring imputation of data. This approach instills in the procedures a certain information sensitivity which is lacking in expansion factor adjustment, where in effect all nonresponse samples receive overall means of usable reports in the strata in which they reside. This information sensitivity is intuitively appealing, in that with proper coding we should have every record represented in summary with the best possible data that our procedures can supply.

This data sensitivity does, however, create a volatile summary situation that is highly dependent on accurate questionnaire coding, especially (in our case) section presence/absence coding. This volatility has been especially evident in area imputation, where the current procedures generate means at the level of ag-type within crop reporting district. Ag-type is a variable generated in imputation which classifies each record as "cultivated" or "other" based on its land use stratification.

Within levels of imputation mean generation, a partition of the usable samples is performed to generate separate mean arrays for use with the various presence/absence

coding options available for nonresponse in a particular section of the questionnaire. This partitioning can result in the availability of few usable records for mean generation for "other" records coded as "unknown" or (especially) "has" for crops or stocks. If at least two usable reports are not available in a particular partition for a required imputation, then the mean selection routines default to a back-up level, normally including data from "cultivated" as well as "other" records.

What happened too often in actual practice was that because of the presence/absence coding of nonresponse in the "other" land use strata, NOL tracts with large expansion factors (and often tract/farm weights of 1.0) were imputed with means based primarily on agricultural operations, in a few cases resulting in unacceptable expansions or "busts".

Table 5 displays state by state all of the nonresponse NOL records in summary strata 7 and 8, indicating the size of the expansion factors suggesting the impact on the multiple frame expansions such records can have. While the section presence/absence coding of the tracts displayed in this table was verified to be correct, not surprisingly, some of these tracts resulted in hefty expansions. During the survey summarization, coding of some area tracts turned out to be incorrect, requiring adjustments and precipitating reruns in several states. In some cases tracts were coded as "unknown" which probably should have been coded as valid zeroes. Miscoding of section presence/absence codes, particularly in these strata, can have a profound effect on survey expansions.

The ultimate solution to the NOL expansion problem may require a re-evaluation of our procedures for NOL imputation, but most definitely will require an increased awareness of the impact of section presence/absence coding (particularly in "other" land use strata) and the manual imputation of entire farm acreage. While entire farm acreage is not machine imputed, it is extremely important not only as a survey indication of land in farms, but also as the basis of the tract weight for weighted tract expansions. Our future training and written instructions on survey procedures will need to stress the importance of both correct presence/absence coding and prudent assignment of entire farm acreage to nonresponse records.

Following Table 5 are a series of 12 bar charts, which graphically display the percentage of samples imputed and the resulting contribution of imputed data to the multiple frame direct expansions for soybean harvested acreage, production and stocks. Graphical analyses of both summary 1 and summary 2 expansions are provided with stacked bar breakdowns of the list and NOL contributions. Graphs of the percentages of samples imputed were scaled to match the corresponding graphs of the percentages of the multiple frame direct expansions imputed, in order to facilitate comparisons. There are several cases (mostly due to high NOL expansions) where small percentages of imputed samples contributed high percentages of the multiple frame expansions.

Following the bar charts are three U.S. maps which display summary 2 imputation contributions to the multiple frame direct expansions of corn harvested acres, production and stocks. As demonstrated in these maps, 2 states exceeded 30 percent imputation of corn harvested acres, 6 states exceeded 30 percent imputation of corn production, and 10 states exceeded 30 percent imputation of corn stocks. The U.S. figures were 19 percent, 23 percent and 26 percent, respectively. These percentages were reflective of the percentage of nonusable reports, and were comparable to expansion factor adjustments performed in summary 1.

SUMMARY

The December 1986 Agricultural Survey proved to be a critical test of our QAS imputation procedures. Nonresponse rates were relatively high, generally averaging in the 15 to 25 percent range. Item nonresponse for grain stock and production items often exceeded 30 percent.

Parallel summaries were run which essentially provided comparisons of the results of utilizing the two distinct approaches to account for survey nonresponse: (1) expansion factor adjustment (re-weighting) and (2) imputation. Differences in the level of the multiple frame direct expansions between the two summary procedures were generally in the 2 to 3 percent range.

There has been considerable discussion over the past two years as to which of the two nonresponse adjustment approaches should be adopted as the NASS standard. Valid arguments can be made for each approach, and based upon QAS experience to date, it appears that either approach could be accepted without dramatically shifting indications series. List expansions resulting from the two nonresponse adjustment procedures, while tracking at somewhat different levels, have been generally well behaved and consistent from quarter to quarter.

Perhaps a greater concern--NOL nonresponse adjustment--has been overlooked with the discussions of whether the NASS "operational" summary expansions should be based upon full imputation for nonresponse, or summary adjustment with minimal imputation. NOL imputation tends to be rather volatile due to the data sensitivities inherent in imputation procedures, coupled with the large expansion factors often attached to nonresponse records. Since expansion factor adjustment is not currently utilized for area samples, imputation is required for all area nonresponse and is reflected identically in the summaries from both procedures.

Whether NASS adopts a policy of full imputation or expansion factor adjustment to deal with the nonresponse issue, significant improvements in the summary process will ultimately hinge on our efforts with the NOL domain, both in terms of improved questionnaire coding and possible refinements to the automated nonresponse adjustment procedures.

APPENDIX I

Data Tables and Charts

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Table 1

December 1986 Agricultural Survey
Percentage of Summarized Samples Requiring Entire Section Imputation

State	Summary Type	-Crops Section- % of List	-Crops Section- % of NOL	-Hog Section- % of List	-Hog Section- % of NOL	-Stocks Section- % of List	-Stocks Section- % of NOL
AL	1	--	3.59	0.88	--	0.44	3.35
	2	5.17	3.59	5.83	--	5.42	3.35
AZ	1	--	3.89	0.00	--	0.00	4.79
	2	12.89	3.89	12.52	--	12.52	4.79
AR	1	--	9.94	0.21	--	0.67	10.53
	2	16.26	9.94	16.13	--	16.57	10.53
CA	1	--	9.30	0.21	--	0.27	10.05
	2	14.82	9.30	14.41	--	14.64	10.05
CO	1	--	17.81	0.41	--	0.48	19.38
	2	20.86	17.81	20.96	--	21.02	19.38
CT	1	--	2.63	1.09	--	0.00	2.63
	2	11.59	2.63	12.08	--	11.59	2.63
DE	1	--	28.36	1.48	--	0.37	29.85
	2	10.89	28.36	11.22	--	10.23	29.85
FL	1	--	3.10	0.54	--	0.54	3.68
	2	7.20	3.10	7.70	--	7.70	3.68
GA	1	--	6.77	1.00	--	0.59	7.10
	2	10.73	6.77	11.30	--	11.15	7.10
ID	1	--	9.89	0.28	--	0.35	14.29
	2	20.14	9.89	20.37	--	20.42	14.29
IL	1	--	9.63	0.36	--	2.88	9.63
	2	20.12	9.63	20.05	--	22.21	9.63
IN	1	--	14.75	0.59	--	0.59	16.50
	2	18.21	14.75	18.39	--	18.50	16.50
IA	1	--	10.39	1.56	--	0.56	9.70
	2	17.02	10.39	18.05	--	17.09	9.70
KS	1	--	25.44	0.70	--	0.18	28.40
	2	36.76	25.44	34.47	--	35.91	28.40
KY	1	--	4.72	0.55	--	0.66	4.72
	2	10.99	4.72	11.28	--	11.43	4.72
LA	1	--	8.90	0.41	--	0.50	9.25
	2	12.56	8.90	12.85	--	12.92	9.25
ME	1	--	3.65	0.76	--	0.00	3.65
	2	15.30	3.65	15.95	--	15.30	3.65
MD	1	--	13.99	0.23	--	0.90	16.43
	2	12.94	13.99	12.94	--	13.33	16.43
MA	1	--	3.70	0.45	--	0.00	3.70
	2	14.89	3.70	15.27	--	14.89	3.70
MI	1	--	10.44	1.00	--	1.00	10.10
	2	21.49	10.44	21.70	--	21.97	10.10

Table 1 (Continued)

State	Summary Type	-Crops Section- % of List	% of NOL	-Hog Section- % of List	% of NOL	-Stocks Section- % of List	% of NOL
MN	1	--	11.75	1.05	--	1.35	15.36
	2	23.57	11.75	24.13	--	24.50	15.36
MS	1	--	2.47	0.56	--	0.19	2.67
	2	5.02	2.47	5.49	--	5.20	2.67
MO	1	--	10.12	1.01	--	0.43	10.54
	2	16.97	10.12	17.08	--	16.93	10.54
MT	1	--	8.09	0.15	--	0.73	8.09
	2	19.08	8.09	19.20	--	19.67	8.09
NE	1	--	10.97	1.14	--	1.05	10.66
	2	24.81	10.97	24.33	--	25.12	10.66
NV	1	--	0.00	0.00	--	0.00	2.06
	2	13.57	0.00	13.57	--	13.07	2.06
NH	1	--	0.00	0.00	--	0.00	0.00
	2	5.88	0.0	5.88	--	5.88	0.00
NJ	1	--	5.26	0.23	--	0.46	6.22
	2	13.10	5.26	10.28	--	11.49	6.22
NM	1	--	6.43	0.11	--	2.75	8.21
	2	13.05	6.43	12.15	--	14.94	8.21
NY	1	--	6.54	1.00	--	2.68	8.72
	2	19.26	6.54	18.76	--	20.37	8.72
NC	1	--	4.61	0.90	--	0.24	4.93
	2	11.84	4.61	12.32	--	11.84	4.93
ND	1	--	25.00	0.59	--	0.59	25.00
	2	22.84	25.00	23.01	--	22.97	25.00
OH	1	--	15.37	0.54	--	0.49	14.45
	2	13.18	15.37	13.48	--	13.44	14.45
OK	1	--	9.35	0.28	--	0.34	11.14
	2	12.29	9.35	11.59	--	11.79	11.14
OR	1	--	3.86	0.25	--	0.51	4.11
	2	8.69	3.86	8.84	--	9.07	4.11
PA	1	--	7.36	0.30	--	1.58	8.63
	2	8.61	7.36	8.54	--	9.85	8.63
RI	1	--	0.00	0.00	--	0.00	0.00
	2	22.95	0.00	22.95	--	22.95	0.00
SC	1	--	3.91	0.80	--	0.57	6.15
	2	12.01	3.91	12.21	--	12.21	6.15
SD	1	--	10.24	0.51	--	0.41	12.05
	2	24.56	10.24	18.84	--	23.98	12.05
TN	1	--	0.40	0.12	--	0.06	0.61
	2	4.50	0.40	4.62	--	4.56	0.61
TX	1	--	7.49	0.18	--	0.03	7.67
	2	15.74	7.49	15.69	--	15.59	7.67

Table 1 (Continued)

State	Summary Type	-Crops Section- % of List	-Crops Section- % of NOL	-Hog Section- % of List	-Hog Section- % of NOL	-Stocks Section- % of List	-Stocks Section- % of NOL
UT	1	--	8.41	1.94	--	2.76	13.59
	2	13.59	8.41	14.71	--	15.41	13.59
VT	1	--	2.38	0.00	--	0.00	4.76
	2	9.50	2.38	9.50	--	9.50	4.76
VA	1	--	4.15	0.54	--	0.43	8.01
	2	17.04	4.15	17.22	--	17.13	8.01
WA	1	--	11.50	0.08	--	0.16	11.75
	2	20.59	11.50	20.65	--	20.71	11.75
WV	1	--	4.18	0.15	--	0.15	6.08
	2	6.14	4.18	5.43	--	5.71	6.08
WI	1	--	13.31	0.27	--	0.38	13.91
	2	25.71	13.31	25.71	--	25.95	13.91
WY	1	--	16.78	1.32	--	3.29	20.13
	2	19.89	16.78	19.89	--	21.61	20.13
US	1	--	8.47	0.59	--	0.71	9.47
	2	17.09	8.47	16.90	--	17.36	9.47

Table 2

December 1986 Agricultural Survey
Indication Levels from Summary 1 versus Summary 2

Summary Item	Summary 1 MF DE (000)	Summary 1 MF CV (%)	Summary 1 % MF DE Imputed	Summary 1 % NOL of MF	Summary 2 MF DE (000)	Summary 2 MF CV (%)	Summary 2 % MF DE Imputed	Summary 2 % NOL of MF	Sum 1/Sum 2 (%)
Capacity	13534683	0.99	5.58	16.60	13829642	0.89	11.25	16.24	97.87
Corn Stks	6512906	1.28	7.49	15.24	6752732	1.11	26.47	14.70	96.45
Soybean Stks	1002107	1.61	10.69	18.77	1030583	1.45	27.37	18.25	97.24
All Wheat Stks	1051795	2.27	12.52	15.27	1065400	1.97	30.82	15.08	98.72
All Rice Stks	32088	6.90	7.73	9.98	32378	6.36	21.29	9.89	99.10
Corn Pltd	83143	1.37	4.52	20.80	81332	1.35	18.43	21.26	102.23
Corn Harv	74564	1.09	4.60	20.12	72799	1.04	18.63	20.60	102.42
Corn Prod	8866569	1.13	9.52	19.14	8636653	0.78	23.11	19.65	102.66
Soybean Pltd	64547	1.28	4.66	20.09	63089	1.23	17.60	20.56	102.31
Soybean Harv	62916	1.29	4.64	19.80	61461	1.25	17.64	20.27	102.37
Soybean Prod	2136009	1.23	9.04	18.63	2082455	1.17	22.00	19.11	102.57
All Wheat Harv	62294	1.25	5.69	17.01	61070	1.17	22.69	17.35	102.00
All Wheat Prod	2150335	1.29	9.81	17.29	2106855	1.22	26.00	17.65	102.06
Cotton Pltd	10499	3.03	3.28	19.03	10342	2.87	13.41	19.32	101.52
Cotton Harv	9316	3.14	3.08	19.19	9199	2.97	13.12	19.43	101.27
Cotton Prod	10438	3.83	10.65	20.21	10431	3.70	20.03	20.23	100.07
Sorghum Pltd	16499	2.23	5.90	19.55	15991	2.07	23.01	20.17	103.17

Table 2 (Continued)

Summary Item	Summary 1 MF DE (000)	Summary 1 MF CV (%)	Summary 1 % MF DE Imputed	Summary 1 % NOL of MF	Summary 2 MF DE (000)	Summary 2 MF CV (%)	Summary 2 % MF DE Imputed	Summary 2 % NOL of MF	Sum 1/Sum 2 (%)
Sorghum Harv	15228	2.32	5.95	18.97	14753	2.16	23.33	19.58	103.22
Sorghum Prod	1021146	2.39	10.83	18.88	988132	2.20	28.27	19.51	103.34
All Rice Pltd	2531	2.75	1.60	9.25	2486	2.67	15.67	9.42	101.78
All Rice Harv	2521	2.76	1.60	9.29	2477	2.68	15.68	9.45	101.78
All Rice Prod	142401	2.73	5.90	8.68	140397	2.61	19.86	8.81	101.43
Oats Pltd	5408	2.21	2.96	18.18	5455	1.96	21.56	18.02	99.14
Oats Harv	2896	2.76	2.90	17.61	2957	2.40	22.48	17.25	97.94
Oats Prod	156735	2.80	9.34	16.74	159767	2.41	27.50	16.42	98.10
Barley Pltd	11668	1.88	3.93	14.43	11676	1.72	22.01	14.42	99.93
Barley Harv	10840	1.93	4.08	14.50	10858	1.76	22.18	14.48	99.83
Barley Prod	551983	2.03	7.41	13.76	551591	1.83	24.70	13.77	100.07

Table 2A

June 1987 Agricultural Survey
Indication Levels from Summary 1 versus Summary 2

Summary Item	Summary 1 MF DE (000)	Summary 1 MF CV (%)	Summary 1 % MF DE Imputed	Summary 1 % NOL of MF	Summary 2 MF DE (000)	Summary 2 MF CV (%)	Summary 2 % MF DE Imputed	Summary 2 % NOL of MF	Sum 1/Sum 2 (%)
Capacity	12496837	0.96	5.45	19.96	13027670	0.86	22.77	19.15	95.93
Corn Stks	3162784	1.77	7.70	18.69	3354701	1.53	27.62	17.62	94.28
Soybean Stks	228456	2.96	12.46	22.66	247028	2.49	32.84	20.96	92.48
All Wheat Stks	522931	2.78	10.08	15.41	542151	2.32	28.63	14.87	96.45
Sorghum Stks	133986	5.13	10.59	20.95	141959	4.31	32.97	19.77	94.38
Corn Pltd	65915	0.91	---	20.92	67726	0.83	17.34	20.36	97.33
Corn Harv	30946	1.58	---	41.28	31459	1.49	13.00	40.60	98.37
Soybean Pltd	58767	1.10	---	21.56	60310	1.00	17.05	21.01	97.44
All Wheat Pltd	61238	1.11	---	16.91	62454	0.98	18.60	16.58	98.05
All Wheat Harv	54050	1.13	---	16.87	55026	1.00	18.75	16.57	98.23
Cotton Pltd	10488	3.03	---	19.49	10742	2.77	12.84	19.03	97.63
Sorghum Pltd	11740	2.40	---	18.71	12050	2.14	20.10	18.23	97.42
Sorghum Harv	10270	2.59	---	18.80	10515	2.30	20.00	18.37	97.67
All Rice Pltd	2356	3.30	---	12.79	2385	3.11	16.63	12.63	98.80
All Hay Harv	59700	1.04	---	33.69	60928	0.97	12.74	33.01	97.99
Oats Pltd	16447	1.48	---	25.14	16878	1.34	16.35	24.49	97.45
Oats Harv	6864	1.85	---	22.95	7063	1.66	16.95	22.31	97.19
Barley Pltd	10739	2.28	---	17.68	10755	2.13	15.90	17.66	99.85
Barley Harv	10030	2.31	---	17.64	10064	2.17	16.10	17.58	99.66

Table 3

December 1986 Agricultural Survey
Acreage Comparisons of Summary 1 and Summary 2 vs. 1986 JES[1/]

Crop Name	---- Summary 1 ---- Harvested Acres (000)	CV (%)	H/P (%)	---- Summary 2 ---- Harvested Acres (000)	CV (%)	H/P (%)	--------- JES --------- Acres for Harvest (000)	CV (%)	H/P (%)
Corn	74564	1.09	89.68	72799	1.04	89.51	71289	1.11	93.06
Soybeans	62916	1.29	97.47	61461	1.25	97.42	--	--	--
Winter Wheat	44233	1.51	--	42666	1.44	--	44465	1.75	83.27
Upland Cotton	9316	3.14	88.73	9199	2.97	88.95	--	--	--
Sorghum	15228	2.32	92.30	14753	2.16	92.26	14047	3.51	94.57
All Rice	2521	2.76	99.60	2477	2.68	99.64	--	--	--
Oats	2896	2.76	53.55	2957	2.40	54.21	7464	2.96	51.16
Barley	10840	1.93	92.90	10858	1.76	92.99	12891	3.21	95.21
Rye	335	8.87	59.71	344	7.08	60.03	800	11.78	43.15

1/ Oat, Barley and Rye expansions are not comparable between the DAS summaries and the JES, since these crops were not on the December Questionnaire in all states.

Table 3A

June 1987 Agricultural Survey
Acreage Comparisons of Summary 1 and Summary 2 vs. 1987 JES

Crop Name	---- Summary 1 ---- Planted Acres (000)	CV (%)	---- Summary 2 ---- Planted Acres (000)	CV (%)	------ JES ------ Planted Acres (000)	CV (%)
Corn	65915	0.91	67726	0.83	65890	1.16
Soybeans	58767	1.10	60310	1.00	58621	1.35
Winter Wheat	44342	1.36	45469	1.20	47120	1.63
Upland Cotton	10488	3.03	10742	2.77	10372	3.36
Sorghum	11740	2.40	12050	2.14	10951	3.62
All Rice	2356	3.30	2385	3.11	2202	7.28
Oats	16447	1.48	16878	1.34	17834	2.04
Barley	10739	2.28	10755	2.13	11303	3.32
Rye	1958	6.59	2003	6.24	1836	9.29

Table 4

December 1986 Agricultural Survey
Yield Comparisons of Summary 1 vs. Summary 2

Crop Name	Summary 1 Yield	Summary 1 % Production Imputed	Summary 1 % Harvested Acres Imputed	Summary 2 Yield	Summary 2 % Production Imputed	Summary 2 % Harvested Acres Imputed
Corn	118.49	9.52	4.60	118.22	23.11	18.63
Soybeans	33.95	9.04	4.64	33.88	22.00	17.64
Durum Wheat	33.37	7.04	4.72	33.36	29.33	28.00
Spring Wheat	32.36	6.62	3.00	32.18	26.06	23.64
Winter Wheat	35.32	10.98	6.65	35.40	25.72	21.91
All Wheat	34.52	9.81	5.69	34.50	26.00	22.69
Sunflowers	1367.48	3.75	0.72	1366.10	25.76	23.56
Oats	54.13	9.34	2.90	54.04	27.50	22.48
Sorghum	67.06	10.83	5.95	66.98	28.27	23.33
Rye	35.99	10.48	1.39	36.06	31.44	23.73
All Rice	56.49	5.90	1.60	56.69	19.86	15.68
Upland Cotton	1.12	10.65	3.08	1.13	20.03	13.12
Pima Cotton	1.84	6.19	1.12	1.83	12.20	7.49
Barley	50.92	7.41	4.08	50.08	24.70	22.18

Table 5

December 1986 Agricultural Survey Analysis
Coding of Refusals/Inaccessibles in Non-Ag Strata

State	Land Use Stratum	Summary Stratum 1/	Segment Number	Tract	Crops Section	Stocks Section	Tract Weight	Expansion Factor
CA	19	7	2520	2	Unknown	Unknown	1.00000	631.81
CO	48	7	5454	2	Unknown	Unknown	0.00031	162.61
DE	31	7	6053	8	Has	Unknown	0.84333	627.12
DE	20	8	6045	13	Zero	Unknown	1.00000	2755.46
ID	13	7	6068	20	Complete	Zero	0.93103	1715.64
ID	15	7	5091	3	Zero	Zero	1.00000	1153.62
ID	15	7	5151	20	Zero	Zero	1.00000	2307.24
ID	15	7	5096	30	Zero	Zero	1.00000	1153.62
IL	31	7	6272	2	Unknown	Unknown	1.00000	4034.45
IA	19	7	4294	5	Zero	Zero	1.00000	2305.77
KS	12	8	6259	10	Unknown	Unknown	0.01835	8797.84
MD	21	7	6245	7	Has	Unknown	0.09300	442.42
MD	21	7	6256	9	Has	Unknown	0.54000	442.42
MD	13	8	6119	8	Zero	Zero	1.00000	2198.20
MD	20	8	6193	1	Complete	Unknown	1.00000	3114.43
NE	20	7	3400	5	Has	Complete	0.05357	1067.04
MN	12	7	5006	12	Zero	Zero	1.00000	171.86
OK	20	8	4147	16	Complete	Unknown	0.99981	7333.77
PA	20	7	5137	2	Unknown	Unknown	0.10000	1683.76
TX	42	7	5784	1	Complete	Unknown	0.69067	2769.66
UT	20	7	7081	30	Unknown	Unknown	0.01400	317.90
UT	20	7	7082	10	Unknown	Unknown	1.00000	317.90
WY	12	7	5060	2	Zero	Has	1.00000	297.17

1/ 7 = Ag tract with no winter wheat, rye, summer fallow, hogs, cattle, chickens, sheep, grain stocks capacity or intentions to have any, or non-ag tracts with potential.

8 = Non-ag tract without potential for wheat or livestock.

DECEMBER 1986 SOYBEAN HARVESTED ACRES

SUMMARY 1 (% OF MF SAMPLES IMPUTED)

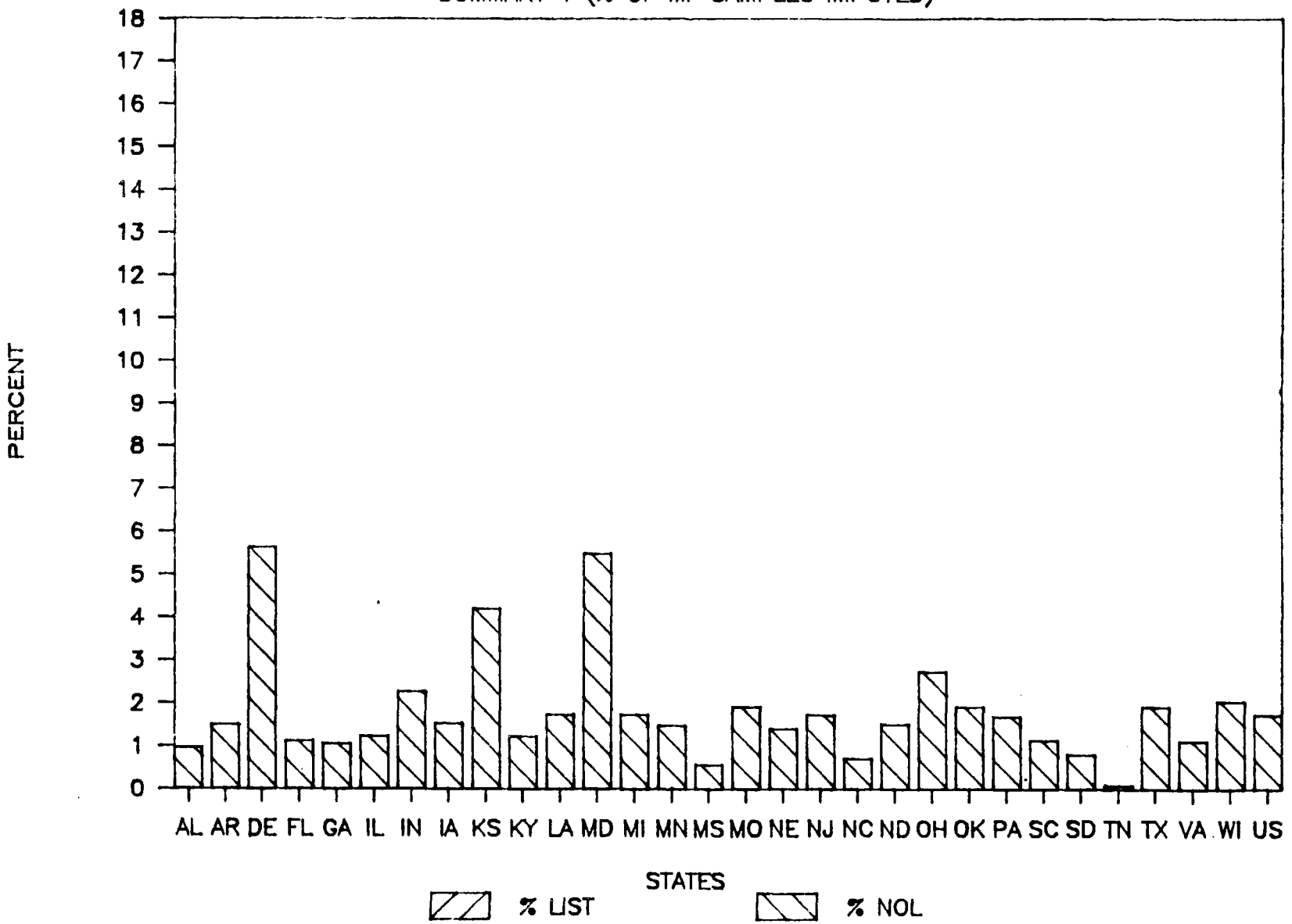


Chart 1

DECEMBER 1986 SOYBEAN HARVESTED ACRES

SUMMARY 1 (% OF MF DIR EXP IMPUTED)

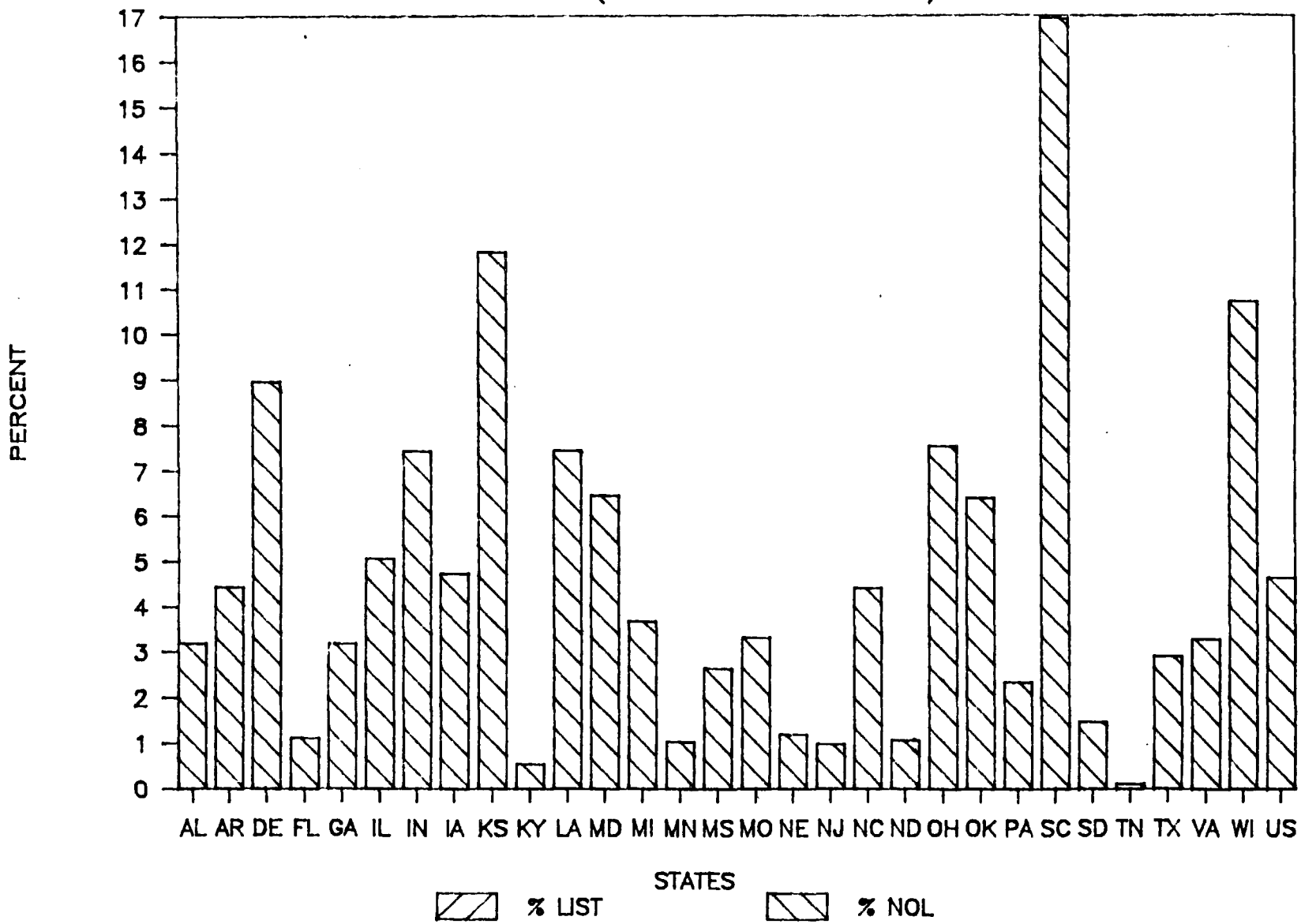


Chart 2

DECEMBER 1986 SOYBEAN HARVESTED ACRES

SUMMARY 2 (% OF MF SAMPLES IMPUTED)

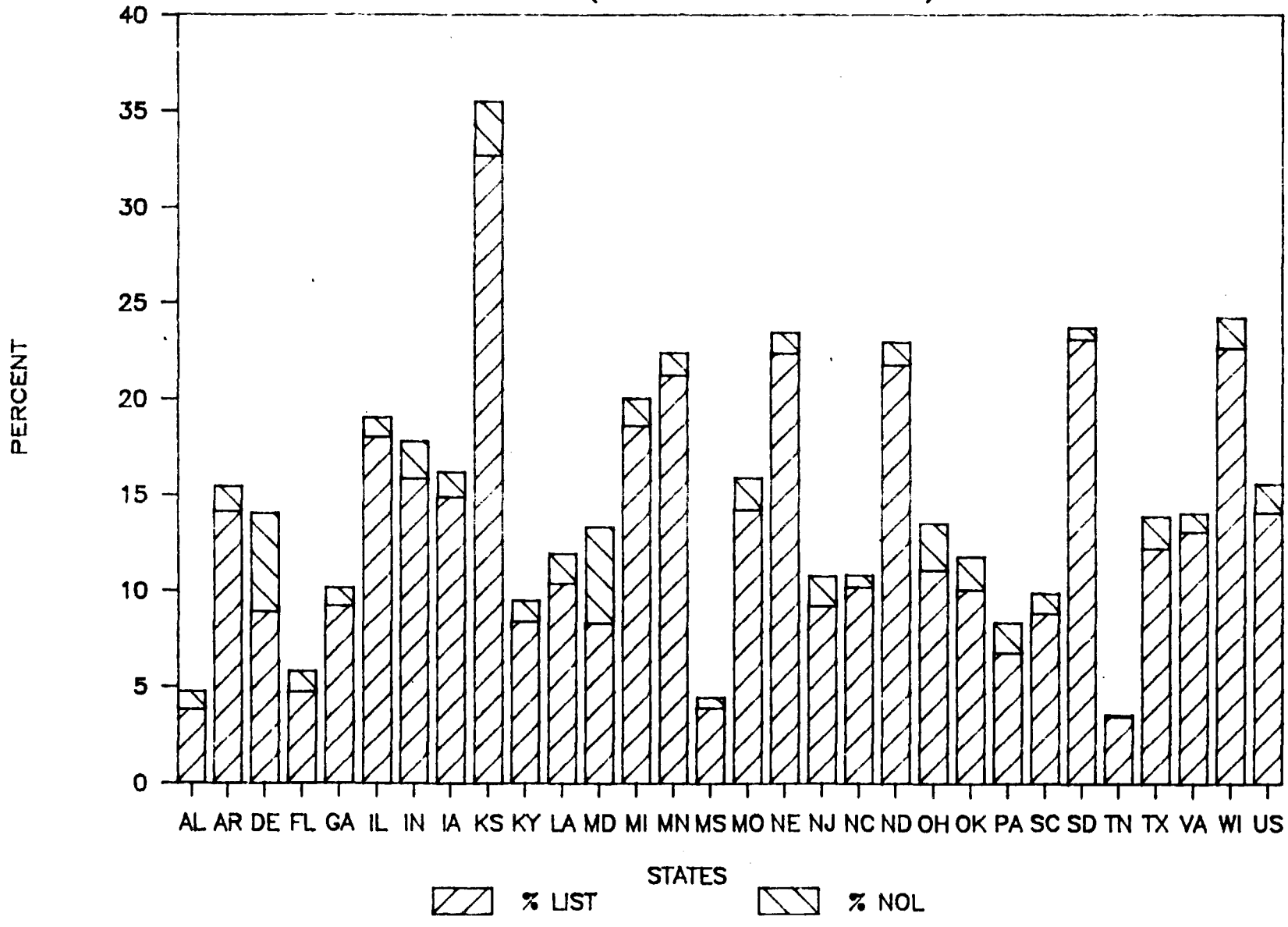


Chart 3

DECEMBER 1986 SOYBEAN HARVESTED ACRES

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

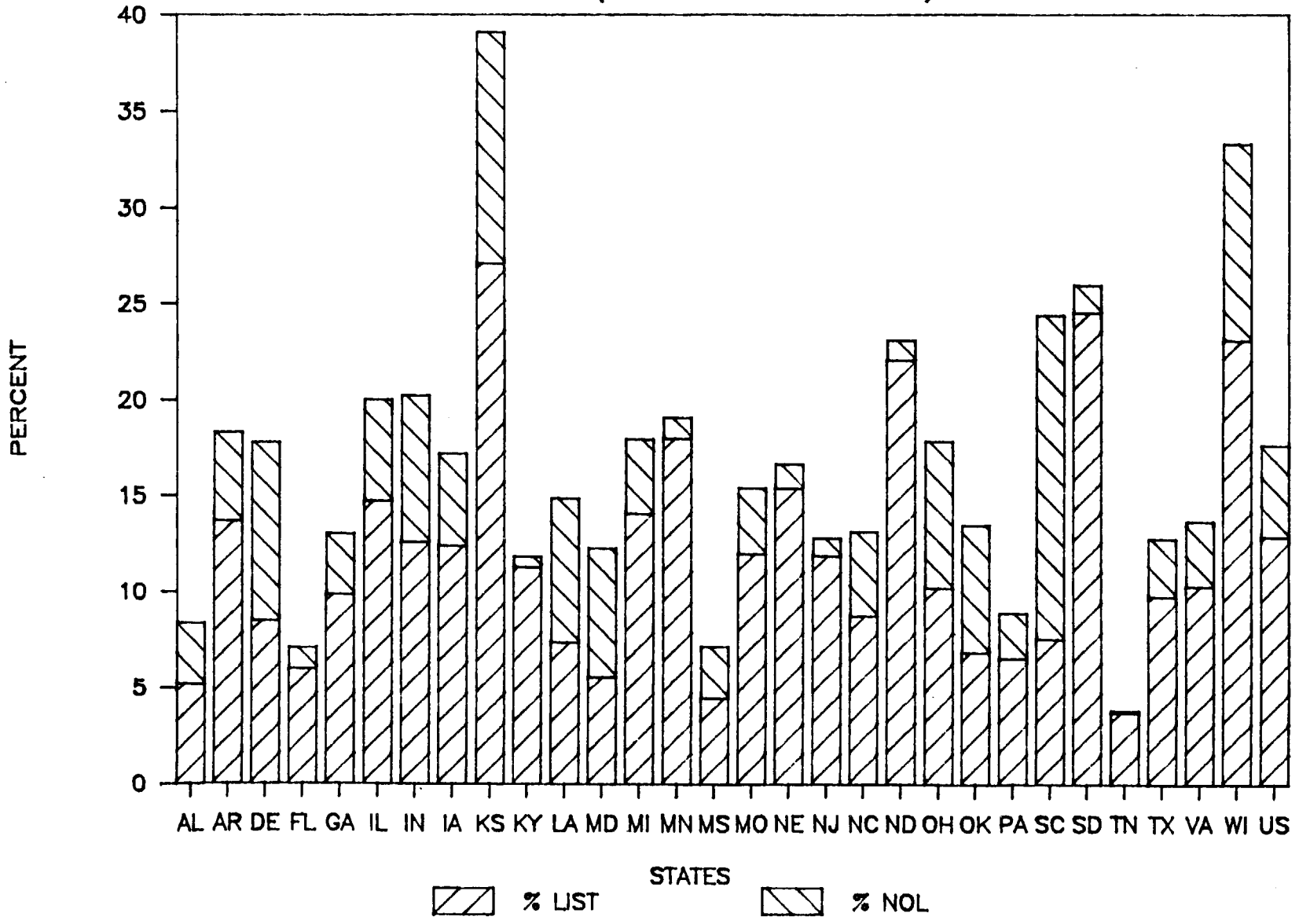


Chart 4

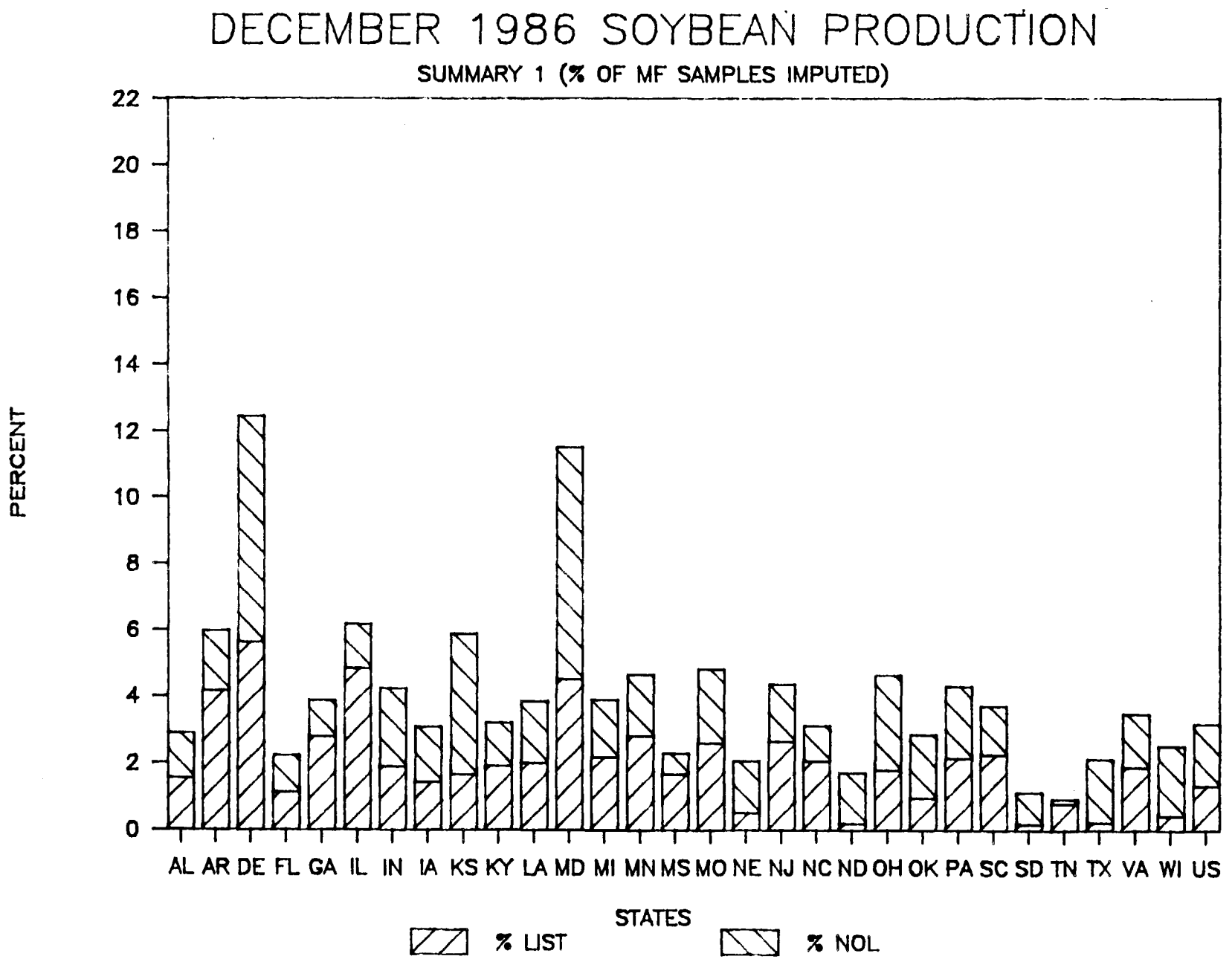

DECEMBER 1986 SOYBEAN PRODUCTION
SUMMARY 1 (% OF MF SAMPLES IMPUTED)
PERCENT
22
20
18
16
14
12
10
8
6
4
2
0
AL AR DE FL GA IL IN IA KS KY LA MD MI MN MS MO NE NJ NC ND OH OK PA SC SD TN TX VA WI US
STATES
% LIST
% NOL

Chart 5

DECEMBER 1986 SOYBEAN PRODUCTION

SUMMARY 1 (% OF MF DIR EXP IMPUTED)

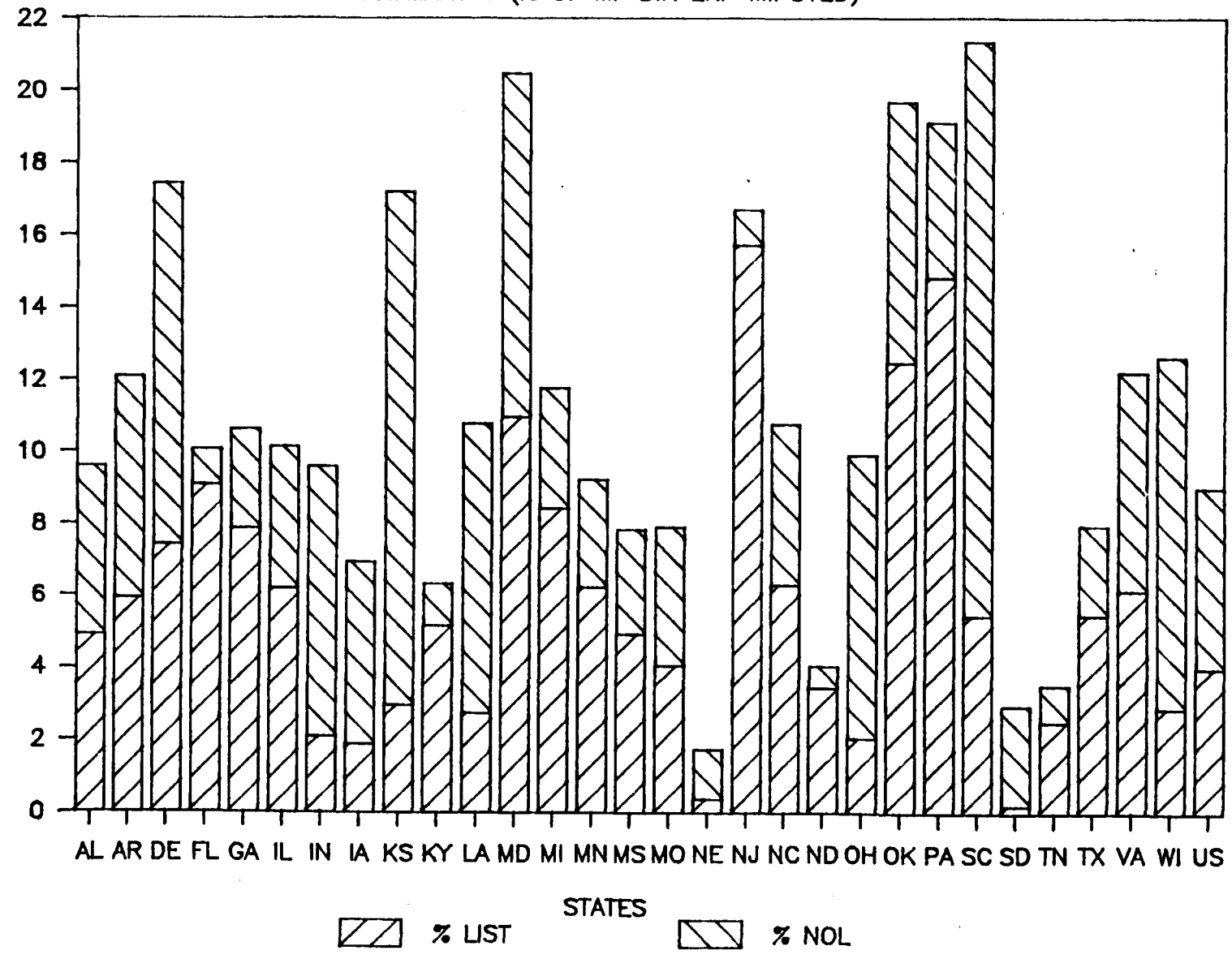


Chart 6

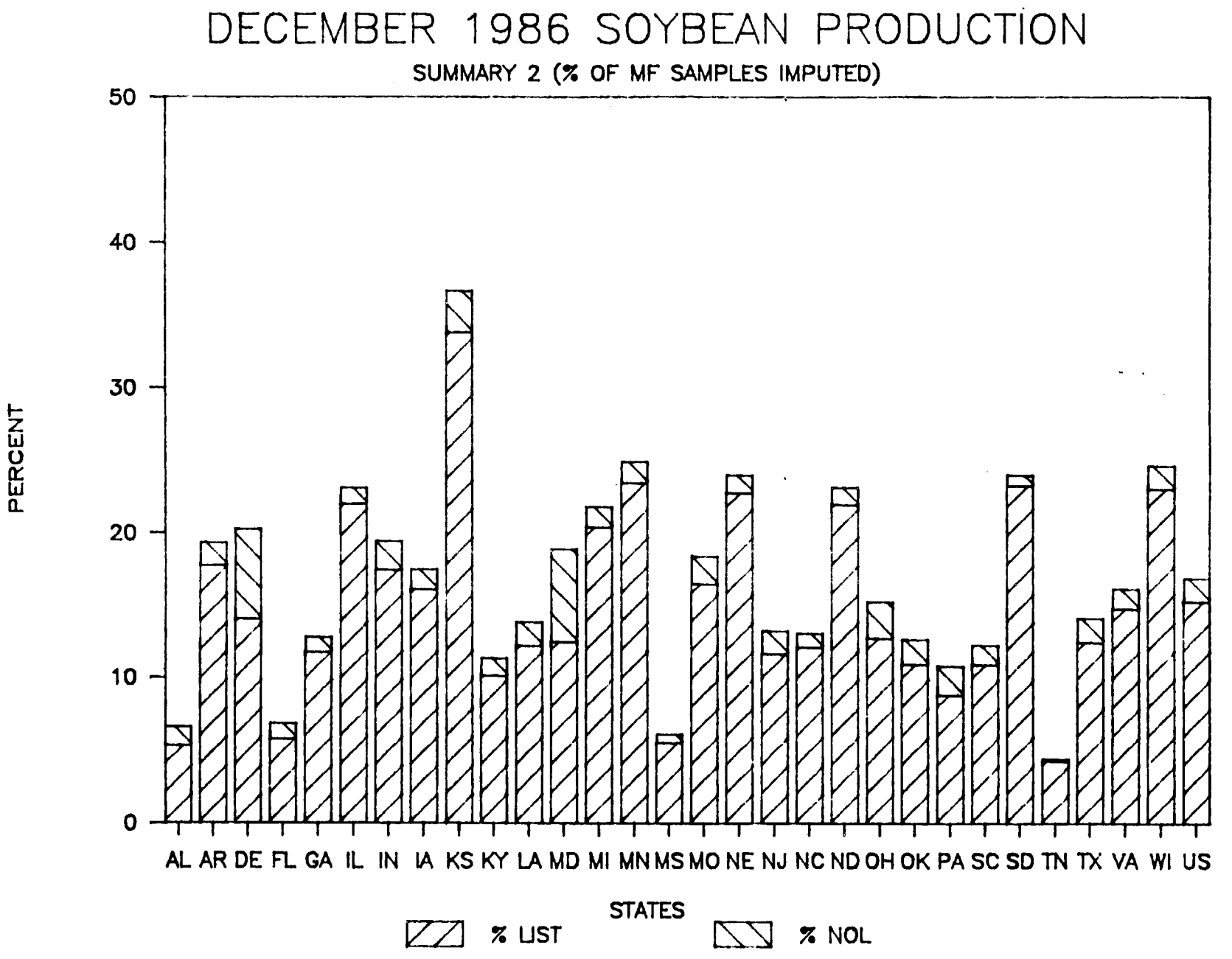

DECEMBER 1986 SOYBEAN PRODUCTION
SUMMARY 2 (% OF MF SAMPLES IMPUTED)
PERCENT
50
40
30
20
10
0
AL AR DE FL GA IL IN IA KS KY LA MD MI MN MS MO NE NJ NC ND OH OK PA SC SD TN TX VA WI US
STATES
% LIST
% NOL

Chart 7

DECEMBER 1986 SOYBEAN PRODUCTION

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

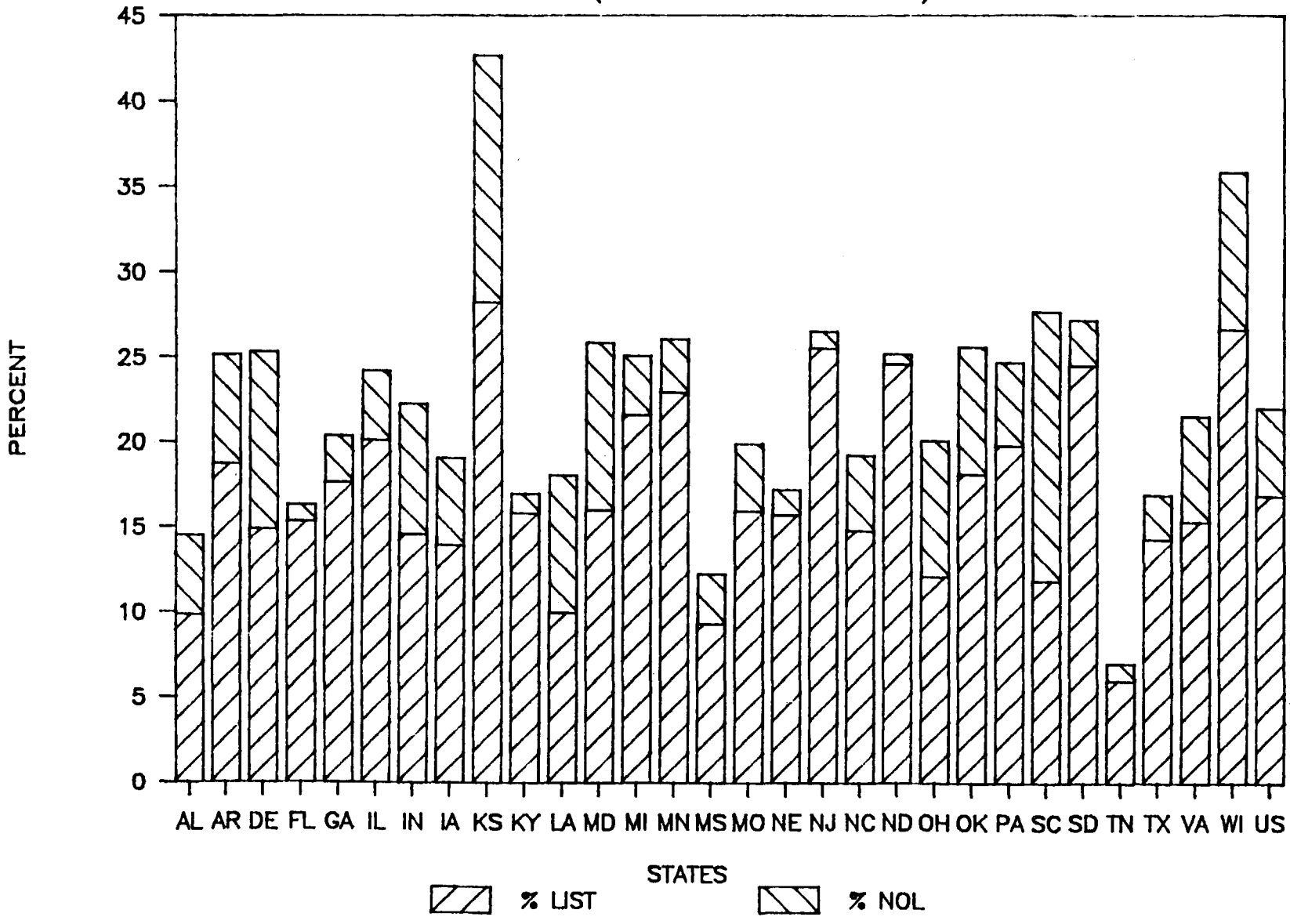


Chart 8

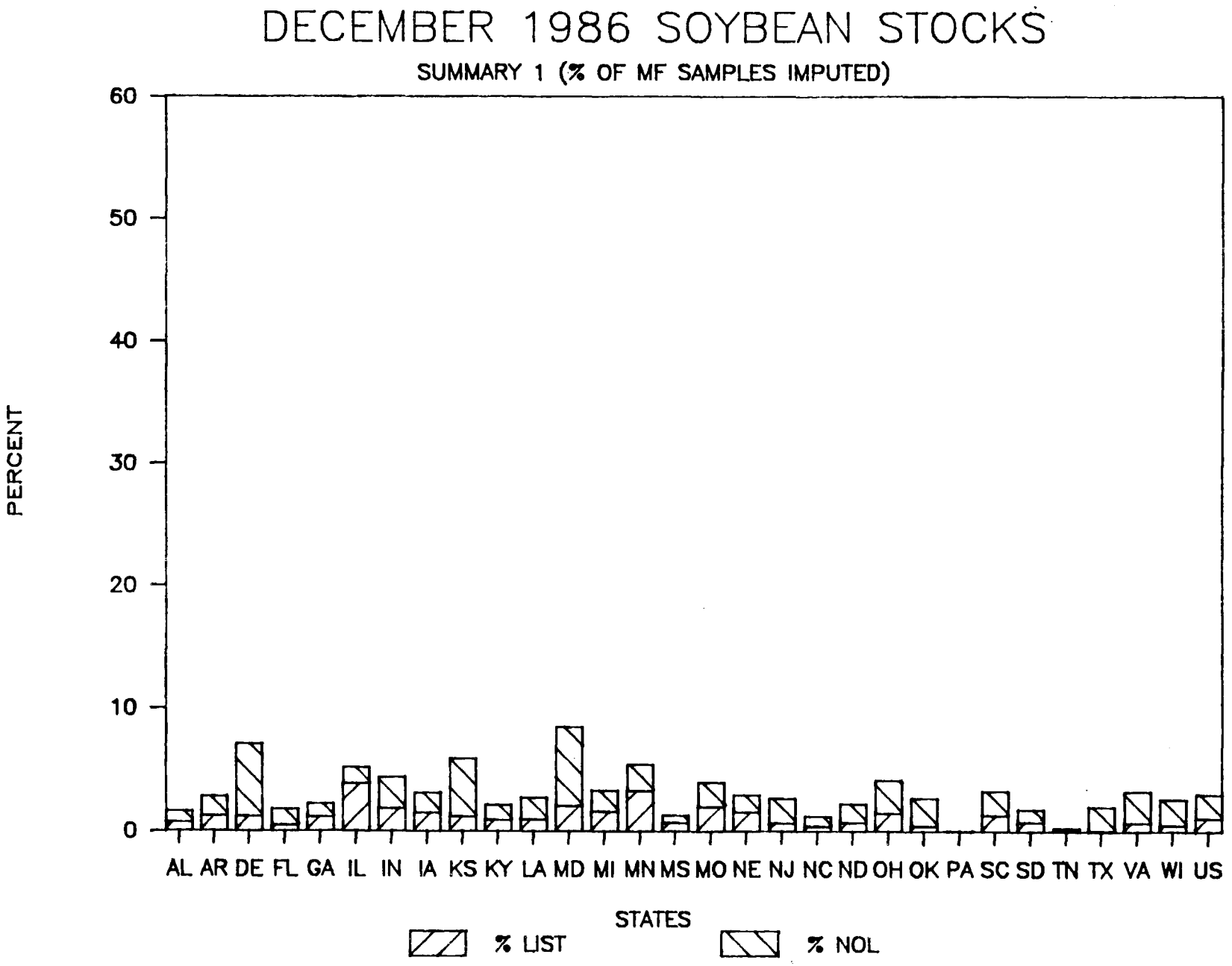

DECEMBER 1986 SOYBEAN STOCKS
SUMMARY 1 (% OF MF SAMPLES IMPUTED)
PERCENT
60
50
40
30
20
10
0
AL AR DE FL GA IL IN IA KS KY LA MD MI MN MS MO NE NJ NC ND OH OK PA SC SD TN TX VA WI US
STATES
% LIST
% NOL

Chart 9

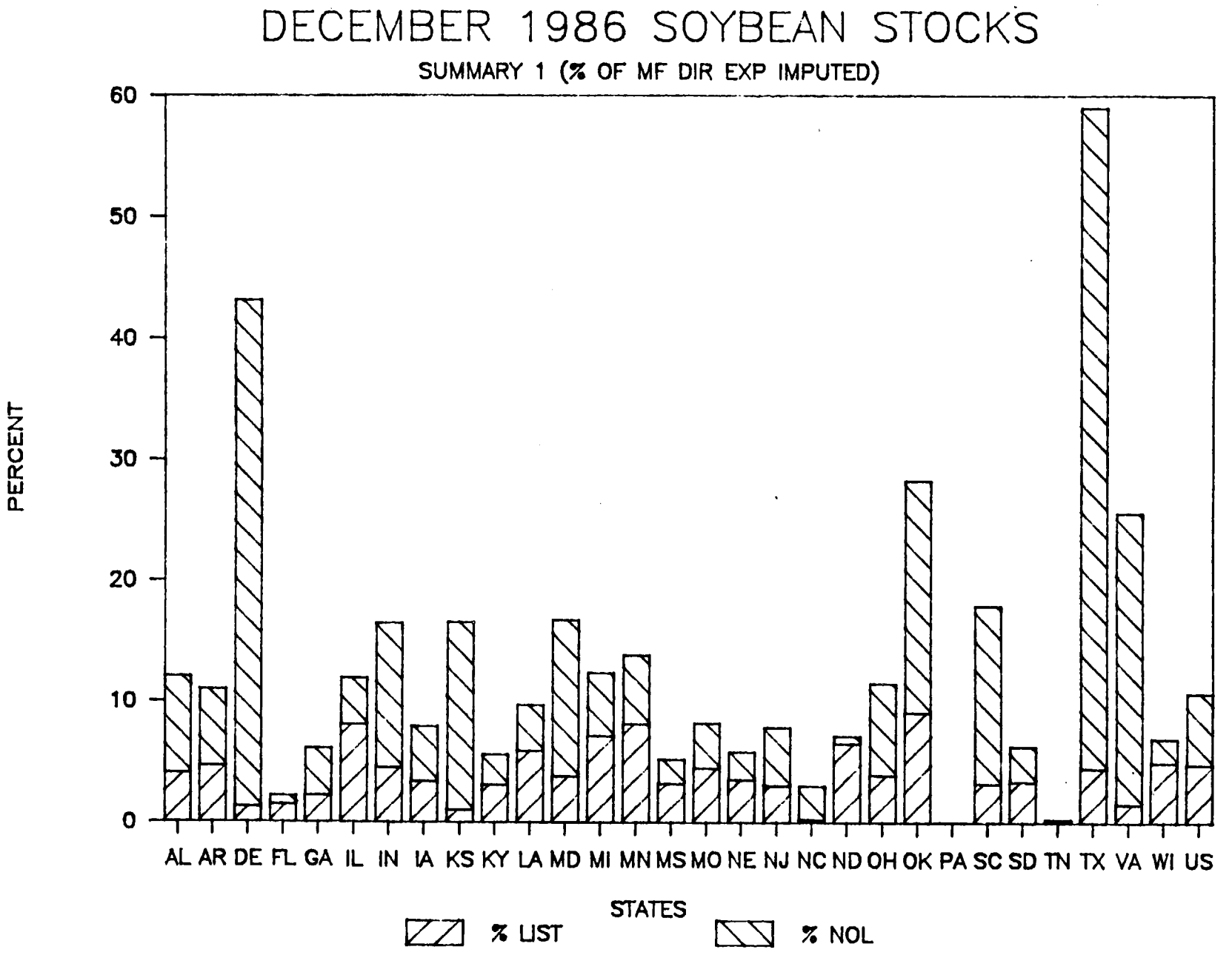

DECEMBER 1986 SOYBEAN STOCKS
SUMMARY 1 (% OF MF DIR EXP IMPUTED)
PERCENT
60
50
40
30
20
10
0
AL AR DE FL GA IL IN IA KS KY LA MD MI MN MS MO NE NJ NC ND OH OK PA SC SD TN TX VA WI US
STATES
% LIST
% NOL

Chart 10

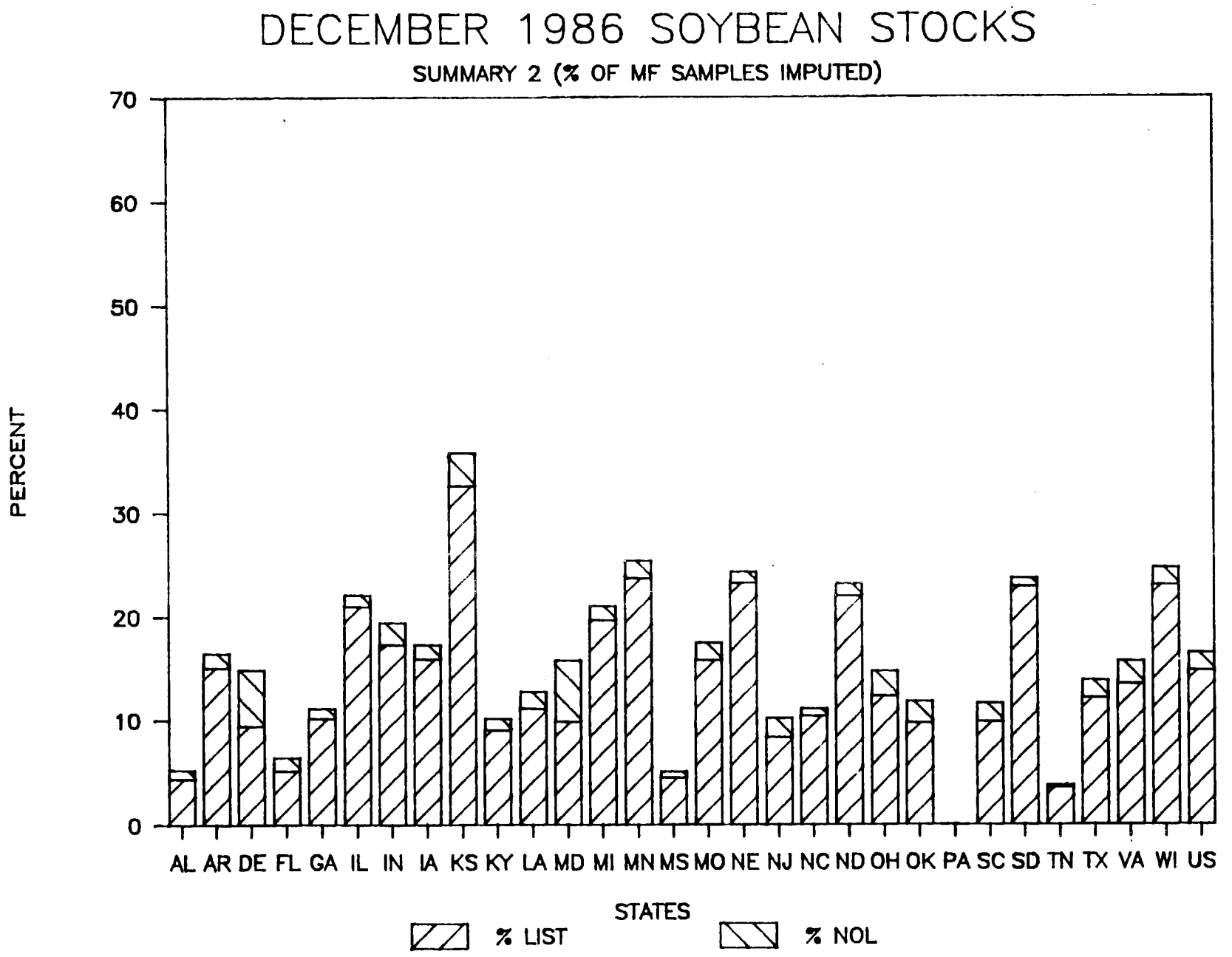

DECEMBER 1986 SOYBEAN STOCKS
SUMMARY 2 (% OF MF SAMPLES IMPUTED)
PERCENT
70
60
50
40
30
20
10
0
AL AR DE FL GA IL IN IA KS KY LA MD MI MN MS MO NE NJ NC ND OH OK PA SC SD TN TX VA WI US
STATES
% LIST
% NOL

Chart 11

DECEMBER 1986 SOYBEAN STOCKS

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

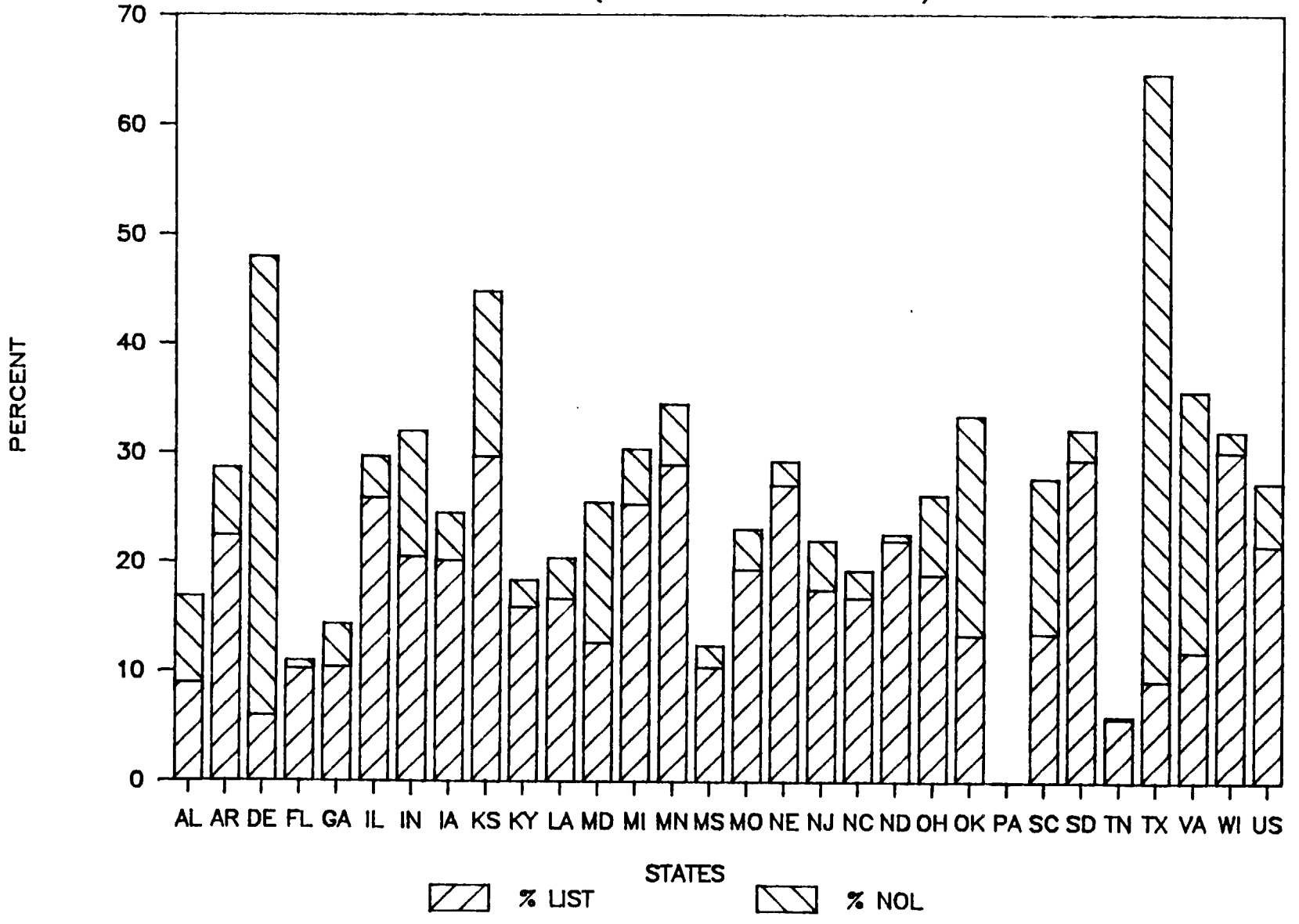


Chart 12

DECEMBER 1986 CORN HARVESTED ACREAGE

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

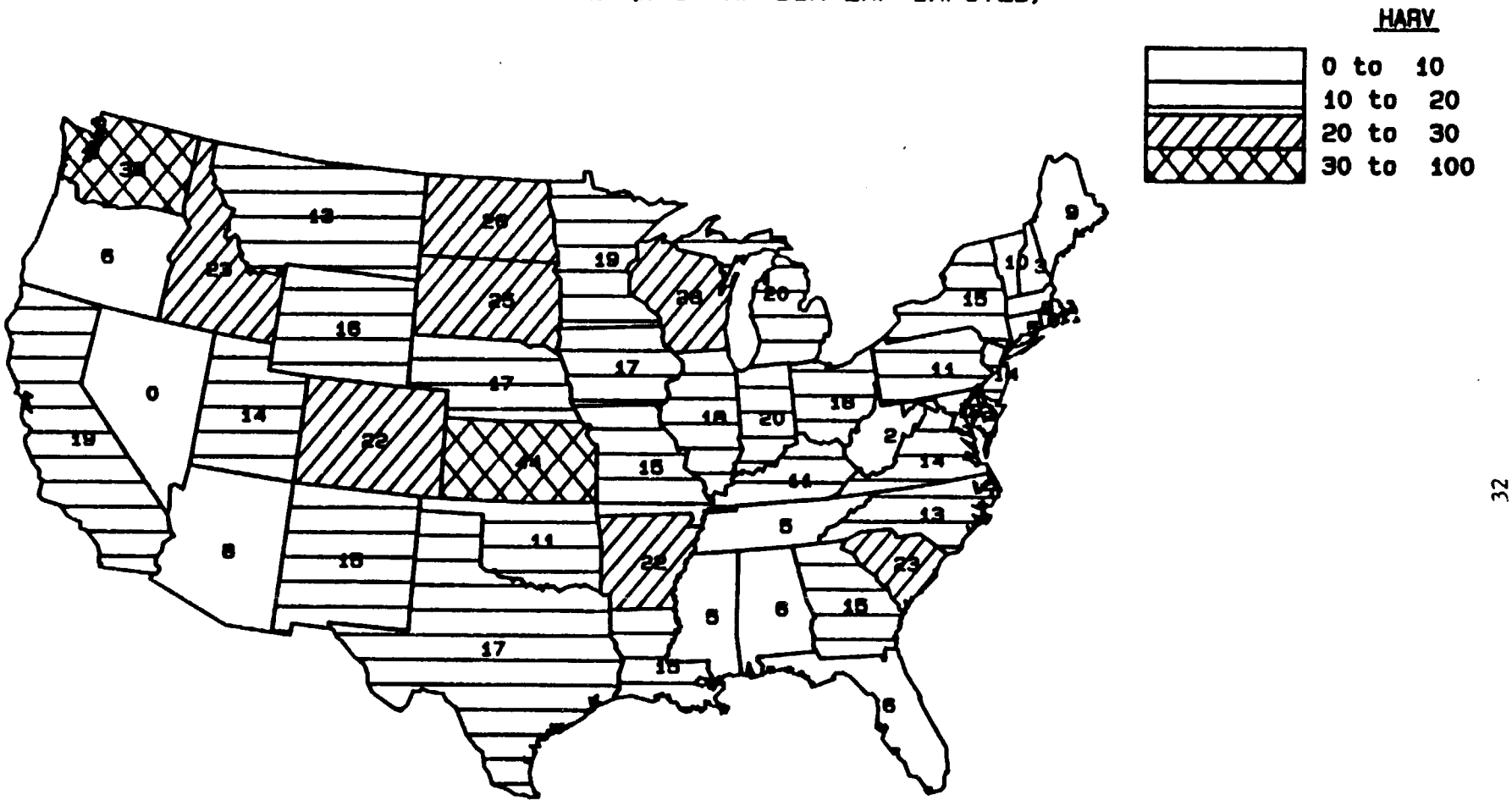


Chart 13

DECEMBER 1986 CORN PRODUCTION

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

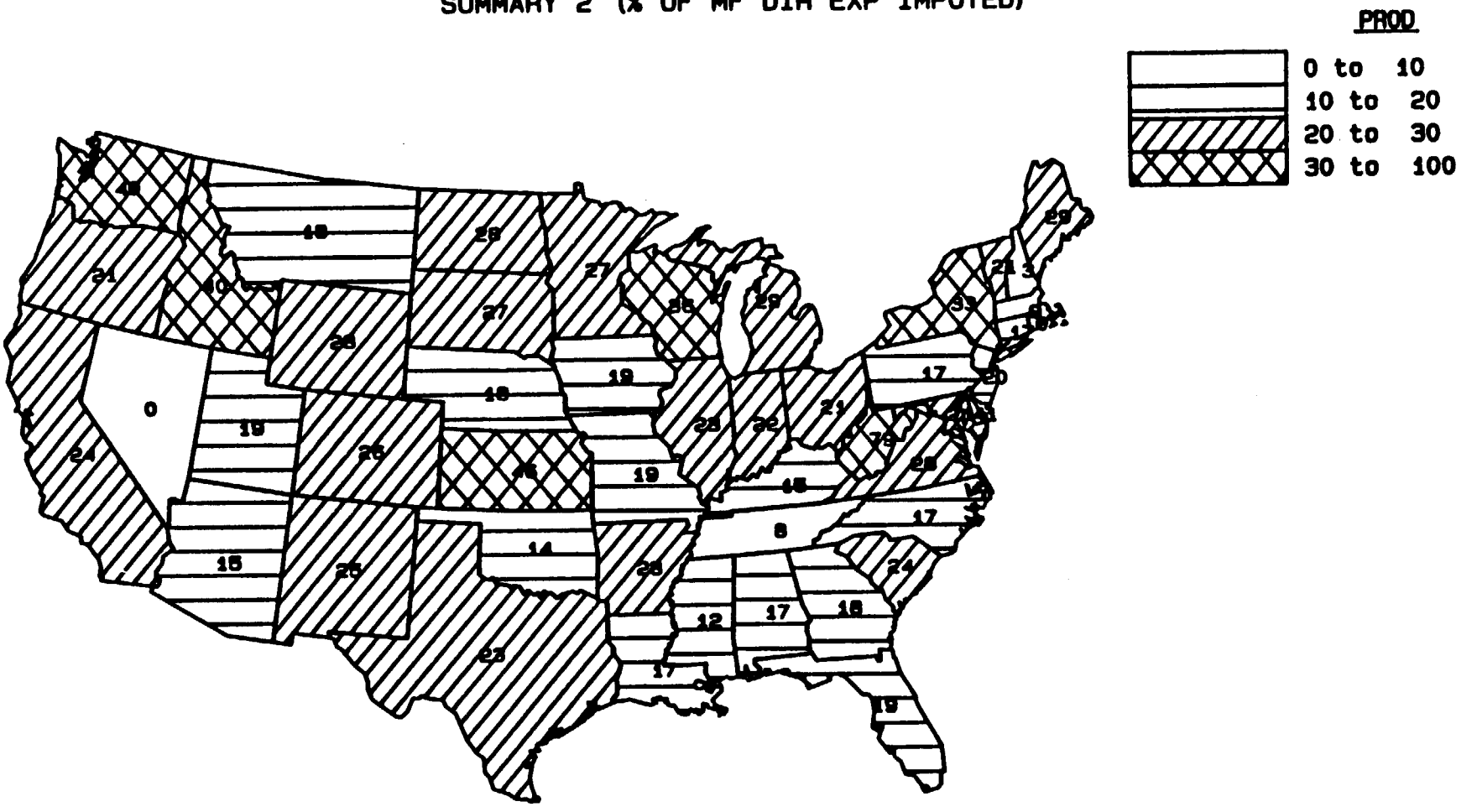


Chart 14

DECEMBER 1986 CORN STOCKS

SUMMARY 2 (% OF MF DIR EXP IMPUTED)

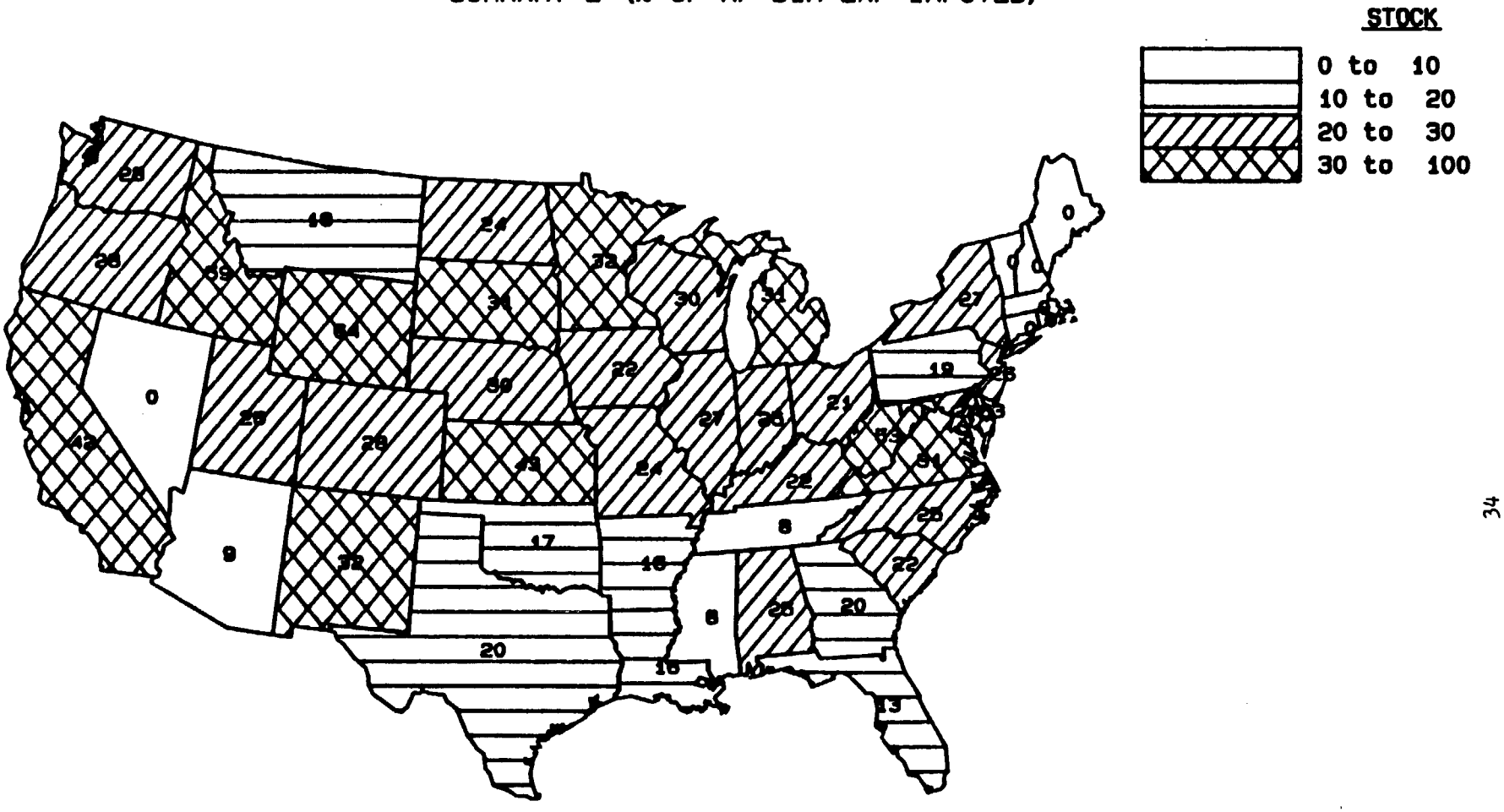


Chart 15

APPENDIX II

Description of the Current Imputation Procedures as of June 1987

11.8 QAS Imputation Procedures

The imputation procedures are designed to make use of as much information as possible to enable the computer to replace "missing" data with "imputed" data, record by record. In general, the imputed values are based on usable reports that are most similar to the report with missing data. Imputation procedures are basically the same for list and area records, with some differences as discussed below.

LIST: Imputed values are based on usable reports in the same Crop Reporting District (CRD) within the same stratum as the report with missing data. If there are fewer than two usable reports in the same CRD, imputed values are based on usable reports in the same stratum (across all CRD's). If there are fewer than two usable records in a stratum, imputed values are based on usable reports across all strata of similar importance (i.e. EO vs Non-EO). Finally, if there are fewer than two usable records in the strata of similar importance, imputed values are based on all usable records in the State (across all strata). Computations are made using unexpanded data.

AREA: Imputation for area records considers JES land use strata, by grouping all agricultural/cultivated strata and all non-ag/range strata into two groups within CRD. Imputed values are based on usable reports in the CRD within stratum group. If there are fewer than two usable reports in the group within the CRD, imputed values are based on usable records in the same CRD. If there are fewer than two usable reports in the CRD, imputed values will be based on usable records in the State (across all CRD's). Computations are made using expanded data.

Computed values for imputation are based on usable reports defined by section. Records with a crops or grain stocks completion code (IC138 or IC141) of four are usable for each respective section. Not all usable reports are included in the computation of values to be imputed. Records which may not be "typical" or "representative" of records with missing data are not included in the computation of values to be imputed. These include:

1. List records that have "list adjustment factors" of zero (0).

2. Area records that are overlap with the list.
3. Very small farms with less than five acres of cropland (eliminated only for ratio to land calculations for acreage imputation).
4. List and area records with extremely large values for grain stocks, i.e., one million bushels unexpended for list and four million bushels expanded for area (eliminated only for imputation mean generation for the specific stock item).

The following outline describes the imputation procedures for appropriate sections of the list and area questionnaires.

I. Cropland

A. Computing Values to be Imputed

1. General: If cropland (IC 802) is missing "-1", the edit will search for previously reported data (within the same LSF classify period) entered in the master creation process. The most recent data gets priority. If none is found, cropland will be imputed based on the following computations.

2. Ratio to LSF control data item 303: reports with usable cropland (IC802$\geq$0 and IC138=4) and LSF item 303>0 are used to compute the ratios of reported cropland to control cropland. All usable reports (IC138=4) with usable cropland (IC802$\geq$0) are used in generating ratios for imputing unknowns. Only usable reports with positive cropland (IC802>0) are used in generating ratios for imputing unknown positives.

3. Ratio to LSF control data item 300: reports with usable cropland (IC802$\geq$0 and IC138=4) and LSF item 300>0 are used to compute the ratio of reported cropland to compute the ratio of reported cropland to control cropland. All usable records (IC138=4) with usable cropland (IC802$\geq$0) are used in generating ratios for imputing unknowns. Only usable records with positive cropland (IC802>0) are used in generating ratios for imputing unknown-positives.

4. Average cropland: averages are computed from reports with usable cropland (IC802>0 and IC138=4). These computations are performed for the imputation of unknown-positives and unknowns as follows:

   a. positive reported cropland and usable acreage section (IC138=4).

   b. positive average adjusted by the proportion of those reports with and without the item of interest for both respondents and nonrespondents. To do this requires the following calculations.

      SPR -- Sum of the "imputation cropland" for positive respondents.
      #PR -- Number of positive respondents.
      #P -- Total number positive for item (#PR + #PN).
      #K -- Total number known positive or zero for item.

      So, #K = #PR + #PN + #ZN.
      Where: #PR = Number of positive respondents.
      #PN = Number of positive nonrespondents.
      #ZR = Number of zero respondents.
      #ZN = Number of zero nonrespondents.

      $$\text{Imputed Value for Unknowns} = \frac{(SPR/\#PR) \times \#P}{\#K}$$

B. Imputing Cropland Values

1. The imputation mean calculation routines described above in items 2-4 are prioritized for use in imputing an individual nonresponse record. If LSF cropland (IC303) is positive for the nonresponse record then the ratio to LSF item 303 procedure described in item 2 will be used. Otherwise, if LSF cropland (IC300) is positive for the nonresponse record then the ratio to LSF item 300 procedure described in item 3 will be used. Finally if neither LSF item 303 nor LSF item 300 is positive in the nonresponse record, then the average cropland procedure described in item 4 will be used

2. Since there is no section completion code for cropland, the item may be "0", positive or a "-1". If the item is a 0 or -1 the data imputed will depend upon the section completion code 138 for the acreage section.

   a. If IC138=1, or item 802 is a -1, the nonrespondent is known to have cropland. If cropland is not reported, imputation will insert an "unknown - positive" average cropland based on one of the mean calculation routines described above.

   b. If IC138=2, it is unknown whether or not the nonrespondent has cropland. If cropland is not reported, imputation will insert an "unknown" average cropland based on one of the mean calculation routines described above. This average could be zero.

   c. If IC138=3, the nonrespondent does not have cropland and zero is imputed.

II. Individual Crop Acres

A. Computing Values to be Imputed.

1. Acres-ratio to cropland: All reports with usable individual crop acreage data (records with IC138=4) and usable cropland (IC802>5) are used to compute <u>for each crop</u> the ratio of planted or harvested acres to cropland acres".

B. Imputing Crop Acres

1. If the Acreage section is not usable (records with IC138=4), the ratios computed (individual crop acres to cropland) for usable records are used for imputation. The ratios for each crop are multiplied by reported cropland if available, otherwise imputed cropland acres for that report. The product is imputed for the missing acreage values. If there are fewer than two usable reports in the first level of computing values, the ratios computed in the next level are used. These ratios represent all operations, those which have crops and those which do not.

2. If the Acreage section is usable, no imputation is carried out, since acreage values must be zero or positive; they cannot be coded as "missing" (-1).

III. Production

A. Computing Yield

1. All reports with usable Acreage and Production data (IC138=4) and with production > 0 are used to compute the ratio of production to harvested acres (yield).

B. Imputing Production Values

1. If the Acreage Section is not usable (IC138=4), imputation is carried out in two steps. First, the acreages are imputed for each crop. The production values are then imputed for each crop by multiplying harvested acres (that have been imputed) by the yields computed. If there are fewer than two usable reports at the primary level of imputation, then yields computed in the next level are used. These yields represent those operations which produce the crop of interest.

2. If a production value is missing (-1) for a given crop, data is imputed by multiplying the reported harvested acres for the crop by the yield for the crop, computed as discussed above. These yields represent those operations which produce the crop of interest.

IV. Grains in Storage

A. Computing Values to be Imputed

1. Ratio to previous quarter and to base (not applicable for December): comparable usable reports (current usable and previous positive; current usable and base positive) are used to compute the stock ratios. Since - 1's are allowed for stock items, utility is determined stock by stock.

2. Ratio to control capacity: reports which are usable for a particular stock item and which contain positive capacity control are used to compute the ratios.

3. Average stocks: averages are computed for each stock item of interest.

4. The above computations are performed on the following three groupings of usable reports.

   a. all usable reports.
   b. reports with at least one grain stock item positive.
   c. reports with positive data for an individual stock item.

B. Imputing Grains in Storage Values

1. Imputation is carried out in a priority sequence using the calculations previously discussed, giving top priority to ratio to previous quarter.

   a. ratio to previous quarter (used if previous quarter item > 0)
   b. ratio to base (otherwise, used if base item > 0)
   c. ratio to capacity (otherwise, used if LSF capacity > 0)
   d. average stocks (used for all nonusable records for which none of the above conditions are met)

2. If the Grains in Storage section is usable (IC141=4), the only imputation carried out is for the individual items which are coded as missing (-1). Data imputed uses the sequence above for ratios a) through c) and will only be used if there is positive previous data, positive base or positive capacity. If this criterion is not met average stocks calculated from reports with positive data for the specific individual stock will be used.

3. If the Grains in Storage section is not usable (IC141=1-3), the imputation is carried out depending on the presence/absence code and in the priority sequence.

a. If IC141=1, the respondent is known to have at least one grain stock item. If the ratio criteria are not met, data are imputed for all stock items based on the average calculated from usable reports with at least one positive stock.

b. If IC141=2 and the ratio criteria are not met, data are imputed for all stock items using the averages computed from all usable reports.

c. If IC141=3, the respondent does not have grain in storage, and zeros are imputed for all individual stocks.

V. Grain Storage Capacity

A. The computation and insertion of imputation means for grain storage capacity are exactly the same processes as are used for individual stock items, with the following exceptions:

1. Previous (or base) capacity data is brought forward in the machine edit where it is available, and current survey capacity is missing. This data movement prior to imputation is required since capacity is not asked every quarter in every state; however, it precludes using ratio to previous or ratio to base imputation for capacity.

2. Positive storage capacities reported in an otherwise nonusable Stocks Section are retained (i.e. not replaced with imputation means).

3. Unlike the individual stocks items, records coded with a Stocks Section completion code IC141=3 (i.e. no stocks) can legitimately have positive capacity. These operations receive an average capacity based on usable reports with no stocks.

VI. List adjustment Factor (LAF-List Only)

A. Computing Values to be Imputed

1. Average LAF: averages are computed for reports at the stratum level for two groups, based on the report's "business" status. Both of these groups exclude reports with reporting units coded 11 or 12.

   a. in business - reports excluding those known zero (IC910=5) and/or out of business (IC921=9).
   b. unknown business status - all reports.

2. The following groups of usable reports by type of operation are used to create the averages within each of the above computations. These groupings are based on the selected unit codes on the questionnaire.

   a. individual
   b. partnership
   c. operation/corporation

B. Imputing Values to be Imputed

1. The averages computed are used for imputation of refusal/inaccessible reports depending on the reporting unit (IC921/IC931). If the record is considered in business (IC921/IC931=11) the computed value is based on the average LAF as computed above for similar in business records.

2. If it is not known whether the refusal/inaccessible is in or out of business the reporting unit is coded a 12 for an unknown business status. The average LAF to be imputed is based on the computed value above for all usable records.

VII. Livestock

A. Estimation for list refusals and inaccessibles based on additional information (presence/absence coding) has been part of the operational program for some time. This procedure incorporates adjustment at the "summary level" and thus the term adjusted estimator (see earlier section discussing this topic in detail).

B. Imputation procedures on a record by record basis are currently in a research mode so the results from the two procedures can be compared since they are basically designed to provide "equivalent results". To minimize confusion until the research is complete, the SSO does not see the record by record results.

1. If IC499/IC498=1, the nonrespondent is known to have hogs/cattle. Averages for respondents with hogs/cattle are created and imputed for these nonrespondents.

2. If IC499/IC498=2, it is unknown whether or not the nonrespondent has hogs/cattle. The averages created for unknown nonrespondents are the positive averages adjusted as shown below. Unknown nonrespondents should be imputed maintaining the same proportions as those with and without the item of interest for both the respondents and the other nonrespondents. To do this will require the following calculations.

SPR - Sum of the data for positive respondents
#PR - Number of positive respondents
#P - Total number positive for item (#PR + #PN)
#K - Total number known positive or zero for item
So #K = #PR + #PN + #ZR + #ZN
Where #PR = Number of positive respondents
#PN = Number of positive nonrespondents
#ZR = Number of zero respondents
#ZN = Number of zero nonrespondents

$$\text{Imputed Value for Unknowns} = \frac{(SPR/\#PR) \times \#P}{\#K}$$

NOTE: In the above discussion, reference to "positive" means positive for total inventory of the commodity. All computations are performed at the strata level.

3. If IC499/IC498=3, the nonrespondent does not have hogs and no imputation is performed (record is treated as though a zero were imported).

VIII. Important Editing/coding Considerations for Effective Imputation and Summarization

1. Be careful about estimating total land particularly for area records. While this variable is not imputed, it is used in computing summary tract weights. Careless estimation of total land can seriously bias summary expansions.

2. Be careful about coding section presence/absence codes. Imputation is extremely dependent and sensitive to prudent coding of these cells. Do not use the "unknown" category as a crutch. Use this category only for operators about whom you really have no information concerning a particular section.

3. Use the '11' and '12' codes for reporting unit for nonresponse samples. Use of these codes allows imputation to further customize a particular sample's contribution to summary expansions, through imputation of that sample's LAF code.

4. Glean as much information from a nonresponse sample as possible. Often, especially for small operations, cells such as cropland and section presence/absence codes can be entered from observation.

11.9 Crops Analysis Package

The crop analysis package analyzes list and NOL capacity, stocks, production, and acreage data. An explanation of each table and listing is included in the attached package printout.

Crops Branch will determine by state which crops will be processed through the System. States will load a trigger file to have the analysis package run. If the data is reedited, the analysis package need not be rerun prior to summarizing the data.

11.10 Crops QAS Summary Output

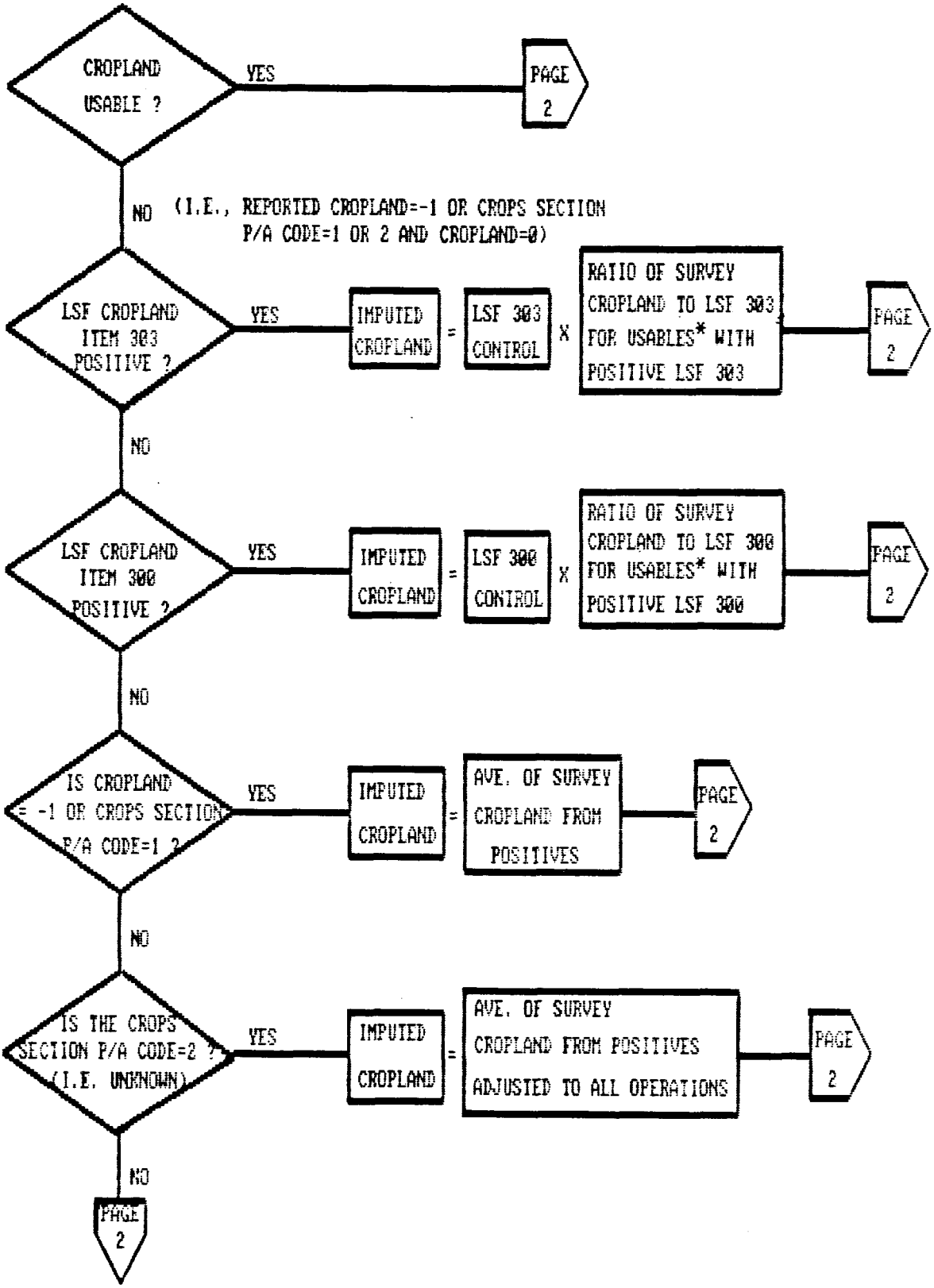
GENERAL

All states will receive two summary output tables to review. The first output table is the operational ESS summary, which has been referred to as "summary 1" in the past.

APPENDIX III

Flowchart of the Imputation Process as of June 1987

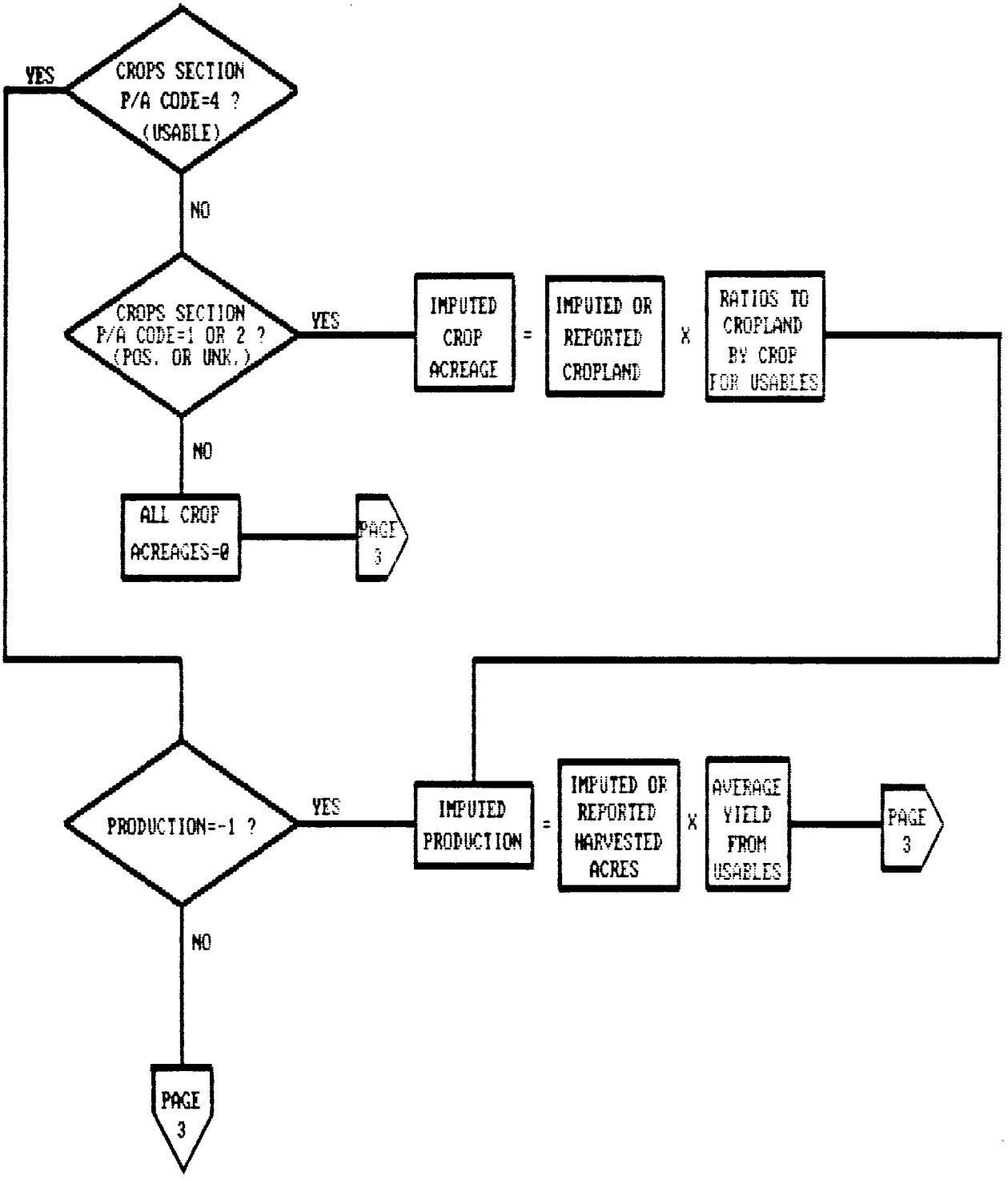
CROPLAND IMPUTATION



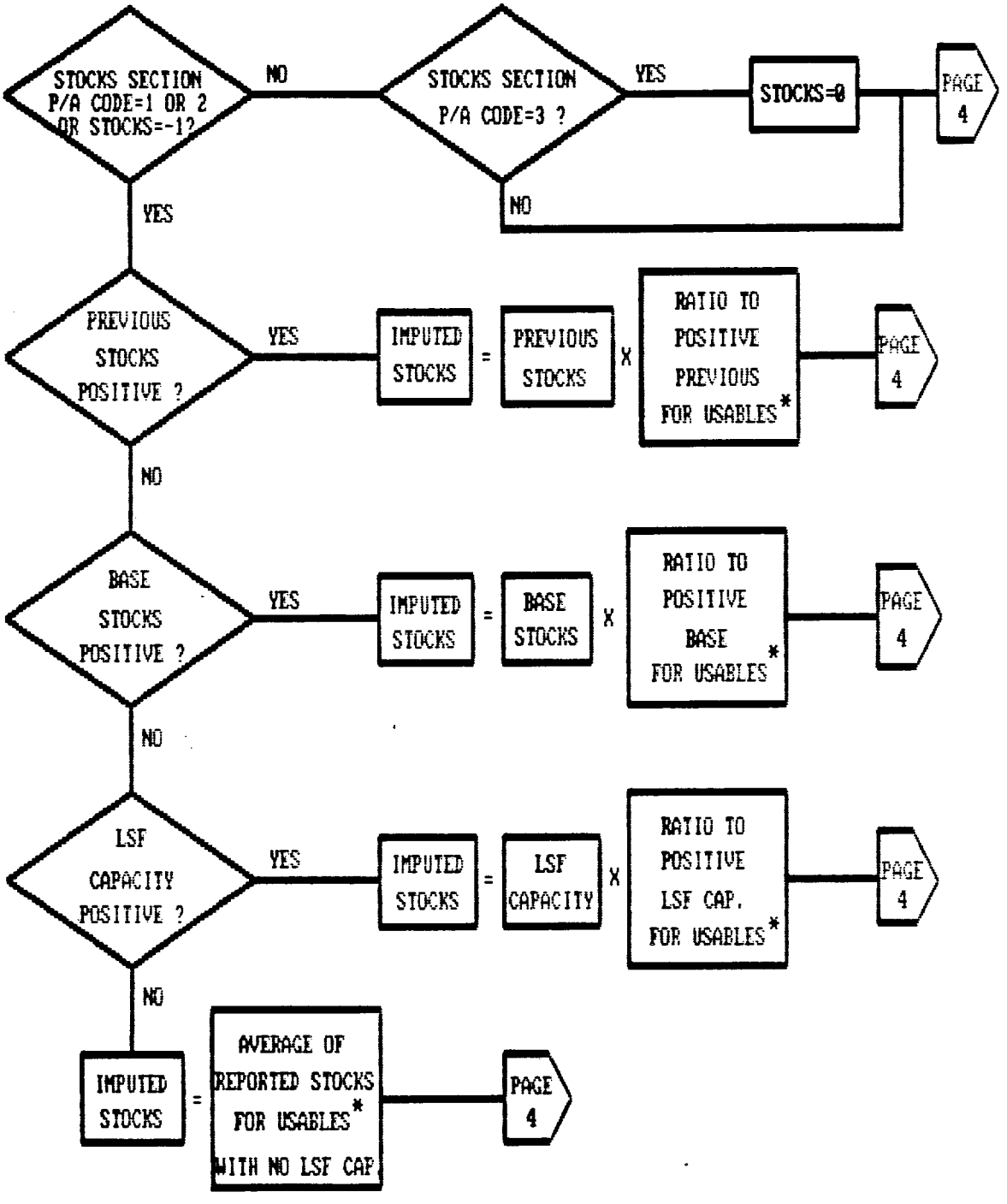
*WHEN IMPUTING CROPLAND FOR -1'S OR FOR NONRESPONSE RECORDS WITH A CROPS SECTION P/A CODE OF 1, USABLES ARE DEFINED AS REPORTS WITH A CROPS SECTION P/A CODE OF 4 AND POSITIVE CROPLAND.

WHEN IMPUTING FOR NONRESPONSE RECORDS WITH A CROPS SECTION P/A CODE OF 2, USABLES ARE DEFINED AS REPORTS WITH A CROPS SECTION P/A CODE OF 4 AND CROPLAND NE -1.

INDIVIDUAL CROP IMPUTATION



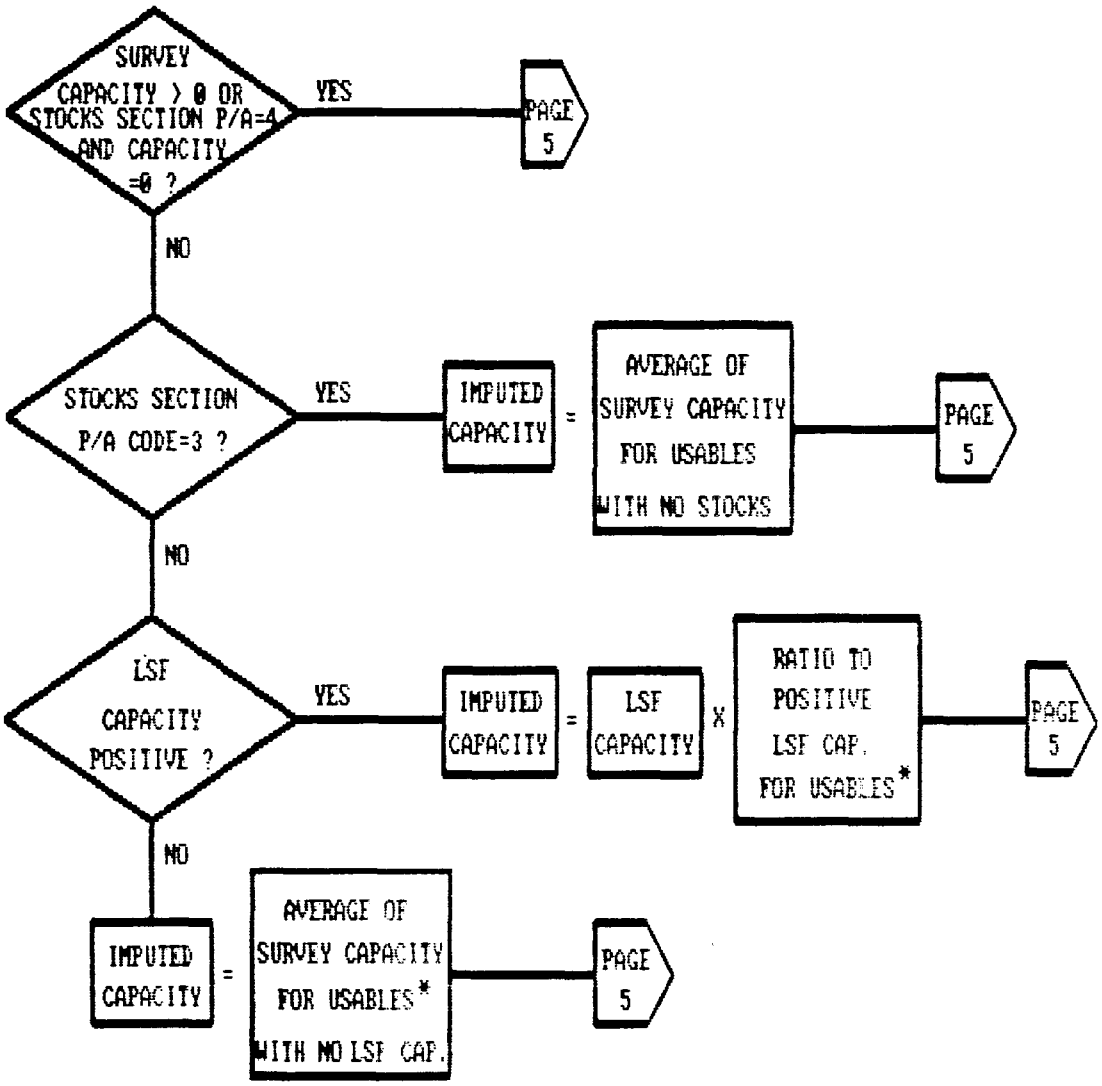
INDIVIDUAL STOCKS IMPUTATION



*Usables always have a stocks section completion code of 4. In addition,

1) for -1 imputation, a positive stocks entry for the specific crop of interest.
2) for P/A code=1 imputation, a positive stocks entry for any crop.
3) for P/A code=2 imputation, a positive or zero entry for the specific crop of interest.

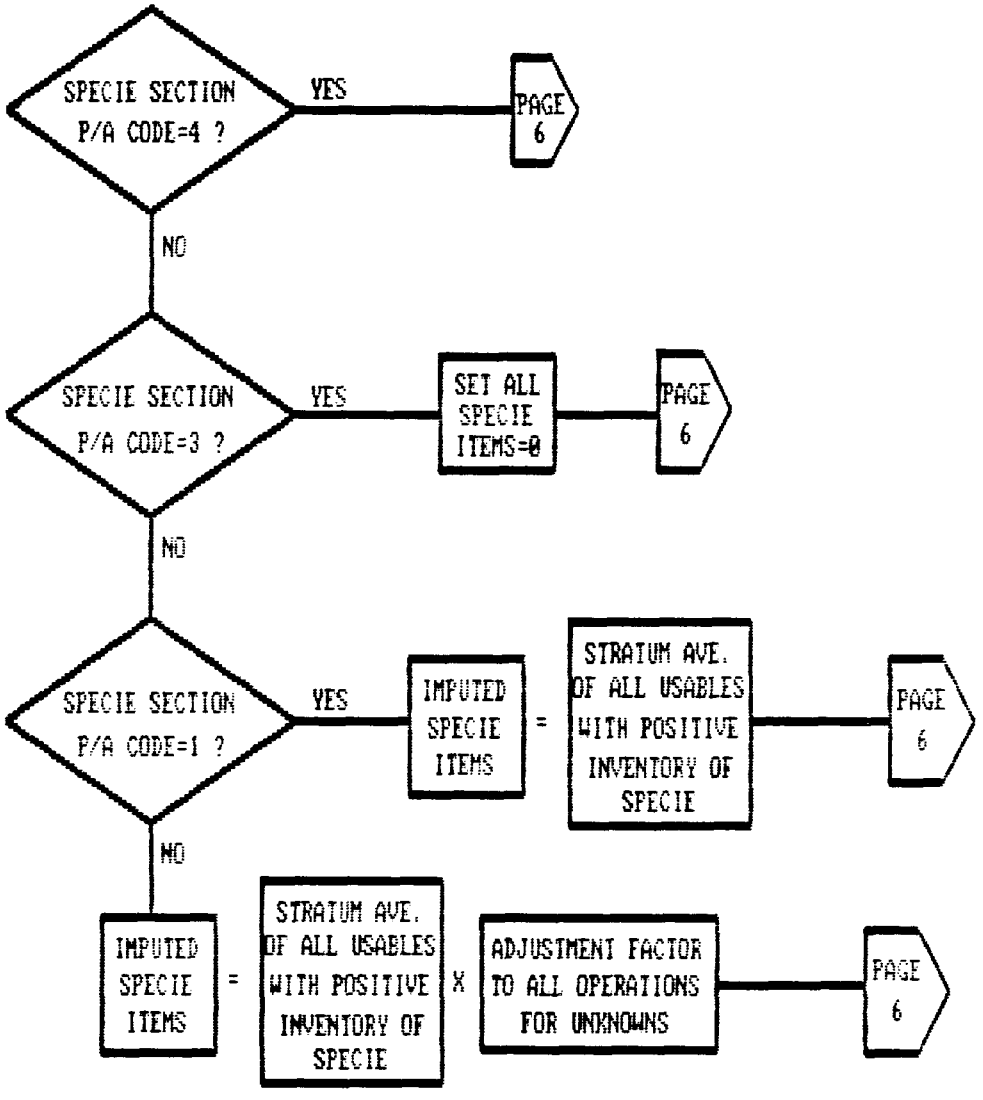
STOCKS CAPACITY IMPUTATION



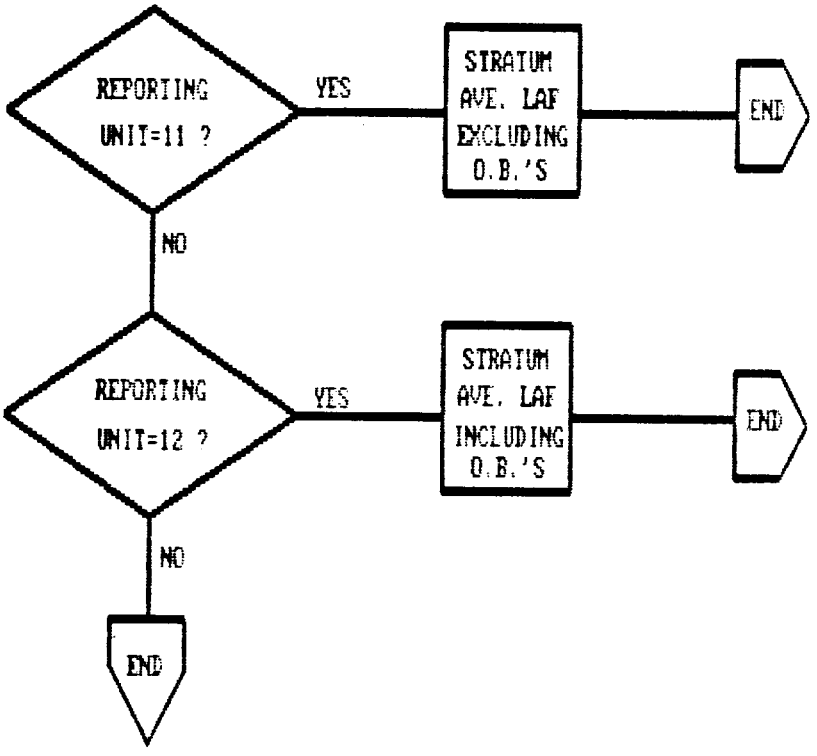
* Usables always have a stocks section completion code of 4. In addition,

1) for -1 imputation, a positive stocks entry for the specific crop of interest.
2) for P/A code=1 imputation, a positive stocks entry for any crop.
3) for P/A code=2 imputation, a positive or zero entry for the specific crop of interest.

LIVESTOCK IMPUTATION



LAF IMPUTATION (LIST ONLY)



APPENDIX IV

The December 1986 QAS Questionnaire
(The source of the December 1986 list data)

Agricultural Statistics Board

National Agricultural Statistics Service

U.S. Department of Agriculture

AGRICULTURAL SURVEY
DECEMBER 1986

Form Approved
O.M.B. Number 0535-0213
Approval Expires 5/31/87

Kansas

PART-C

Optional	Optional
407	408

Strata	ID	Tract	Subtr.
		0 1	

Dear Reporter:

Your help is needed to make agricultural estimates as accurate as possible. The information requested is used in preparing crop acreage, grain stocks, and livestock estimates for 1986. Facts about your farm or ranch are confidential and used only in combination with similar reports from other producers. Response is voluntary.

Respectfully,

Charles E. Caudill

Charles E. Caudill, Chairperson
Agricultural Statistics Board

SECTION 1 — IDENTIFICATION

1. Is the spelling of the name and address on the label correct?

☐ YES ☐ NO - *Make corrections on the label.*

2. Does the farm, ranch or individual(s) listed on the label:

a. grow crops or cut hay?..... ☐ YES ☐ NO

b. have hogs? *(at any time since June 1, 1986)*.. ☐ YES ☐ NO

c. have grain or soybeans stored on the farm?..... ☐ YES ☐ NO

d. have other livestock, poultry or grain storage facilities?..... ☐ YES ☐ NO

If NO to all questions, GO TO SECTION 9.

3. Does this operation do business under any other name, other than as shown on label?

☐ NO ☐ YES - Enter name: _____

(Do you want this name to appear on the label? ☐ YES ☐ NO

4. Are the day-to-day decisions for this farming (or ranching) operation made by:

☐ an Individual Operator?

☐ Partners? Enter number of partners, including self.... ☐
(Partners jointly operate land and share in decision making. DO NOT include landlord as partner.)

☐ a Hired manager?

Office Use
S. Unit
920
R. Unit
921
140

Please Continue on Page 2.

SECTION 2 — ACRES OPERATED

1. How many total acres of land are in this operation when you **include all cropland, pastureland, woods and waste**, all land owned, rented or managed, but **exclude** land rented to others and all grazing land used on an AUM *(fee per head)* basis? ..... 900 ac

2. Of the total acres reported above, how many acres would be **considered cropland** *(include all government program land)*? ..... 802 ac

20

SECTION 3 — CROPS

How to complete this section.
— Report for all the land you operated during the year, including land rented from others. (Include landlord's share).
— If harvest is not complete, make your best estimate of acres harvested and to be harvested and total production.
— Production is equal to acres harvested and to be harvested times average yield per acre.
— LAND IRRIGATED, include all land watered one or more times for the 1986 crop.
— Report acreage and production for both irrigated and non-irrigated crops when listed separately.

1. Please report **winter wheat** acres harvested and total production for the **1986 crop year.**

WINTER WHEAT	Total Crop
Acres harvested for **grain**	665 ac
Total **grain production**	666 bu

2. The following information is needed for **crops harvested during 1986.**

LAND IRRIGATED, include all land watered one or more times for the 1986 crop.. 839 ac

CORN *(exclude popcorn and sweet corn)*	Non-Irrigated Crop	Irrigated Crop
Acres planted for **all purposes**	574 ac	568 ac
Acres harvested and to be harvested for **grain and seed**	575 ac	569 ac
Total **grain and seed production**	576 bu	570 bu
Acres cut for **silage**	577 ac	571 ac
Total **silage production**	578 tn	572 tn
Acres for **all other purposes,** including abandonment	579 ac	573 ac

Please Continue on Next Page

SECTION 3 — Cont'd

20

SOYBEANS

	Non-Irrigated Crop	Irrigated Crop
Acres planted for **all purposes**	615 ac	603 ac
Acres harvested and to be harvested for **beans**	616 ac	604 ac
Total **production**	617 bu	605 bu
Acres for **all other purposes**, including abandonment	618 ac	606 ac

SUDAN and SORGHUM X SUDAN CROSSES

Acres planted for hay, pasture, or other purposes	837 ac	838 ac

SORGHUM *(milo)*

Acres planted for **all purposes**	527 ac	521 ac
Acres harvested and to be harvested for **grain**	528 ac	522 ac
Total **grain production**	529 bu	523 bu
Acres cut for **silage**	530 ac	524 ac
Total **silage production**	531 tn	525 tn
Acres for **all other purposes**, including abandonment	532 ac	526 ac

HAY CROPS

Count each acre only once regardless of number of cuttings or different uses.
Dry weight for any dehydrated hay should be included.

ALFALFA AND ALFALFA MIXTURES

	Non-Irrigated Crop	Irrigated Crop
Acres cut at least once for **dry hay** *(exclude haylage and green chop)*	449 ac	447 ac
Total **production** of **dry hay** in tons	450 tn	448 tn

OR *(No. of bales _____ Avg. wt./bale _____)*

ALL OTHER HAY *(Include small grains cut for dry hay, clover, timothy, clover and grass mixtures, lespedeza, peanut, brome, coastal bermuda, sudan, sudan crosses, millet, other tame and wild hay.)*

Acres cut at least once for **dry hay** *(exclude haylage and green chop)*	456 ac	454 ac
Total **production** of **dry hay** in tons	457 tn	455 tn

OR *(No. of bales _____ Avg. wt./bale _____)*

Please Continue on Next Page

20

SECTION 3 — Cont'd

DRY EDIBLE BEANS *(pinto, navy and other)*

	Total Crop
Acres planted	851 ac
Acres harvested	852 ac
Total production *(clean basis)*	853 cwt

OTHER CROPS *(specify)*	Acres Harvested	Total Production
_____	ac	
_____	ac	
_____	ac	
_____	ac	

Acres of **ALL PASTURE LAND** *(include only land grazed this year and not harvested for grain or hay — exclude grazing allotments)*	807 ac
Cropland acres in **SUMMER FALLOW**	805 ac
ANY OTHER LAND not reported *(include woodland, waste, ponds, orchards, idle land, farm lots, etc. – exclude grazing allotments)*	800 ac

3. For the following **SMALL GRAINS** please report seedings for the **1987 crop year.**

WINTER WHEAT acres seeded and to be seeded for **all purposes**	868 ac
RYE seeded and to be seeded for **all purposes**	537 ac

Please Continue on Next Page

Crops Incomp.	1 - HAS 2 - UNK 3 - NO	138
Comp.	4	

4-DEC

SECTION 4 — HOG AND PIG INVENTORY

1. Are there now any **HOGS** or **PIGS**, regardless of ownership, on the total acres you operate?

☐ **YES** ☐ **NO** → 1a. Have there been any **HOGS** or **PIGS** on the total acres you operate since June 1, 1986?

☐ **YES** - *GO TO Item 5.* ☐ **NO** - *GO TO SECTION 5.*

2. HOGS and PIGS for BREEDING

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

Of these **sows and gilts** how many are expected to farrow:

1. From now through Dec. 1986, Jan. and Feb. 1987?... 331
2. During March, April and May 1987?..... 332

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

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

3. HOGS and PIGS FOR MARKET and HOME USE in each of the following four weight groups *(exclude breeding hogs reported in Item 2).*

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

4. **TOTAL** number of **HOGS and PIGS** *(add 2a through 3d)*..... 300

5. **SOWS and GILTS FARROWED** during Sep. Oct. and Nov. 1986 until now?..... 326

6. **PIGS** from these *(Item 5)* litters:

a. Now on hand..... 327

b. Already sold or slaughtered..... 328

7. **HOGS and PIGS PURCHASED** since June 1, 1986 now on hand *(Include feeder pigs purchased)*..... 317

If Item 7 is zero, skip to Item 9.

8. **FEEDER PIGS PURCHASED** during November 1986?..... 340

a. Average price per head.....$/¢ 341 .__ __

b. Average weight per head....Lbs. 342

9. **DEATHS** of **WEANED PIGS** and **OLDER HOGS** during:

Sept. Oct. and Nov. 1986?..... 335

10. **HOGS and PIGS BUTCHERED** and to be butchered in 1986.

a. On total acres you operate..... 336

b. For you at a custom butcher, locker or slaughter plant..... 337

Please Continue on Next Page

Hogs: Incomp.	1 - Has 2 - Unk 3 - No	499
Comp.	4	

1-Dec

SECTION 5 — GRAINS AND HAY IN STORAGE

Please account for the whole grains, soybeans and hay on hand or stored on the total acres you operate, whether for feed, seed, or sale. They can belong to you or someone else – or be stored under a government program *(loan, farmer owned reserve, or CCC).*

1. Whole Grains and Soybeans	NO	YES		1986 and earlier crop years
Is any:				
whole grain corn, shelled or ear corn, now on hand?	☐	☐	How many bu?	112
soybeans now on hand?	☐	☐	How many bu?	113
wheat, including all types *(winter, durum and spring)* now on hand?	☐	☐	How many bu?	126
2. Hay Is any hay now on hand?	☐	☐	How many tons?	131

3. What is the total storage capacity of all the bins, cribs, sheds, and other structures normally used to store whole grains or oilseeds on the total acres you operate? .....bushels 808

Stocks: Incomp.	1 - Has 2 - Unk 3 - No	141
Comp.	4	

SECTION 6 — UNHARVESTED SOYBEANS

Do you have any soybeans still in the field that you intend to harvest for beans?

☐ YES ☐ NO ⟶ *Go to next page*

Soybeans..... Acres Remaining to be harvested..... 120 ac

AND

Expected yield per acre..... 119 bu/ac

IMPORTANT:
Was this unharvested production included with soybeans on hand in Section 5 above?.... ☐ YES = 1 ☐ NO = 3 ....enter code 114

Please Continue on Next Page

SECTION 7 — LIVESTOCK

2

The next questions deal with cattle and sheep.
Please report animals of any age, including newborns,
on these acres right now, even if they belong to someone else.

1. How many all cattle and calves regardless of ownership, are on the total acres you operate?..... 350

1a. Of these *(# in Item 1)* head, how many are milk cows, both dry and in milk?.. 352

For sheep and lambs, please report the total number in your operation, regardless of where they are located. However, sheep or lambs being custom fed for slaughter market on someone else's land should be excluded.

2. How many sheep and lambs are in your total operation, regardless of location?.. 280

SECTION 8 — PARTNER'S NAMES

1. Did you check partners in Section 1, Item 4?

☐ YES ☐ NO - *Go to next page.*

(Please list partners' names below, or make necessary corrections if they are already entered.)

Name _____ 925	Name _____ 926
Address _____	Address _____
City _____ Zip _____	City _____ Zip _____
County _____ Phone (___) _____	County _____ Phone (___) _____
Name _____ 927	Name _____ 928
Address _____	Address _____
City _____ Zip _____	City _____ Zip _____
County _____ Phone (___) _____	County _____ Phone (___) _____

Please Continue on Next Page

SECTION 9 — CHANGE IN OPERATOR

Has this operation *(name on label)* been sold, or turned over to someone else?

☐ **NO** - *GO TO NEXT SECTION*

☐ **YES** - *Please identify the new operator(s).*

Name _____

Address _____ Phone _____

City _____ State _____ Zip _____

SECTION 10 — CONCLUSION

1. Do you make any day-to-day decisions for another farm or ranch?

☐ **YES** - *List other operation(s)* _____

☐ **NO** _____

2. Is your SSN and EIN printed correctly on the label?

☐ **YES** - GO TO ITEM 3.

☐ **NO** **To assist in identifying duplication with our list of farm operators, please report your social security number. If your operation has a Federal Employer Identification Number, this would be helpful. Disclosure of your SSN is voluntary and is collected under the general authority of Title 7, Section 2204, of the U.S. Code.**

Operator's Social Security Number 470 _ _ _ - _ _ - _ _ _ _

Operator's Employer ID Number 466 _ _ - _ _ _ _ _ _ _

3. Would you like to receive a free copy of the results of this survey?..... ☐ **YES = 1**..... 099

This completes the survey. Thank you for your help.

Reported by:_____ Date:_____

Telephone: (Area Code) _____ — (Number) _____

_____

_____

Respondent		Response Code		Sup/Enum	Eval	
1 Op 2 Sp 3 Oth 4 Est	101	2-Tel 3-Int 7-TR 8-IR 9-Inac	910	098	100	095

APPENDIX V

The December 1986 Enumerative Survey Questionnaire
(The source of the December 1986 area data)

Agricultural Statistics Board
National Agricultural Statistics Service
U.S. Department of Agriculture

DECEMBER 1986 Acreage & Livestock ENUMERATIVE SURVEY

Form Approved
O.M.B. Number 0535-0089
Expiration Date 6-30-87
C.E. 12-0037A
A—10
KANSAS, NEBRASKA

Response to this survey is voluntary and not required by law. However, cooperation is very important in order to establish acreage planted and current livestock and poultry numbers. Facts about your farm or ranch will be kept CONFIDENTIAL . . . and used only in combination with similar reports from other producers.

State	District	Segment	Tract	Sub-Tract
		00000		

Segment Number: _____

Tract Letter: _____

OPTIONAL	
407	408

County: _____

	OPERATION NAME				
	LSF ID	EIN	DECEMBER	JANUARY	CHICKENS
0	786	466	923	933	943
	COMBINATION OF INDIVIDUAL NAMES				
	LSF ID	EIN	DECEMBER	JANUARY	CHICKENS
1	788	468	929	939	949

☐ Verify Operation Name

(June Respondent if different than operator)

1. I need to make sure that we have your *(the operator's)* name and address complete and correct. *(Verify sticker if present)*

   Name of Farm, Ranch or Operation: _____

   Combination of Individual Names: _____

   ☐ Verify Combination of Individual Names

   Name of Operator: _____
   (First) (Middle) (Last)

   Address: _____
   (Route or Street)

   _____
   (City) (State) (Zip)

   Phone No.: ( ) —
   (Area Code)

   ENUMERATOR NOTE: *If* **SSN/EIN** *is recorded on this Page, verify with respondent and go to Item 3.*

   ☐ Verify Operator Name

2. To assist in identifying duplication with our lists of farm operators I would like to record **SOCIAL SECURITY NUMBER(S)** *(SSN)* and Federal **EMPLOYER IDENTIFICATION NUMBER(S)** *(EIN)* for your operation.

	OPERATOR NAME				
	LSF ID	SSN	DECEMBER	JANUARY	CHICKENS
2	790	470	924	934	944

SECTION A — TYPE OF OPERATION

1. In **June**, this tract was . . . . . The tract is **now:**

June	December		
☐ - Individually Operated	☐ - **Individually Operated**.....1	....**Enter Code**	845
☐ - Partnership or Joint	☐ - **Partnership or Joint**.....2		*If code is 1 or 3, go to Section B*
☐ - Managed Land	☐ - **Managed Land**.....3		

Landlord-Tenant, Cash-Rent, Share Crop arrangements should not be considered a partnership operation.

Continue if this tract is operated as a partnership.

2. Do all partners share equally in day-to-day decisions?.....**(enter)**.....

Number Of Partners
921

(Including operator)

☐ **YES** - *Consider the oldest as the operator.*

☐ **NO** - *The partner that makes most of the day-to-day decisions is the operator.*

Operator shown on **face page** *must be the one making most day-to-day decisions or the oldest. Make corrections if necessary.*

Now I need to make sure we have the names, addresses, and social security number for the other person(s) in this partnership or joint land operating arrangement. *(Verify stickers if present.)*

☐ *Verify Partner Name*

Name _____
(First) (Middle) (Last)

Address _____
(Route or Street)

_____ **Phone (** **)** _____ – _____
(City) (State) (Zip Code) (Area Code)

	LSF ID	S.S.N.	DECEMBER	JANUARY	CHICKENS
3	792 _ _ _ _ _ _ _ _ _	472 _ _ _ – _ _ – _ _ _ _	925	935	945

☐ *Verify Partner Name*

Name _____
(First) (Middle) (Last)

Address _____
(Route or Street)

_____ **Phone (** **)** _____ – _____
(City) (State) (Zip Code) (Area Code)

	LSF ID	S.S.N.	DECEMBER	JANUARY	CHICKENS
4	794 _ _ _ _ _ _ _ _ _	474 _ _ _ – _ _ – _ _ _ _	926	936	946

☐ *Verify Partner Name*

Name _____
(First) (Middle) (Last)

Address _____
(Route or Street)

_____ **Phone (** **)** _____ – _____
(City) (State) (Zip Code) (Area Code)

	LSF ID	S.S.N.	DECEMBER	JANUARY	CHICKENS
5	796 _ _ _ _ _ _ _ _ _	476 _ _ _ – _ _ – _ _ _ _	927	937	947

SECTION B — TRACT IDENTIFICATION

Show respondent the aerial photo. Point out Tract boundaries and other identifying landmarks to help respondent become familiar with the photo.

Has the June Tract been split or divided?

☐ **NO** or **DON'T KNOW** ☐ **YES,** *go to Item* (2.)

1. In June it was determined that you operate Tract _____ containing _____ • ____ acres.

(2.) Is any **land within** these Blue **Tract Boundaries,** currently **Operated by Someone Else** *(another person or firm)?*

☐ **YES** - *List below, new operator(s) of split tract(s). Draw boundary for split tract(s) and assign next unused tract code(s).*

NAME _____ TRACT _____

NAME _____ TRACT _____

NAME _____ TRACT _____

Continue this interview for operation identified on Face Page . . . then complete a separate Part-A for each name listed above.

☐ **NO,** *continue.*

3. Is any **land within** these Blue **Tract Boundaries, administered** or **controlled** by a Public agency, Industrial corporation or Grazing Association on an **AUM basis?**

☐ **YES** - *If Tract (as now drawn) is only PIGA land used on an AUM basis. . . . . enter tract acres in 849 code box. . . .then go to* Section P. . . . . 849 •

If Tract (as now drawn) includes PIGA and Non-PIGA land. . . . draw in PIGA boundary, in "dashed Blue". . .assign next unused tract code. Continue this interview for operation identified on Face Page. . . . . .then complete a separate Part-A for "new" PIGA tract.

☐ **NO,** *continue.*

4. How many acres are **YOU** now operating **inside** the **Tract Boundaries?**. . . . . 840 •
(Exclude acres of PIGA land used on an AUM basis.)
Enter current tract acres operated in the 840 code box. . . .then go to Section C.
(If tract acres are zero. . . go to Section P. . . *then contact current operator of June tract.)*

SECTION C — RESIDENCE, SCREENING AND FARM IDENTIFICATION

1. In **June**, the Operator **LIVED** . . . . . .the Operator **NOW LIVES:**

June	December		
☐ - INSIDE this tract	☐ - **INSIDE - 5**.	*Check box and enter code*.	81 ___ 1
☐ - OUTSIDE this tract	☐ - **OUTSIDE - 6**. . . .		
(Please explain, if change.)			

If you entered a: 5 - *Continue.*
6 - *Go to item* (4.)

2. Do any **other residents** of this household operate a **separate** farm or ranch?

☐ **YES** - 2a. Since June, did they move into this household or begin farming or ranching?

☐ **YES** - *(Enter Name)* _____

Assign next unused tract letter. Complete a new Part A. Continue this interview, go to item 3.

☐ **NO**

☐ **NO** - *Continue.*

3. *Is the December Tract operator, the* **same operator** *as in June?*

☐ **YES** - 3a. Since June, have you started a new agricultural land operating arrangement?

☐ **YES** - *Assign next unused tract letter, if the new arrangement is in addition to the land operating arrangement of this TRACT. Continue this interview. . .* THEN. . .*Complete a new Part A for the additional operating arrangement.*

☐ **NO** - *Go to item* (4.)

☐ **NO** - 3b. Do you operate land under any other name or land arrangement other than the one listed on the Face Page?

☐ **YES** - *Assign next unused tract letter. Complete a new Part A. Continue this interview.*

☐ **NO** - *Continue.*

(4.) During 1986, did you: *(Ask each question until first "yes" is checked.)*

☐ **YES**	☐ **NO**	Operate a farm or ranch?
☐ **YES**	☐ **NO**	Grow any crops? *(Exclude home garden)*
☐ **YES**	☐ **NO**	Have any cattle, hogs, sheep, goats or poultry?
☐ **YES**	☐ **NO**	Sell any agricultural products or receive any government program payments?
☐ **YES**	☐ **NO**	Is there **Now** any grain in storage, regardless of ownership, on the total acres you operate?
☐ **YES**	☐ **NO**	Are there any crop storage facilities on the total acres you operate?

OFFICE USE 818

Go to Section P *and Conclude Interview.*

Go to Section D.

SECTION D — SECTIONS TO BE COMPLETED

Are **Both Boxes** *at bottom of this page checked?*

☐ **YES** · *Go to* Section E ——→

☐ **NO** · *Continue.*

YES	NO	
☐	☐	— *Is tract operator* **NEW** *or* **DIFFERENT** *than operator shown on* Face Page Label?
☐	☐	— *Was Operation Name/Combination of Individual Names/Operator Name* **CHANGED** *or* **CORRECTED** *on* Face Page Labels?
☐	☐	— *Were any Partners* **DELETED** *or Names* **CHANGED** *or* **CORRECTED** *on Labels in* Section A, page 2?

Go to Section E ——→

Check Both Boxes →

DECEMBER	JANUARY

Go to Section E ——→

SECTION E — WHEAT OR RYE PLANTED IN TRACT FOR USE IN 1987

1. Has or will any **winter wheat or rye** be planted inside the **BLUE TRACT BOUNDARY?** *(Include volunteer wheat or rye for grain.)*

☐ **YES** - *Continue* ☐ **NO = 2** - *Enter Code, then go to* Section F 543

Now I would like to identify each field that is planted or will be planted to winter wheat or rye:

Field Number	Acres in Field	ACRES PLANTED OR TO BE PLANTED		WINTER WHEAT ACRES remaining to be PLANTED	Other Land Uses in Fields	
		Winter Wheat acres	Rye acres		USE	ACRES
1	2	3	7	8	9	10
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
	.	540 .	547 .	548 .		.
TOTAL ACRES		.	.			

(Verify total acres for each crop planted inside the blue tract boundary)

ENUMERATOR NOTE: *Column 2 equals Column 3 + 7 + 10.*

OFFICE USE
848 .

SECTION F — ACRES OPERATED

Check TYPE of OPERATION
(Refer to Section A, page 2)

- **Individually Operated** ☐ .... *Go to item 1.*
- **Partnership or Joint** ☐ .... *Go to item 1.*
- **Managed Land** ☐ .... *Go to Item (3.)*

1. Now I would like to ask you about the **total acres you operate** under this land arrangement. Include all cropland, woodland, pastureland and wasteland.

How many acres does This Operation:

a. **Own?**	901	+
b. **Rent from others?** *(Exclude land used on an AUM basis)*	902	+
d. **Rent to others?**	905	—
Then the **total acres operated** under this arrangement are *(item a + b — d)*	900	

Does this include all cropland, woodland, pastureland, wasteland and farmstead?

☐ **YES** - *Go to* Section G. ☐ **NO** - *Make corrections and go to* Section G.

(3.) Now I would like to ask you about the **total acres you operate** as a hired manager.

How many acres of land do you **operate** as a hired manager **under this land arrangement?**	904

Does this include all cropland, woodland, pastureland, wasteland and farmstead?

☐ **YES** - *Go to* Section G. ☐ **NO** - *Make corrections and go to* Section G.

SECTION G — HOGS AND PIGS ON ENTIRE FARM AND TRACT

HOGS AND PIGS INVENTORY

1. Are there now any **hogs** or **pigs** **regardless of ownership**, on the total *(Page 7)* acres you operate?

☐ YES ☐ NO

2. **Have there been any hogs or pigs** on these acres since **June 1, 1986?**

☐ YES - *Enter 1 in code box 492. then go to item 7.*

☐ NO - 2a. Will there be any **hogs** or **pigs** on the total acres you operate from now through **March 1, 1987?**

☐ **Yes** = 1
☐ **Unknown** = 2
☐ **No** = 3

Enter code and go to item 14. 492

Let's start with the HOGS and PIGS KEPT FOR BREEDING.
(Complete **Column A** *first.)*

		COLUMN A On Total Acres Operated	COLUMN B On Tract Acres
3.	How many of the breeding **hogs** and **pigs** are:		
a.	**Sows, gilts** and **young gilts** bred and to be bred?	* 301	201 *
	Of the **SOWS** and **GILTS** *(reported in item 3a)* how many are **expected to farrow:**		
	(1.) From now through **December 1986, January and February 1987?**	331	
	(2.) During **March, April and May 1987?**	332	
b.	**Boars** and **young males** for breeding?	* 302	202 *
c.	**Sows** and **boars** no longer used for breeding?	* 303	203 *

Now let's talk about the HOGS and PIGS for MARKET and HOME USE *(Exclude breeding hogs already reported in item 3.)*

4.	How many are in each of the following **four weight groups:**		
a.	Under 60 lbs.? *(Include pigs not yet weaned)*	* 311	211 *
b.	60 — 119 lbs.?	* 312	212 *
c.	120 — 179 lbs.?	* 313	213 *
d.	180 lbs. and over? *(Exclude hogs no longer used for breeding)*	* 314	214 *
5.	*Add (*) items 3 + 4:* Then the **total hogs and pigs** is	300	200

Is that correct? ☐ **YES** -*Continue* ☐ **NO** -*Make corrections and continue.*

5a. Are any of the **total hogs and pigs** located in any of the fields and buildings inside this blue tract boundary?

☐ **YES** - *Complete* **Column B,** *items 3—5.* ☐ **NO = 3** - *Enter code, go to item 7* 210

SECTION G — HOGS AND PIGS ON ENTIRE FARM (Cont'd)

PREVIOUS SIX MONTHS FARROWINGS ON ENTIRE FARM:

Now let's talk about sows and gilts that farrowed in the last six months.

	Column A On Total Acres Operated
7. How many **sows** and **gilts** farrowed during June, July and August 1986?	322
8. How many **pigs** from these *(item 7)* _____ litters are: a. Now on hand?	323
8. How many **pigs** from these *(item 7)* _____ litters are: b. Already sold or slaughtered?	324
9. How many **sows** and **gilts** farrowed during September, October, and November 1986, until now?	326
10. How many **pigs** from these *(item 9)* _____ litters are: a. Now on hand?	327
10. How many **pigs** from these *(item 9)* _____ litters are: b. Already sold?	328

PURCHASES:

Now let's talk about hogs and pigs purchased in the last six months.

11. How many hogs and pigs purchased since June 1, 1986 are now on hand? *(Include feeder pigs purchased)* *(If item 11 is zero, skip to item 13,)*	317
12. How many **FEEDER PIGS** were purchased during November 1986?	340
a. What was the average price per head? ..... Dollars and Cents	341 . __ __
b. What was the average weight per head? ..... Pounds	342

DEATHS AFTER WEANING ON ENTIRE FARM:

13. How many **weaned pigs** and **older hogs died** during: a. June, July and August of this year?	334
13. How many **weaned pigs** and **older hogs died** during: b. September, October and November?	335

HOGS AND PIGS BUTCHERED:

14. How many **hogs** and **pigs** have been or will be **butchered** in 1986: a. On land you operate?	336
14. How many **hogs** and **pigs** have been or will be **butchered** in 1986: b. For you at a custom butcher, locker or slaughter plant?	337

15. *Complete Code Boxes for Hogs on Entire Farm, then go to* Section H .....

DATA QUALITY
497
☐ 1 Complete ☐ 2 Estimated/*with reliable current Information.* ☐ 3 Estimated/*with no current Information* →

ENUMERATOR NOTE: *Complete Code Box 499 only when a "3" has been checked for Code Box 497.*

Entire Farm Hogs

PRESENCE
499
☐ 1 Has Hogs ☐ 2 Unknown ☐ 3 NO Hogs

SECTION H — CATTLE AND CALVES ON ENTIRE FARM

CATTLE AND CALF INVENTORY:

1. Are there now any **cattle** or **calves, regardless of ownership,** on the total *page 7* acres operated?

(Include cattle and calves owned or managed by the operation described on Face Page *now located on land administered or controlled by a Public agency, Industrial corporation or Grazing Association, on an AUM basis).*

☐ **YES** ☐ **NO** - 1a. Will there be any **cattle** and **calves** on the total acres you operate from now through the end of this year?

☐ **Yes** = 1
☐ **Don't know** = 2
☐ **No** = 3
} *enter code, then ask item 2* 371

2. Have there been any **cattle** and **calves** on these acres at any time in 1986?

☐ **YES** - *Go to Item 13.*
☐ **NO** - *Go to Item 17.*

How many are:

		On Total Acres Operated and Public, Industrial, or Grazing Association land
3.	**Beef cows?** *(Include heifers that have calved.)*	351
4.	**Milk cows,** whether dry or in milk? *(Include milk heifers that have calved.)* *(Skip to item 5, if no milk cows)*	352
4a.	Cows milked yesterday?	349
4b.	Milk produced yesterday? *(Report only one day's production)* — **Pounds**	501
	— **or Gallons**	502
5.	**Bulls** weighing 500 pounds or more?	353
6.	**Heifers** weighing 500 pounds or more: a. For **beef cow** replacement? *(Exclude heifers that have calved.)*	354
	b. For **milk cow** replacement? *(Exclude heifers that have calved.)*	355
	c. **Other heifers** weighing 500 pounds or more? *(Exclude heifers that have calved.)*	356
7.	**Steers** weighing 500 pounds or more?	357
8.	**Heifer, steer and bull calves** weighing less than 500 pounds? *(Include newborn calves)*	358
9.	*Add items 3 through 8.* Then the **total cattle and calves** is	350

Is that correct? ☐ **YES** - *Continue.* ☐ **NO** - *Make corrections and continue.*

9a. Will the total **cattle** and **calves,** now on the total acres you operate, **change** from now through the end of this year?

☐ **Yes** = 1
☐ **Don't know** = 2
☐ **No** = 3
.... 371

SECTION H — CATTLE AND CALVES ON ENTIRE FARM (Cont'd)

CATTLE AND CALVES ON FEED FOR SLAUGHTER MARKET:

On Total Acres Operated

10. How many **CATTLE** and **CALVES** on land you operate are being fattened on **full feed** for slaughter market? 370

(If item 10 is greater than 200 head, skip to item 12)

10a. Total pounds of **grain and concentrate feed** fed *(Item 10)* cattle and calves yesterday:. . . . . .(_____ x _____) 372
Pounds/head *number of head*

10b. Total pounds of **silage** fed *(Item 10)* cattle and calves yesterday:. . . . . .(_____ x _____) 373
Pounds/head *number of head*

(For items 12-15, include births and deaths of cattle and calves on Public, Industrial or Grazing Association land.)

CALF CROP

On Total Acres Operated and Public, Industrial, or Grazing Association land.

12. How many **cows** and **heifers** now on land you operate are expected to **calve** between now and **December 31, 1986?** 361

13. How many **calves** born since January 1, 1986 ..... *(Include dairy and beef calves but exclude calves purchased)*

a. Are still on land you operate? ..... 363 *

b. Have been sold, moved off your land, or slaughtered? ..... 364 *

c. Have died? ..... 365 *

14. *Add * items (13a, b and c):* Then the total **calves** born since **January 1, 1986** is 362

14a. Of these *(item 14)* calves, how many were born since **June 1, 1986?** 374

DEATHS:

15. How many **cattle** and **calves died** during 1986? *(Include deaths from disease, accidents, exposure or killed by predators)* .....

a. **Cattle** 367

b. **Calves** 368
(Include calves entered in item 13.c)

CATTLE AND CALVES BUTCHERED:

17. How many **cattle** and **calves** have been or will be **butchered** in **1986?** *(exclude animals sold alive)* .....

a. On land you operate? 377

b. For you at a custom butcher, locker or slaughter plant? 378

18. *Complete Code Boxes for Cattle on Entire Farm, then go to* Section I .....

If no **cattle** *or* **calves** *on entire farm, Complete Code Boxes for Cattle on Entire Farm, then go to* Section J, *page 13.*

ENUMERATOR NOTE: *Complete Code Box 498 only when a "3" has been checked for Code Box 496.*

DATA QUALITY
496
- ☐ 1 Complete
- ☐ 2 Estimated/*with reliable current Information.*
- ☐ 3 Estimated/*with no current Information* →

Entire Farm Cattle
PRESENCE
498
- ☐ 1 Has Cattle
- ☐ 2 Unknown
- ☐ 3 NO Cattle

SECTION I — CATTLE AND CALVES ON TRACT

Now I would like to ask you about cattle and calves inside the blue tract boundary or with access to this land.

1. Are there any **cattle** and **calves** now inside the **blue tract boundary** that **cannot move freely to land outside?**

   ☐ **YES** - *Record in* **Block A** *then go to item 2.*

   ☐ **NO** - *Go to Item* (2.)

(2.) Are there any **cattle** and **calves** that can **now move freely** across this **blue tract boundary** to land both **inside** and **outside?**

☐ **YES** - *Record in* **Block B.**

☐ **NO** - *Go to* Section J, page 13. →

How many are: *Enter Field Numbers* →	BLOCK A		BLOCK B		
					Office Use
3. **Beef cows?** *(Include heifers that have calved)*	251	251			251
4. **Milk cows,** whether dry or in milk? *(include milk heifers that have calved.)*	252	252			252
5. **Bulls** weighing 500 pounds or more?	253	253			253
6. **Heifers** weighing 500 pounds or more: a. For **beef cow** replacement? *(Exclude heifers that have calved.)*	254	254			254
6. **Heifers** weighing 500 pounds or more: b. For **milk cow** replacement? *(Exclude heifers that have calved.)*	255	255			255
6. **Heifers** weighing 500 pounds or more: c. **Other heifers** weighing 500 pounds or more? *(Exclude heifers that have calved)*	256	256			256
7. **Steers** weighing 500 pounds or more?	257	257			257
8. **Heifer, steer** and **bull calves** weighing less than 500 pounds? *(include newborn calves)*	258	258			258
9. Then the **total cattle** and **calves** in the field is	250	250			250
Is that correct? ☐ **YES** - *Continue.* ☐ **NO** - *Make corrections and continue.*			X	X	
Ask for **Block B** ONLY:					
10. Acres in field **inside tract?**					
11. Acres in field **outside tract** that cattle have access to? *(Outline on photo with dashed red line)*					
12. *Add 10 + 11:* **Total** acres cattle have access to?					

Office Use
248

SECTION J — CATTLE AND CALVES ON PUBLIC, INDUSTRIAL OR GRAZING ASSOCIATION LAND

1. Does this operation own or manage cattle now located on land administered or controlled by a Public agency, Industrial corporation or Grazing Association, on an AUM basis?

☐ **YES** · *Continue.* ☐ **NO** · *Go to* Section L. ⟶

How many are:

3.	**Beef cows?** *(Include heifers that have calved)*	151
4.	**Milk cows,** whether dry or in milk? *(Include milk heifers that have calved)*	152
5.	**Bulls** weighing 500 pounds or more?	153
6.	**Heifers** weighing 500 pounds or more: a. For **beef cow** replacement? *(Exclude heifers that have calved)*	154
	b. For **milk cow** replacement? (Exclude heifers that have calved)	155
	c. **Other heifers** weighing 500 pounds or more? *(Exclude heifers that have calved)*	156
7.	**Steers** weighing 500 pounds or more?	157
8.	**Heifer, steer and bull calves** weighing less than 500 pounds? *(Include newborn calves)*	158
9.	Then the **total cattle and calves** on Public, Industrial or Grazing Association Land is	150

Is that correct? ☐ **YES** · *Continue.* ☐ **NO** · *Make corrections and continue.*

ENUMERATOR NOTES:

12. *Were the cattle now located on Public, Industrial, or Grazing Association Land included in* Section H?

☐ **YES** · *Go to* Section L, *page 16.*
☐ **NO** · *Include them in* Section H, *then go to* Section L, *page 16.*

NOTES

NOTES

SECTION L — SHEEP AND LAMBS ON ENTIRE FARM

1. *Is the* **JANUARY Box** *checked in* Section D, *page 5?*

☐ **YES**

☐ **NO** - 2.1 Are there now any **sheep or lambs, owned by another person or firm,** on the total *(page 7)* acres operated?

Include sheep and lambs owned or managed by this operation now located on land administered or controlled by a PIGA agency, on an AUM basis.

☐ **YES** - *go to item 3, complete* **Column B** *only.*

☐ **NO** - 2.1a Have there been any sheep or lambs, that were **owned by someone else,** on these acres at anytime in 1986?

☐ **YES** - *go to item 7, page 17 (Complete* **Column B** only.)

☐ **NO** - *go to* **SECTION M,** *page 18.*

2. Are there now any **sheep or lambs, regardless of ownership,** on the total *(page 7* acres operated?

Include sheep and lambs owned or managed by this operation, now located on land administered or controlled by a PIGA agency, on an AUM basis.

☐ **YES** ☐ **NO** - 2.a Have there been any sheep or lambs, **regardless of ownership,** on these acres at anytime in 1986?

☐ **YES** - *go to item 7, page 17. (Complete Column A, then Column B.)*

☐ **NO** - *go to* **SECTION M,** *page 18.*

Now I would like to record **stock sheep** and **lambs, by owner.** *(Complete Column A, then Column B.)*

COLUMN B

Owner: Address: (City) (State) (Zip) Phone ( ) -

OL = 2 NOL = 1 412

	COLUMN A Tract Operator		COLUMN B Other Owners	
3. How many **stock sheep** and **lambs** are: *(Exclude lambs and sheep being fattened for slaughter market.)*				
a. **Ewes,** one year old and older?	281	*	161	*
b. **Rams and wethers,** one year old and older?	282	*	162	*
c. **Ewe lambs,** born before October 1, 1986?	283	*	163	*
d. **Wether and ram lambs,** born before October 1, 1986?	284	*	164	*
e. **New crop lambs,** born since October 1, 1986?	285	*	165	*

LAMBS and SHEEP ON FEED for SLAUGHTER MARKET:

	Tract Operator		Other Owners	
4. How many **lambs** and **sheep on feed** now are: *(Exclude stock sheep and lambs reported above.)*				
a. **Lambs on feed** for slaughter market?	286	*	166	*
b. **Sheep on feed** for slaughter market?	287	*	167	*
5. *Add items 3 and 4:* Then the **Total Sheep and Lambs** are	280	*	160	

Is that correct? ☐ **YES,** *continue* ☐ **NO,** *make corrections.*

EWES REMAINING TO LAMB IN 1986:

	Tract Operator		Other Owners	
6. How many **ewes,** now on the total acres operated, are **expected to lamb** between now and **December 31, 1986?**	427		837	

SECTION L — SHEEP AND LAMBS ON ENTIRE FARM (Cont'd)

(RECORD by OWNER)

COLUMN B

Owner: _____ Address: _____ (City) _____ (State) (Zip) _____ Telephone (___) _____ - _____

☐ OL = 2 ☐ NOL = 1

412

	COLUMN A Tract Operator	Other Owners
1986 LAMB CROP:		
7. How many lambs were born on your operation between October 1, 1985 and September 30, 1986? *(Include only live born)*.....	288	168
DEATHS ON THIS OPERATION:		
8. How many **lambs** from 1986 lamb crop, **died** *(Include only live born)*.....	425	835
9. How many **sheep died** during 1986? *(Exclude losses of 1986 lambs.)*.....	426	836
FARM SLAUGHTER:		
10. How many **sheep** and **lambs** were **butchered** in 1986? a. On your operation?.....	419	829
b. Custom butchered for you at a locker or slaughter plant?.....	420	830
WOOL PRODUCTION ON THIS OPERATION: *(Report Sheep and Lambs ONLY ONCE if sheared both Spring and Fall)*		
11. How many **stock sheep** and **lambs** were **shorn** in 1986? *(Exclude fed lambs and feedlot sheep shorn)*.....	421	831
a. How many **pounds** of **wool** were shorn from these **stock sheep** and **lambs** in 1986? *(Include tags)*.....	422	832
12. How many **fed lambs** and **feedlot sheep** were **shorn** in 1986? *(Exclude stock sheep and lambs reported in item 11.)*.....	423	833
a. How many **pounds** of **wool** were shorn from these **fed lambs** and **feedlot sheep** in 1986? *(Include tags)*.....	424	834

SECTION M — CHICKENS ON TRACT

Let's talk about chickens on the land inside the blue tract boundary.

1. Are there any **chickens** *(excluding commercial broilers)* **inside this blue tract boundary?**

☐ **YES** · *Continue.* ☐ **NO** · *Go to* Section N, page 20. →

2. Are any of these **chickens under contract** with another person or firm?

☐ **YES** · *Continue.* ☐ **NO** · *Complete* **Column A,** *only.*

2a. Are **all chickens** on this tract **under contract?**

☐ **NO** · *Complete* **Column A,** *for chickens not under contract. Then complete* **Column B.** ☐ **YES** · *Complete* **Column B,** *only.*

	COLUMN A NOT UNDER CONTRACT	COLUMN B UNDER CONTRACT
7b. How many eggs were **produced** in one day by all layers inside this **blue tract boundary?** *(Give number for most recent day available.)*	482	582
8. How many **hens** and **pullets** of **laying age** are inside this **blue tract boundary?** *(Include layers being forced molted)*	481 *	581 *
8a. Of the *(Item 8)* hens and pullets, how many are one year old and over?	484	584

Of the remaining chickens in your flock on this tract, how many are:

9. **Pullets** not yet of laying age, but three months old and over?	485 *	585 *
10. **Pullet chicks** and pullets under three months old?	486 *	586 *
11. **Roosters** and **male chickens** *(all male breeding stock)?*	487 *	587 *
12. *Add * items* (8 + 9 + 10 + 11): Then the **total chickens** is *(Excluding commercial broilers)*	480	580

SECTION M — CHICKENS ON TRACT (Cont'd)

13. During **November**, how many **hens** and **pullets** of laying age were:	COLUMN A NOT UNDER CONTRACT	COLUMN B UNDER CONTRACT
a. Sold?	488	588
b. Lost or destroyed from disease, accident, exposure etc?	489	589
c. Added to your flocks?	490	590

(Ask Item 15 only if entry in **Column B***)*

15. Person or firm that owns chickens under contract:

Name of Firm: _____

Name of Owner or Manager: _____
(First) (Middle) (Last)

Address: _____
(Route or Street)

_____
(City) (State) (Zip)

OFFICE USE

405
1 = NOL 3 = OL

SECTION N — DECEMBER SUPPLEMENT FOR ENTIRE FARM

1. *Do you have an addressed* **DECEMBER SUPPLEMENT** Questionnaire?

☐ · **YES** ☐ **NO** · *Is the* **December box** *checked in* SECTION D, page 5?

☐ **YES** ☐ **NO,** *go to* SECTION O, below.

Complete a **DECEMBER SUPPLEMENT Questionnaire**. . . . . *.then complete* SECTION O.

SECTION O — RESPONDENT CODE

Check Respondent and enter Code.

☐ **Operator/Manager** **1**
☐ **Spouse** **2**
☐ **Other** *(Enter name below)*. **3**
☐ **Observed Data Only · Refusal** **4**
☐ **Observed Data Only · No Respondent** **5**

. . . . . **Enter Code** 010

Record name of respondent if not the operator or spouse. _____

SECTION P · *CONCLUDE INTERVIEW.*

Enumerator _____ **Date** _____

Enum. ID	Resp. Coop.
098	103
	1—None 2—Poor 3—Fair 4—Good 5—Excellent

OFFICE USE	
Julian Date	Q.C.
095	100