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Service

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2022 Soybean Objective Yield Survey

Interviewer's Manual

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Chapter 1 – Soybean Objective Yield Survey

General

You are one of over 300 enumerators in 11 States employed to obtain information from farmers about their soybean fields and to make a series of observations on these fields. This Objective Yield Survey is a part of an overall program to provide estimates of crop yields and acreage. Objective Yield Surveys have been conducted for many years and have provided reliable indications of yield.

States participating in the Soybean Objective Yield program include AR, IL, IN, IA, KS, MN, MO, NE, ND, OH and SD. In these States, interview and field work will be completed for all samples.

The importance of your work will become apparent as you read how these surveys operate. Briefly, your job consists of interviewing designated farm operators and making some monthly observations in one or more of their soybean fields. The operators were selected from the June Area Survey conducted in early June. Monthly visits to the fields start in late August and continue until each field reaches maturity. On the first contact, you will talk to the operator, identify the sample field(s), and complete an interview for each sample field. These observations are recorded on a Form A.

In the sample field, you will mark off two small plots called "units" in which you will make plant and fruit counts each month during the growing season.

When the crop is mature, you will harvest part of the sample units and ship a small sample of the crop to a lab where it will be weighed and tested for moisture content. Soon after the crop is harvested, you will glean some of the fields. Form E is used for gleaning observations and is completed for one-fourth of the samples.

The terms "Objective Yield Survey" and "Objective Yield Forecasts" are used frequently in this work. The term "objective" means that the basic information is based upon actual counts and measurements. Objective Yield Surveys are scientifically designed; and field observations and measurements must be made precisely according to prescribed procedures given in this manual. Objective yield forecasts are based on counts and measurements of a crop after it has emerged and before it is mature. The accuracy of each crop production forecast depends directly upon your performance and the performance of all other enumerators working on this survey.

Purpose

The purpose of the Soybean Objective Yield Survey is to provide:

1. Counts and measurements on this crop which can be used to forecast or estimate crop yields per acre on September 1, October 1, November 1, and at the end of the season.
2. Counts and weight of soybeans left in the field after harvest to estimate harvesting loss per acre.
3. Changes in acreage intended for harvest that result from fields being plowed up or destroyed after the June Area Survey, but before harvest.

Following procedures for this survey, you and other enumerators will obtain counts of plants growing in specified areas of sample fields throughout your State each month. Mature soybeans growing within the sample units will be harvested according to prescribed procedures. The various counts and measurements you obtain on the monthly surveys are combined and used with forecasting formulas to predict yields per acre. Estimates of yield are obtained at harvest time when you harvest the sample units. Objective Yield Survey results have shown that these various field counts, and measurements provide reliable forecasts and estimates of yield for individual States and for the Nation. The sample units are too small, however, to provide reliable yield estimates for an individual field.

In late August, enumerators in 11 States will enter soybean fields to mark off objective yield units. It is most important to locate these units properly and make all counts and measurements accurately.

2021 Soybean Objective Yield Survey Statistics

Number of States in Program	11
Estimate Samples Laid Out	1,530
Total Acreage in Sample Units	1.0
Harvested Acres in OY States.....	66,520,000
Percent of U.S. Acres Harvested	80.8%
Percent of U.S. Crop Production.....	81.7%

From the table above you can understand why careful, accurate field work is so vital to this survey.

Farmer Benefit

The purpose of the objective yield survey is to accurately predict the production of soybean crops at the State, Regional and National levels beginning with the September 1 forecast in the September Crop Production report.

As you know, the size of these crops and any change in the size are crucial information needed by many people involved in and out of agriculture. This is why our reports make national news as these crops near harvest time.

The individual most needing this information is the farmer, for only with accurate statistical information about the size of these crops can the farmer make knowledgeable decisions about:

1. Marketing Strategies – Information used to sell early using forward contracts, to hedge on the futures markets, to sell on the cash market, or to use any of these in combination.
2. Farm Business Practices – Information used to make decisions on various aspects of farm business operations, such as: Using On-Farm storage in place of selling and/or storing at the local elevator, or changing intended usage of a planted crop.

The objective yield survey provides factual information which is a tool farmers can use to make knowledgeable business decisions. This tool is needed by any farmer who sells soybeans.

Development of Objective Yield Surveys

The National Agriculture Statistics Service (NASS) has forecasted and estimated the yield of major crops for many years. Although crop acreage changes from year to year, some of the largest variations in crop production are

caused by fluctuations in yield. For nearly a century NASS based its yield forecasts on voluntary producer appraisals of expected yield. Objective field measurement surveys were developed to compliment grower surveys and allow statisticians to fine-tune crop forecasts.

Work using objective yield measurements on wheat, corn and cotton began in the late 50s. The increasingly important soybean crop was added in the early 60s.

Forecasts and estimates using objective yield procedures are based on:

1. Actual counts and measurements made in sample fields by trained enumerators.
2. Data obtained by technicians making laboratory analyses of fruit from the crops.

Two components of objective yield data:

1. Weight of the fruit and number of fruit (pods, bolls, ears, etc.) are used to calculate a biologically based yield.
2. Post-harvest gleanings data is used to estimate harvest losses. The gleanings estimate is subtracted from the gross yield estimate derived from pre-harvest sample data to obtain a net yield estimate for each state.

Use of Reports Issued by USDA

Reports issued by the Department of Agriculture provide reliable and timely information for use by farmers, bankers, credit associations, buyers, agricultural economists, policy makers, etc. When all participants in the industry are accurately and equally informed by an unbiased source, no one has the advantage of rumors or other special information that could unfairly influence prices.

These reports may reach the farmer through farm magazines, commodity news service reports, Internet, television, radio, newspapers, etc. Virtually all of these reports are based on NASS crop reports. In addition, farmers and other data users can request reports through their State Field Office.

Sometimes farmers feel that USDA reports only drive prices down. It is true that prices may change based on crop reports. In the long run, however, it's the actual supply entering the market along with demand that determines prices received by farmers. Reports have had a positive effect on prices as often as a negative effect over the years.

Remember, if unbiased crop reports were not available to all parties, industry reports would be the only data available for farmers to use.

Reports from Soybean Objective Yield Surveys

September Crop Production <ul style="list-style-type: none">• Acreage, Yield and Production (<i>forecast</i>)	September 12, 2022
October Crop Production <ul style="list-style-type: none">• Acreage, Yield and Production (<i>forecast</i>)	October 12, 2022
November Crop Production <ul style="list-style-type: none">• Acreage, Yield and Production (<i>forecast</i>)	November 9, 2022
Annual Summary <ul style="list-style-type: none">• Acreage, Yield and Production (<i>final, all crops</i>)	January 10, 2023 (<i>Tentative Date</i>)

The Sample

The soybean fields included in the Objective Yield Survey are selected from soybeans reported in the tracts enumerated during the annual June Area Survey. The sample is drawn so the probability of any tract being chosen is proportional to the size of the acres reported of the crop in the tract. Within the same sample stratum, 40-acres of a crop in the tract is twice as likely to be chosen as 20-acres of the crop in the tract. The sample includes reported acres as well as large ones. In some cases, an operation with large soybean acreage reported in the tract is chosen two or more times, and this means it will have two or more objective yield samples assigned to it.

How Rows and Paces are Determined for Objective Yield

There is an upper limit on the field acres which are used to determine rows and paces. For corn, cotton, and soybean surveys, the acres are set to 80 if there are more than 80 acres in the field. For all the wheat OY crops, the maximum field acres used are 128 acres. The field is assumed to be rectangular and the width is calculated as 5/8 of the length. These numbers are converted to paces and random numbers used to generate row and pace counts.

When corn, cotton, and soybean, row and pace counts are generated, an adjustment is made so that the sample falls within 1/4 of the field (using the maximum field size described above). For wheat, when the number of rows and paces are generated, an adjustment is made so that the unit 1 sample falls within 1/4 of the field if field acres are ≤60 acres, and within 1/9 of the field if field acres are >60.

These adjustments limit how many rows and paces the enumerators need to walk into the fields. For corn, cotton, and soybean surveys, the maximum number of rows possible is 296 and the maximum number of paces is 473. For wheat, the maximum number of rows for unit 1 is 409 and the maximum number of paces for unit 1 is 256. (Unit 2 is then calculated as Unit 1 + 30 more paces).

Equipment

The items of equipment and supplies which will be used on the Soybean Objective Yield Survey are listed below. Your supervisor is responsible for furnishing all your necessary supplies and equipment; you are responsible for the proper use and care of all items provided. If your supplies run low or equipment becomes unusable, notify your supervisor immediately.

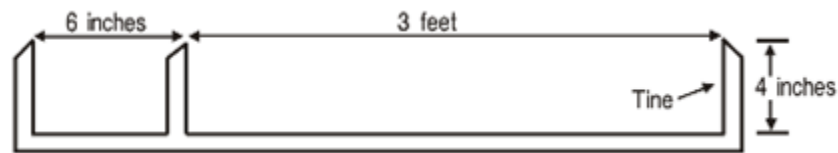
List of Equipment and Supplies

<input checked="" type="checkbox"/> ITEM	<input checked="" type="checkbox"/> ITEM
<input type="checkbox"/> Interviewer's Manual	<input type="checkbox"/> Measuring Tape-feet in tenths of ft.
<input type="checkbox"/> Identification Card	<input type="checkbox"/> Four-foot Wooden Dowel Stick
<input type="checkbox"/> Form NAS-011 (Time and Mileage)	<input type="checkbox"/> Soybean Frame
<input type="checkbox"/> Motor Vehicle Accident Report Kit	<input type="checkbox"/> Anchor Pin
<input type="checkbox"/> EPA Booklet "Protect Yourself from Pesticides"	<input type="checkbox"/> Red Florist Stakes
<input type="checkbox"/> First Aid Kit	<input type="checkbox"/> Blue Florist Stakes
<input type="checkbox"/> County Maps	<input type="checkbox"/> Unit Location Stakes
<input type="checkbox"/> State Highway Map	<input type="checkbox"/> Corner Stakes
<input type="checkbox"/> Canvas Satchel	<input type="checkbox"/> Flagging Ribbon
<input type="checkbox"/> Clipboard	<input type="checkbox"/> Red Plastic Tags
<input type="checkbox"/> 3-Ring Notebook	<input type="checkbox"/> Paper Bags
<input type="checkbox"/> Sample Field Kit Envelopes	<input type="checkbox"/> Rubber Bands
<input type="checkbox"/> Extra Copies of Forms	<input type="checkbox"/> Sample ID Tags
<input type="checkbox"/> Aerial Photos	<input type="checkbox"/> Shipping Labels or Address Tags
<input type="checkbox"/> Photo Mailing Boxes	<input type="checkbox"/> Tyvek Envelopes
<input type="checkbox"/> Ball Point Pen	<input type="checkbox"/> Kraft Envelope-9-1/2" x 12"
<input type="checkbox"/> Black Permanent Marker	<input type="checkbox"/> White Envelopes letter size
<input type="checkbox"/> Pencils-Red & Blue Lead	<input type="checkbox"/> Masking Tape
<input type="checkbox"/> Hand Counter	

Unused supplies are to be returned to the State Field Office at the end of the season when instructed by your Survey Statistician.

Soybean Frame

The one piece soybean frame is made of steel bar stock to measure precisely 6 inches between the long sides of the first 2 tines and 36 inches inside the other tines. Avoid any misuse of the frame that might cause it to bend, changing the area to be measured.



Proper use of the soybean frame is most important as are all counts made within each unit. To illustrate: suppose the average soybean row width for all samples was 9.0 inches. Using the 42 inch soybean frame times a 9.0 inch row width gives an area of 10.5 square feet per sample or less than 1/3 acre of soybeans that is measured and counted to represent all soybeans in the United States. This is why careful, accurate field work is so vital in the survey.

Quality Control and Supervision

The Objective Yield Quality Control program is designed to aid in the supervision of enumerators, detect faulty equipment, and to assure that proper survey procedures are followed. A good quality control program will improve the results of the Objective Yield Survey.

The Survey Statistician is responsible for the overall objective yield program. The Survey Statistician provides most of the training at your State Workshop and the necessary equipment and supplies needed for you to complete your assignments.

The Supervisory Enumerator is your immediate supervisor. Your supervisor will provide much of the "on site" field training you will need to complete your assignments. Your supervisor will also spend several hours with each enumerator during the first few days of each survey period. New enumerators will be visited first and if necessary, revisited after they have completed samples on their own.

Each Supervisory Enumerator will complete at least one quality control form (Q-1) for each enumerator under his or her supervision for each crop assigned. Upon receipt of completed Form B records, the Survey Statistician will inform the supervisory enumerator of the samples selected for quality control. Samples previously worked with the supervisor will be excluded. Whenever possible, the supervisor and the enumerator should return to the sample field together while the supervisor completes the Q-1 check of the enumerator's counts. The supervisor and enumerator must discuss any differences in counts and the reason for these differences. These differences will be resolved with the enumerator and documented on the Form Q-1.

Pesticide Safety

Organophosphorus insecticides have been in common use for several years. Organophosphorus insecticides are used on most crops. Extreme caution must be taken to avoid overexposure to these insecticides.

A comprehensive pesticide safety program has been developed for all employees who may be exposed to pesticides while working on the Soybean Objective Yield Survey. The program is designed to protect you from the possibility of overexposure to harmful pesticides.

Overexposure to pesticides, particularly insecticides, could result from home, garden and farm use, as well as unrestricted work in objective yield fields. Objective yield survey work, however, will pose little or no danger to your health when the safety precautions listed in these instructions are followed. Consult your copy of the EPA booklet, "Protect Yourself from Pesticides - Guide for Agricultural Workers", for additional information.

The safety program provides for monitoring and restricting exposure to organophosphorus insecticides. These insecticides are highly toxic to humans within several hours after application. The toxicity drops over time, but the rate of decline depends on the product used, application rate, weather factors and other variables.

Determining Use of Organophosphorus Pesticides

You will ask if any pesticide with organophosphorus content has been applied in the past month. If yes, you will obtain the name of the pesticide and the latest application date. You should explain to the operator that you work in many fields on many different farms during a short period of time and that the sole purpose of the question is to ensure that you will not be unnecessarily exposed to harmful insecticides. Informative notes, such as: "The operator will not apply a pesticide;" "He will apply some later;" The name of the pesticide applied and the last application date; should be entered on the kit envelope for future reference.

Be sure and ask the operator where the information on pesticide spraying will be posted, so you can check it every month before you enter the sample field. Enter the location on the kit envelope.

The symptoms of pesticide poisoning may resemble fatigue or other common symptoms of illness. However, you can protect yourself by knowing and being alert to the early warning signs of poisoning.

Common Symptoms of Pesticide Poisoning

- Headaches
- Dizzy spells
- Nervousness
- Sudden weakness
- Sick stomach
- Cramps
- Vomiting
- Diarrhea
- Heavy sweating
- Breathing difficulty
- Seizures
- Coma
- Pupils of the eye reduced in size

Medical Attention

Go to the nearest qualified physician if poisoning symptoms appear. Explain your symptoms to your doctor and tell him you have been working in fields where insecticides may have been applied. Use your Form A's or B's or kit envelopes to determine the names of insecticides applied to fields where you have recently worked. Give this information to the doctor. Notify your Survey Statistician immediately. Do not return to work on Objective Yield Surveys unless you receive the doctor's permission and the Survey Statistician is notified.

IMPORTANT: Notify your survey statistician immediately any time medical attention is required.

A list of organophosphorus insecticides that are commonly used in soybean production is provided on the next page. The list includes the common names of recommended insecticides along with many trade names. If a trade name is not listed, you should determine the common name of the insecticide from the farm operator, insecticide dealer or County Extension Service. If an insecticide does not appear on the lists, the insecticide dealer or your County Extension Service should be able to tell you if it is an organophosphorus insecticide.

If on the initial Form A or Form B the operator informs you they will not apply any pesticide with organophosphorus content, you should put a note to that effect on the kit envelope. But, if you arrive at the sample field and it appears the operator has applied a pesticide (due to odor in the air, residue on leaves, spraying or dusting machinery or other evidence), contact the operator before continuing your observations.

If the operator applied a pesticide or is undecided, you should contact him each month to check on the application date and follow the field re-entry intervals specified below.

Field Re-Entry Intervals

The **field re-entry interval** is the amount of time that **MUST** pass after pesticides are applied before entering the field. The intervals must be observed without exception to safeguard your health. The intervals provided are not expected to interfere with completion of your assignment unless some extremely unusual pest management practices are followed.

Field Re-Entry Intervals Following Chemical Applications

Chemical Type:	Any Chemical	Organophosphorus Chemical	
Timing of Application:	Previous 24 hours	Previous 72 hours	Previous 30 days
Entry Restrictions:	Do Not Enter Field	Do Not Enter Field ¹	Follow Safety Requirements ²

¹ Field re-entry is permitted 72 hours after application was made.

² Prior to entering fields treated with an organophosphorus chemical application within the last 30 days, you must:

- Wear a long sleeve shirt, long trousers and head covering.
- Not wear any clothing more than one day without laundering.
- Limit work time to a maximum of 6 hours per day in these fields.
- Thoroughly wash all exposed skin (hands, face, etc.) that may have come into contact with plant foliage during the field visit.

Protection Against Pesticide Exposure

Protective Clothing

Wear a long sleeve shirt, long trousers and head covering when working in fields that have had organophosphorus pesticides applied within the past 30 days. Do not wear clothing exposed to organophosphorus residues for more than one day. Take care in storing and laundering clothing to avoid possible cross-contamination of other clothing. When plant foliage is wet, wear water resistant or waterproof protective gear to prevent absorption of insecticides.

Soap and Water for Decontamination

Each enumerator must carry water and bath soap when they work in fields that have had applications of organophosphorus insecticides. Upon completing work in such a field, thoroughly wash all exposed skin areas (hands, face) that may have contacted plant foliage.

Organophosphorus Chemicals Commonly used in Soybean Production

<u>Trade Name(s)</u>	<u>Common Name</u>
Orthene.....	Acephate
Lorsban	Chlorpyrifos
Cygon, Dimethoate	Dimethoate
Cythion, Malathion	Malathion
PennCap-M, Methyl Parathion	Methyl parathion
Thimet.....	Phorate
Pyrethroids	
Asana	Esfenvalerate
Warrior.....	Lambda-cyhalothrin
Ambush, Pounce	Permethrin
Carbamates	
Temik	Aldicarb
Sevin.....	Carbaryl
Furadan	Carbofuran
Lannate, Nudrin	Methomyl
Larvin	Thiodicarb
Other Compounds	
Dimilin.....	Diflubenzuron
Tracer	Spinosad

Sample Field Kits

For each sample, you will be given a large envelope containing the necessary forms for completing the work in that sample. On the face of the envelope is listed the crop, sample number(s), county, segment number, tract code(s), operator's name, address and phone number if available, "YES" or "NO" to "Lives in Segment", sample unit location information and the survey date each sample is to be laid out.

The necessary identification has been printed on the forms in the sample field kit envelope by the State office. If there is more than one sample in a tract, this information will be shown on the face of the kit envelope and there will be additional sets of forms included in the kit envelope, one for each sample.

When you make your first visit to each field, sketch a map on the face of the kit envelope showing the sample field, starting corner and unit locations. Make the map as large and clear as possible. If for any reason you are unable to complete your work, your supervisor or another enumerator should be able to return to the operation locate the sample field and units without difficulty by using your map. Indicate highway or farm road numbers and approximate mileage to the sample field.

Sample Field Kit Envelope

UNITED STATES DEPARTMENT OF AGRICULTURE NATIONAL AGRICULTURAL STATISTICS SERVICE Washington, D. C. 20250		**SAMPLE UNIT LOCATION**													
Official Business		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Sample No. _____</td> <td colspan="2" style="padding: 2px;">To be laid out _____</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center; padding: 2px;">(Month)</td> </tr> <tr> <td style="padding: 2px;">Rows/Paces along edge</td> <td style="padding: 2px; text-align: center;">Unit 1</td> <td style="padding: 2px; text-align: center;">Unit 2</td> </tr> <tr> <td style="padding: 2px;">Paces into field</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>		Sample No. _____	To be laid out _____			(Month)		Rows/Paces along edge	Unit 1	Unit 2	Paces into field		
Sample No. _____	To be laid out _____														
	(Month)														
Rows/Paces along edge	Unit 1	Unit 2													
Paces into field															
STATE _____ Crop _____		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Sample No. 1/ _____</td> <td colspan="2" style="padding: 2px;">To be laid out _____</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center; padding: 2px;">(Month)</td> </tr> <tr> <td style="padding: 2px;">Rows/Paces along edge</td> <td style="padding: 2px; text-align: center;">Unit 1</td> <td style="padding: 2px; text-align: center;">Unit 2</td> </tr> <tr> <td style="padding: 2px;">Paces into field</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>		Sample No. 1/ _____	To be laid out _____			(Month)		Rows/Paces along edge	Unit 1	Unit 2	Paces into field		
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	(Month)														
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Paces into field															
Variety _____ **Sample Field**		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Sample No. 1/ _____</td> <td colspan="2" style="padding: 2px;">To be laid out _____</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center; padding: 2px;">(Month)</td> </tr> <tr> <td style="padding: 2px;">Rows/Paces along edge</td> <td style="padding: 2px; text-align: center;">Unit 1</td> <td style="padding: 2px; text-align: center;">Unit 2</td> </tr> <tr> <td style="padding: 2px;">Paces into field</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>		Sample No. 1/ _____	To be laid out _____			(Month)		Rows/Paces along edge	Unit 1	Unit 2	Paces into field		
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Rows/Paces along edge	Unit 1	Unit 2													
Paces into field															
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Paces into field															
NOTES: _____ _____ _____		1/ Additional sample in this sample field													
FIELD SKETCH <div style="text-align: center;"> North ↑ </div>															

Guidelines for Completing the Form A Questionnaire

When contacting the operator, introduce yourself and tell him that you are working with National Association of State Departments of Agriculture (NASDA) for the U.S. Department of Agriculture (USDA). Explain that the USDA is conducting a yield survey and that this farm has been selected for study. Comment on the Objective Yield cover letter on the following page to the operator before the interview starts. Reference the segment image that was sent with the letter.

1. Entries must be legible and made in black lead pencil.
2. Put all entries in the boxes provided. Note the preprinted decimal. Do not write in any bold outlined office use box unless instructed to do so.
3. Write notes in the margins or blank spaces to clarify or explain entries.
4. Record all acreage entries to the nearest tenth acre. If whole acres are reported, enter a zero to the right of the decimal point.

Locating the Sample Operators

First, study your county highway map and locate the segments which have sample tracts. The field kit envelopes indicate the segment numbers. Make sure you are able to find each segment on the county map for which you have a sample field kit envelope.

If there is a need to locate the farm operator, look over each aerial photo and make sure you locate the designated tract. Look for the name and location of the tract operator. A tract operator may be living inside the segment. If the operator lives nearby but still outside the segment, the location of the residence may be marked on the photo or county map. Otherwise, some local inquiries will be necessary to find the operator.

Producer Letter Example



United States Department of Agriculture
National Agricultural Statistics Service
[Your] Field Office



[[Date]]

Dear Producer:

For more than 50 years, the Objective Yield Survey has played an integral part in U.S. crop production forecasts. USDA's National Agricultural Statistics Service (NASS) combines field measurements with farmer-reported survey data to publish monthly crop production estimates.

Why am I getting this letter?

The Objective Yield Survey will begin in late [month] for [commodity]. During [month], a NASS representative will call you and other selected producers to verify crop acreage reported on previous NASS surveys. The initial call will take 15 to 25 minutes of your time. With your permission, we will then enter your field(s) at the end of each month during the growing season to collect plant and fruit counts and measurements. Monthly follow-up visits, if needed, will not require your time or personal contact.

Information from the Objective Yield Survey will help you and other American farmers make informed business decisions on your operations.

How will the data be used?

This survey is a crucial tool for estimating [commodity] yield and production in the United States. All sectors of the agricultural industry rely on NASS yield and production estimates to help make sound business decisions. NASS publishes the findings for [commodity] each month, [month] through [month], in the monthly *Crop Production* report.

Thank you in advance for your support of our programs and [State] agriculture. If you have any questions or concerns, please contact me at (800) xxx-xxxx.

Sincerely,

[Director's Name]

Director, [Regional] Field Office

U.S. Department of Agriculture

National Agricultural Statistics Service

Mailing Address • City, State Zip
(000) 111-1111 • (000) 111-1111 FAX • www.nass.usda.gov

USDA is an equal opportunity provider and employer.

The purpose of this survey is to forecast and estimate crop yields based on counts and measurements from sample plots in selected fields. The operator's cooperation will be helpful. A number of the operators have had fields in the Objective Yield Survey in past years, so this will not be new to them. For the new operators, a further explanation of the purpose as outlined earlier in this chapter may be necessary. Remember that the operator is not required by law to participate in the survey.

Interview the farm operator using a conversational tone and answer any questions they may have. If the farm operator is not at home, arrange to call back later. If the operator is not expected in time for you to make a call back before the survey period is concluded, you may obtain the information from some other informed person. In the event no informed person can be found to give the information, note this on the Form A. Do not enter a field to lay out a unit without permission **even if** you know the operator personally. When it is impossible to obtain an interview during the assigned month, continue to attempt to interview the operator through the next survey period.

Turning in Completed Soybean Samples

You will be working from your home, but in close contact with a supervisor. Most of your work will be entered into CAPI or sent to the Lab. It is important that you review your work for each sample before submitting it. Be sure that all required data are entered and that you make notes fully explaining problems and all unusual situations. Always enter the data into CAPI and submit it on the same day the work was done. Also be sure to send the C and E Forms and related plant material on the same day you collect them.

When you ship samples of Soybeans to the laboratory, verify that each sample is properly identified with a completed identification tag fastened to the outside of the bag record the complete 18 digit tracking number on the Form B that corresponds with the shipment. When you ship the post-harvest sample (Gleaning) to the National Laboratory, send the completed E-form within the same Tyvek.

Monthly Program

The following table presents survey dates and forms to be completed.

Survey Date	Date Fieldwork Begins	Forms to be Completed
September 1	August 25	A & B ¹
October 1	September 24	B
November 1	October 25	B
After November 1	Just prior to final harvest	B
Post-Harvest Gleaning	Within 3 days after harvest	E ²

¹ Forms A and B will be completed for all samples for September 1.

² Form E will be obtained for every fourth sample.

September 1 Survey

All Form A's must be completed by the end of the September data collection period. This means you must complete all samples and any assigned samples before and during the September 1 survey. Make field observations and record counts and measurements on all Form B samples. A field visit may be necessary earlier than the survey work week to assure field observations are made before farmer harvest.

October 1 Survey

Field observations will be recorded on Form B for each sample in unharvested sample fields. Each unit judged to be in Stage 5 (Pods Brown, Almost Mature or Mature) will be harvested. A field visit may be necessary earlier than the survey work week to assure field observations are made before farmer harvest.

November 1 Survey

Field observations will be recorded on Form B for each sample in unharvested sample fields. Each unit judged to be in Stage 5 (Pods Brown, Almost Mature or Mature) will be harvested. A field visit may be necessary earlier than the survey work week to assure field observations are made before farmer harvest.

Final Pre-harvest

Field observations will be recorded on Form B for each sample in unharvested sample fields. Each unit judged to be in Stage 5 (Pods Brown, Almost Mature or Mature) will be harvested.

Sample fields to be harvested by the farmer after November 1 should be visited just ahead of harvest in order to complete a Form B and collect samples.

As farmer harvest of the sample field nears, maintain close contact with the operator. This is extremely important since the final preharvest observations should be made as close to farmer harvest as possible.

Post-harvest Gleanings Survey

Form E must be completed within 3 days following farmer harvest. It is important to glean the sample units immediately following harvest to avoid the risk of gleanings being disturbed by birds and rodents, or destroyed by post-harvest tillage operations.

There may be a few instances where extremely bad weather immediately after harvest makes the field inaccessible for a period of time. Close contact should be maintained with the operator to determine when you can enter the field.

USDA-ARS Project

USDA-ARS will continue the soybean disease analysis project using the pods from a subsample of the NASS Soybean OY sample. Field enumerators in all Soybean OY States will harvest all pods in the 3 foot section of row 2 in units 3 and 4.
The USDA-ARS Soybean Plant Disease Research Project was suspended in 2017 due to budgetary constraints.
This change will affect the enumeration of the Form A and field work.

–NOTES–

Chapter 2 – Terms & Definitions

General

Enumerators working on the Soybean Objective Yield Survey should be familiar with the definitions of the terms listed below. To gain the most benefit from training, enumerators should review the definitions of these terms. Appendix A of the "Interviewer's Manual" should serve as a reference for definitions except for the ones detailed below.

Common Objective Yield Survey Terms

Enumerator	Sample Field
Field	Segment
Lost Sample	Starting Corner
June Area Survey	Supervisory Enumerator
Objective Yield Sample	Survey Statistician
Operator	Tract
	Unit

June Area Survey – An acreage survey conducted in early June. The Objective Yield Survey sample is selected from the June Area Survey.

Narrow Row Soybeans – Soybeans planted with a planter setting of 18 inches or less between rows.

Objective Yield Sample – Consists of two units which are always identified as Unit 1 and Unit 2. Each sample is identified by a unique number.

Supervisory Enumerator – A person who has responsibility for a survey field activity of assigned enumerators. They have authority to switch assignments, hire and evaluate enumerators, etc. in coordination with the Survey Statistician.

Survey Statistician – Statistician charged with responsibility of a survey - including enumerator training, office edit and processing of forms, and interpreting survey results.

–NOTES–

Chapter 3 – Form A Interview

General

There are several purposes of the Initial Interview (Form A). Acreage reported on the JAS for the tract will be verified and acres for harvest will be obtained. The Form A is used to identify the sample field for the Objective Yield Sample, determine acres to be excluded when locating the sample units, obtain permission to locate sample units, obtain intentions to use pesticide(s) with organophosphorus content, and for some states - determine if the sample field is irrigated.

Your State field office will provide you with the names and addresses of farm operators to interview, and photos which show the tracts operated by each of these farmers. Each tract is designated with a capital letter.

If all or a part of the original tract has had a change of operator, the Form A acreage still refers to the land area enumerated during the JAS. This allows us to update Soybean acreage on exactly the same area of land. You may need to interview the new operator(s) also and obtain acreage changes and permission to enter the sample field. If the operator of the sample field has changed since the JAS, update all of the necessary data on the face of the sample field kit envelope.

Multiple Samples in Same Tract

Occasionally, more than one sample is assigned to a single tract. Your kit envelope contains a complete set of forms for each sample. When two or more samples are selected in a tract, it is not necessary to complete all items on all initial interview forms during the interview.

To avoid asking duplicate questions during the initial interview, complete forms as follows:

Form A: Items 1 and 2 and the table - one for each tract.

Form A: Items 3 through 10 - one for each sample field.

Shortly after the interview is over, copy the tract data to Form A for additional samples as required. The tract data must be entered into CAPI for each sample.

When you start on a sample, be sure the correct State, POID and sample number are on each form. If not, copy this information from the sample field kit envelope. The date the interview started must be recorded at the top of each sample form.

All acreage recorded on the Form A must be recorded to the nearest tenth of an acre. For example:

<u>Reported</u>	<u>Enter</u>	
25	25.0	
25.25	25.3	(When rounding a 5, always round up)
25.12	25.1	
25.75	25.8	(When rounding a 5, always round up)
25.68	25.7	
None	—	None

All States:

You will use Form A for the initial interview of all Soybean growers selected. Item 1 pertains to reported Soybean acreage planted in the Area Tract. Question 2 pertains to the expected total Soybean acres harvested in the Area Tract. Items 3-8 pertain to the sample field.

The name and address of the selected operation you are to contact has been entered on the field kit envelope and Form A. It is very important that you verify this information. Any changes in name and address such as spelling, box or route number, ZIP code, etc., should be corrected on the field kit envelope and on the Form A.

If the operation is known by a farm, ranch or business name, this should also be noted. Listed below are examples of common corrections which should be made:

Mayes	Hayes , Arthur Rt. 1 Red Oakes, YS 46725	Cody, John Rt. 1, Box 608 Pinetown , YS 54670 Bear Poplar, YS 54690
	Sanders, Tom and Rob Bob No. 2 Cove Road Jamesville, YS 46652	Flying J. Ranch MGR Merle King Bob Gray Rt. 1 Box 608 Edenton, YS 46647
SOLD	Twin Ranch <i>Ridgeview Farms, Inc.</i> MGR Tony Mills Evergreen, YS 46104	Paul Gum R.R. 5 Elkin, YS 46520 Farm name - Hill High Ranch Farm

The operator may have changed the acreage of Soybean to be planted since intentions were reported during the June Area Survey. This will mean that Item 1 will differ from the number above it. If that happens, write notes so that the office staff understands the situation.

Example 1: The operator does not currently operate the entire acreage reported as Soybean in June. For example, part or all of the land was sold, leased, or rented to someone else.

Procedures:

1. Include the land that has changed hands in with the original operator's acreage.
2. Select the sample field(s) based on the total acres reported in June. If the sample field(s) is controlled by the original operator, obtain permission to enter the field. If the sample field is now operated by a different person, you will need to contact this new operator for permission.

3. Obtain the name, address and phone number of the new operator regardless of whether you need to make contact on this survey.

Example 2: The operator currently operates more land than reported in June.
The additional land, bought or leased, may have Soybean planted on it already.

Procedures:

1. Exclude this new acreage.
2. Select the sample field(s), and proceed with interview.

Example 3: The operator still operates the land reported in June and has not acquired additional acreage. The difference between the preprinted number and Item 1 is due to:

- 1) A respondent or enumerator error on the June Area survey
- 2) The actual planted acres changed from the intentions reported in June.

All States:

Procedures:

1. Record the date on the front page of the Form A.
2. Write notes if you determine the figure pictured below is in error.

Read the first sentence and reference the aerial photo to the operator to refresh his memory. Tract boundaries and tract codes are shown in blue on your aerial photo. Give the operator time to get oriented to the photo. Verify the preprinted acreages for the Soybean acreage in the tract.

Earlier this season, the number of soybean acres you planted or intended to plant for all purposes on all the land you operate in the tract was:.....

JUNE PLANTED
ACRES

DO NOT CHANGE

The total acres of soybeans planted or to be planted in the tract was reported on the June Area Survey and has been entered on the questionnaire in the Item 1 box.

Read the first sentence in Item 1 and show the aerial photo to the operator. Tract boundaries and tract codes are drawn in blue on the aerial photo while field boundaries and numbers are drawn in red. Give the operator time to get oriented on the photo. Point out each soybean field in the operator's tract on the photo and verify the acreages listed in Table A for each field.

NEBRASKA and KANSAS ONLY: The Soybean Objective Yield Survey for Nebraska and Kansas is divided into an irrigated and non-irrigated sample. Samples have been designated as irrigated if any part of the tract was listed as irrigated in the June Area Survey. If the sample is non-irrigated, only non-irrigated samples are listed in Table A. Any additions or corrections to Table A should be for non-irrigated fields. Similarly, for an irrigated sample only irrigated samples are listed in Table A and additions or corrections should be made for irrigated field.

1. Now I want to update this soybean acreage information. What is the current number of soybean acres you planted for all purposes on all the land you operate in the tract?.....

ACRES

112

2. What are the total acres of soybeans to be harvested for beans on all the land you operate in the tract? (If total equals zero, end interview.).....

ACRES

102

To Verify, what are the total tract acres of Soybean planted on the land you operate?

Now, I need to identify one (or more) of your soybean field(s) in the tract and get their acreage.

- Notes:
- For the Sample Field(s) in the tract, complete Table A for the soybean field(s) based off the cardinal directions indicated on the label (e.g., northern most field)

This statement will serve as an introduction to Table A. The reason for mapping the sample fields is to have a way of finding the sample field. Complete the table based on lowest sample number to largest sample number.

Table A				
SAMPLE NUMBER AND DIRECTION	TOTAL ACRES IN FIELD	ACRES in USE or CROPS OTHER THAN SOYBEANS to be HARVESTED for BEANS (For example: ditches, fence rows, waterways, roads, other crops, etc.)		LOCATION DESCRIPTION/ INTERSECTION OF FIELD (E.g., landmarks, features, street intersections)
		USE	ACRES	
1	2	3	4	5
	.		.	
	.		.	
	.		.	
	.		.	
	.		.	
	.		.	

Draw the Soybean field on a grid map.

The purpose of the grid is to help locate the Soybean sample. You will want to start by drawing the tract in the grid. Next, identify the Soybean field in the tract. Have the operator describe any roads, landmarks, and natural boundaries that will help you identify and keep track of the fields. Use the grid to sketch the roads, landmarks, etc.. Use of a county highway map in conjunction with the grid map may also help you as you and the operator identify the sampled field. Scale is not important; however, the relative location is critical.

If you have problems drawing the grid map, call your Survey Statistician for instructions.

Sample Number and Direction

The samples will be labeled with a direction. If a sample is marked with the direction “N” or North, have the operator identify the northern most field in the tract. If two fields are the same distance in the labeled direction, select the field furthest clockwise. So if there are two field that are the same distance North, select the field furthest to the East for the sample. Similarly, if the selected direction is West, select the field that is furthest North.

Select one Field per sample until there are no more fields, then go back to the first field and continue the same process until there are no more samples.

Now, I need to identify one (or more) of your soybean field(s) in the tract and get their acreage.

Notes:

- For the Sample Field(s) in the tract, complete Table A for the soybean field(s) based off the cardinal directions indicated on the label (e.g., northern most field)

Table A

SAMPLE NUMBER AND DIRECTION	TOTAL ACRES IN FIELD	ACRES in USE or CROPS OTHER THAN SOYBEANS to be HARVESTED for BEANS (For example: ditches, fence rows, waterways, roads, other crops, etc.)		LOCATION DESCRIPTION/ INTERSECTION OF FIELD (E.g., landmarks, features, street intersections)
		USE	ACRES	
1	2	3	4	5
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	

Total Acres in Field (Column 2): Record all acreage in the field. Be sure to match the sample number assigned on the grid to the sample number in Table A.

Acres in Other Uses: Columns 3 and 4 are used to indicate any areas in the field from which Soybean will not be harvested. If the field was completely tilled up and not replanted to Soybean, the acreage would be recorded in Columns 3 and 4. Note, if the field is planted to Soybean, it can still be the sample field, even if it is intended to be harvested for silage or used for something besides grain or seed.

LOCATION DESCRIPTION/INTERSECTION OF FIELD (Column 5): Now record landmarks, features, and street or road intersections to help identify where the field is located.

The direction variable will determine in which field the sample will be laid out. One sample is selected for one field. There will only be one sample per field listed in Table A, unless there are fewer fields in the operation than the number of samples selected for the operation. After selecting the sample field, you will complete the interview by asking Items 3-8 for each sample field using Form A-1.

The remaining questions on Form A refer specifically to this field assigned to the sample number identified on the front page of the Form A.

If the sample field is already harvested, do not select an alternate field.

If more than one field is sampled in the tract, ask Items 1 and 2 and complete the table only once and then copy these data to the other Form A's for the tract after the interview. However, you must complete Items 3 - 11 for each sample field.

All questions below apply to this SAMPLE.

3. For the Sample Field, subtract Column 4 from Column 2 for the total acres of soybeans harvested for beans. Report these acres here:.....

ACRES

103

Copy the sample field acres to be harvested for grain in the appropriate places in Item 3. Make sure the farmer understands which field is the sample field. It may be necessary to point out the field on the ground or describe its location in terms of other physical features. In all cases, the number of acres entered in Item 3 should agree with the acreage for that same field as entered in Table A.

4. What was the row width (planter setting) for the soybeans planted in this sample field?

INCHES

110

Find out from the operator the row width setting on the planter. Use this information to determine if the field is a narrow row field. If the operator reports the field was planted in twin rows record the measurement from center to center of each twin row as the planter row width setting.

5. On what date was planting completed in this soybean field?

MM DD

107

Record the actual date planting was completed in the sample field. If the sample field has been replanted, record the date the field was replanted. If the farmer does not remember exactly, use his or her best estimate. Use the MMDD format. (Example: April 29 = 0429)

Kansas and Nebraska Only for Item 7

7. Has this field been (or will it be) irrigated?

1

☐ Yes

3

☐ No

2

☐ Don't Know

CODE

114

Kansas and Nebraska need to determine if the operator has irrigated, or plans to irrigate, any portion of the sample field. For those states only, enter code "1" for yes if water has been or will be applied by irrigation to all or part of this field at least one time.

Arkansas Only for Item 8

8. What Maturity Group are the soybeans in the selected field?.....

2=Group II	6=Group VI
3=Group III	7=Group VII
4=Group IV	8=Don't Know
5=Group V	

CODE

108

Item 8 is to be asked in **ARKANSAS ONLY**. Typically, maturity groups are indicated using roman numerals. Record the numeric code of the maturity group of the soybeans planted in the selected field. If the farmer is unable to tell you the exact maturity group of the soybeans in the selected field, probe for some information. Notes as to whether the field is an "early maturing" or "full season" group are helpful.

9. With your permission I will go out to the field and mark off two small plots to be used in making plant and fruit counts. I will return to the plots each month until harvest to make counts and measurements, and harvest and weigh a few beans. Would that be all right?

☐ Yes - Continue. (Inform respondent what day/approximate time you intend mark off two small plots to be used in making plant and fruit counts.)

☐ No - Conclude interview then go to Item 11

The purpose of this statement is to obtain and record the farmer's willingness to let you make the pre-harvest objective yield counts and the post-harvest gleanings. Use a conversational tone in explaining your monthly visits to the field and answer any questions which the farmer may have about the field work.

Do not enter sample fields without permission. Check the appropriate YES or NO response.

a. The United Soybean Board (USB) has requested permission to use the soybean samples for compositional traits and disease analysis. **Do we have your permission** to provide your soybean sample to USB?

1 ☐ Yes

3 ☐ No

CODE

131

This question is being asked to verify that the respondent knows what will happen to the samples that are removed from their field(s). Enter the correct code in the answer cell.

10. Have you or will you apply pesticides with organophosphorus content to the sample field?

☐ Yes

☐ No

☐ Don't Know

If yes, enter latest application date _____ and name of pesticide _____.

Record the date of the latest application or the expected application date and the name of the organophosphorus pesticide that will be applied to the sample field. If an organophosphorus pesticide has or will be applied, make a note on the kit envelope and on the Form B.

NOTE: If this is a gleaning sample, tell the operator,
“After harvest, I will also lay out two small plots to determine harvest loss.”

For Post-harvest samples tell him you would like to glean the sample fields to determine harvest loss. The Form E will be completed if permission is granted.

<p>PLEASE CHECK THE FOLLOWING:</p> <ul style="list-style-type: none">• Review the form for completeness• Sign name• On the kit envelope, record operator's Telephone number. Expected harvest date. Pesticide intentions (Item 10).
--

Enumerator Number	190
Supervisor Number	191
Evaluation	193
R. Unit	921
STATUS CODE	180

12. Enumerator Name: _____

Enter the respondent's name and thank the respondent for cooperating.

It is important that you maintain contact with the operator so you will know when the sample field will be harvested. This knowledge on harvest will enable you to obtain the final pre-harvest observations as near harvest as possible, and to obtain post-harvest gleanings and interview within three days after harvest.

Survey Results: To receive the complete results of this survey on the release date, go to:
www.nass.usda.gov/results

To have a brief summary emailed to you, please enter your email address:
1095

Answer all questions the farm operator has about the role of the National Agricultural Statistics Service. If the operator is interested in obtaining Soybean production estimates, enter the e-mail address in the space provided. The State office will see that the information is sent. The operator can access the full report at www.nass.usda.gov/results.

You should leave the farm operator with all questions answered and in a cooperative mood. Remember, the operator may be contacted again for another survey and your actions will greatly influence a willingness to cooperate.

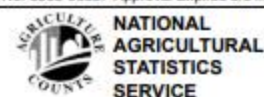
Review the form in detail to be sure all items are complete and sign your name. Enter both your number and your supervisor's number in the boxes provided.

Project Code 102

OMB No. 0535-0088: Approval Expires 3/31/2023



FORM A
SOYBEAN YIELD SURVEY
Initial Interview 2021



Date: _____

Earlier this season you gave a representative from our office information about the soybean acreage on your farming operation. We are now collecting information to help determine soybean production in (*Your State*) and the United states.

The information you provide will be used for statistical purposes only. Your response will be kept confidential and any person who willfully discloses ANY identifiable information about you or your operation is subject to a jail term, a fine, or both. This survey is conducted in accordance with the Confidential Information Protection and Statistical Efficiency Act of 2018, Title III of Pub. L. No. 115-435, codified in 44 U.S.C. Ch. 35 and other applicable Federal laws. For more information on how we protect your information please visit: <https://www.nass.usda.gov/confidentiality>. Response is voluntary.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB number is 0535-0088. The time required to complete this information collection is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Earlier this season, the number of soybean acres you planted or intended to plant for all purposes on all the land you operate in the tract was:.....

JUNE PLANTED
ACRES

DO NOT CHANGE

1. Now I want to update this soybean acreage information. What is the current number of soybean acres you planted for all purposes on all the land you operate in the tract?..... ACRES
2. What are the total acres of soybeans to be harvested for beans on all the land you operate in the tract? (If total equals zero, end interview.)..... ACRES

112	ACRES
102	ACRES

Now, I need to identify one (or more) of your soybean field(s) in the tract and get their acreage.

Notes:

- For the Sample Field(s) in the tract, complete Table A for the soybean field(s) based off the cardinal directions indicated on the label (e.g., northern most field)

Table A

SAMPLE NUMBER AND DIRECTION	TOTAL ACRES IN FIELD	ACRES in USE or CROPS OTHER THAN SOYBEANS to be HARVESTED for BEANS (For example: ditches, fence rows, waterways, roads, other crops, etc.)		LOCATION DESCRIPTION/ INTERSECTION OF FIELD (E.g., landmarks, features, street intersections)
		USE	ACRES	
1	2	3	4	5
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	
	• _____		• _____	

3

FORM A: SOYBEANS - Continued

All questions below apply to this SAMPLE.

3. For the Sample Field, subtract Column 4 from Column 2 for the total acres of soybeans harvested for beans. Report these acres here:..... **ACRES** 103
4. What was the row width (planter setting) for the soybeans in the sample field?..... **INCHES** 110
5. On what date was planting completed in this soybean field?..... **MM DD** 107
6. (Use Respondent Variety Catalog)
What variety are the soybeans in the selected field? _____ **Enter Code** 130

Kansas and Nebraska Only for Item 7

7. Has this field been (or will it be) irrigated? 1 ☐ Yes 3 ☐ No 2 ☐ Don't Know **CODE** 114

Arkansas Only for Item 8

8. What Maturity Group are the soybeans in the selected field?..... 2=Group II
3=Group III
4=Group IV
5=Group V
6=Group VI
7=Group VII
8=Don't Know **CODE** 108

9. With your permission I will go out to the field and mark off two small plots to be used in making plant and fruit counts. I will return to the plots each month until harvest to make counts and measurements, and harvest and weigh a few beans. Would that be all right?

☐ Yes - Continue. (Inform respondent what day/approximate time you intend mark off two small plots to be used in making plant and fruit counts.)

☐ No - Conclude interview then go to Item 11

- a. The United Soybean Board (USB) has requested permission to use the soybean samples for compositional traits and disease analysis. **Do we have your permission** to provide your soybean sample to USB?

1 ☐ Yes 3 ☐ No **CODE** 131

10. Have you or will you apply pesticides with organophosphorus content to the sample field?

☐ Yes ☐ No ☐ Don't Know

If yes, enter latest application date _____ and name of pesticide _____.

NOTE: If this is a gleaning sample, tell the operator,
"After harvest, I will also lay out two small plots to determine harvest loss."

11. Respondent Name: _____

PLEASE CHECK THE FOLLOWING:

- Review the form for completeness
- Sign name
- On the kit envelope, record operator's
Telephone number.
Expected harvest date.
Pesticide intentions (Item 10).

12. Enumerator Name: _____

Enumerator Number	190
Supervisor Number	191
Evaluation	193
R. Unit	921
STATUS CODE	180

NOTES:

Survey Results: To receive the complete results of this survey on the release date, go to:
www.nass.usda.gov/results

To have a brief summary emailed to you, please enter your email address:
1095

Operation Email: (if different from above)

Operation Phone:

9937	9936	check if cell phone
	() -	<input type="checkbox"/>

Respondent Name:

Respondent Phone (if different from above)

9912	9911	check if cell phone	9910	MM	DD	YY
	() -	<input type="checkbox"/>	Date:			

This completes the survey. Thank you for your help.

Chapter 4 – Unit Location

General

Two units are laid out for each sample at the time of the initial interview. These units will be used each month during the growing season to make plant and fruit counts. The units are located and laid out according to specific procedures to assure randomness. First locate the selected sample field using the grid map and County and State maps.

For soybeans samples, immediately after completing the Form A-1 interview and before going to the sample field, determine the paces to be used for locating the units. To do this, find the appropriate field size on the labels on the back of your field kit envelope. The acres of soybeans for harvest in Item 3, Form A-1 determines which column is to be used. Circle the unit location numbers under the appropriate field size on the labels. The rows line corresponds to the rows along the edge of the field and the paces line corresponds to the paces into the field. Copy these unit location numbers to all Form B's and – if applicable -- the Form E for the sample.

For subsequent sample locations, use the next set of unused labels. Circle the numbers as they are used. There is one set of labels for every sample selected for an operation.

Location, Layout and Markings

The principle of unit location is to allow the units to fall anywhere within the field boundaries (excluding acreage deducted on Form A-1) with equal probability. See examples in Special Problems (Chapter 5). The point of entry into the field or starting corner will be the first corner of the field which is reached when approaching the field and which can qualify as a starting corner. If the field has been selected for more than one sample, the second (or third) closest corner to the starting corner will be used as the starting corner for the second (or third) sample number. If and only if the field has no definite corners, enter the field from the point which is most accessible by car. If the field has been selected for more than one sample and the field has no definite corners, the next most accessible point will be used as the starting corner for the second sample, and so on.

Locating Unit 1

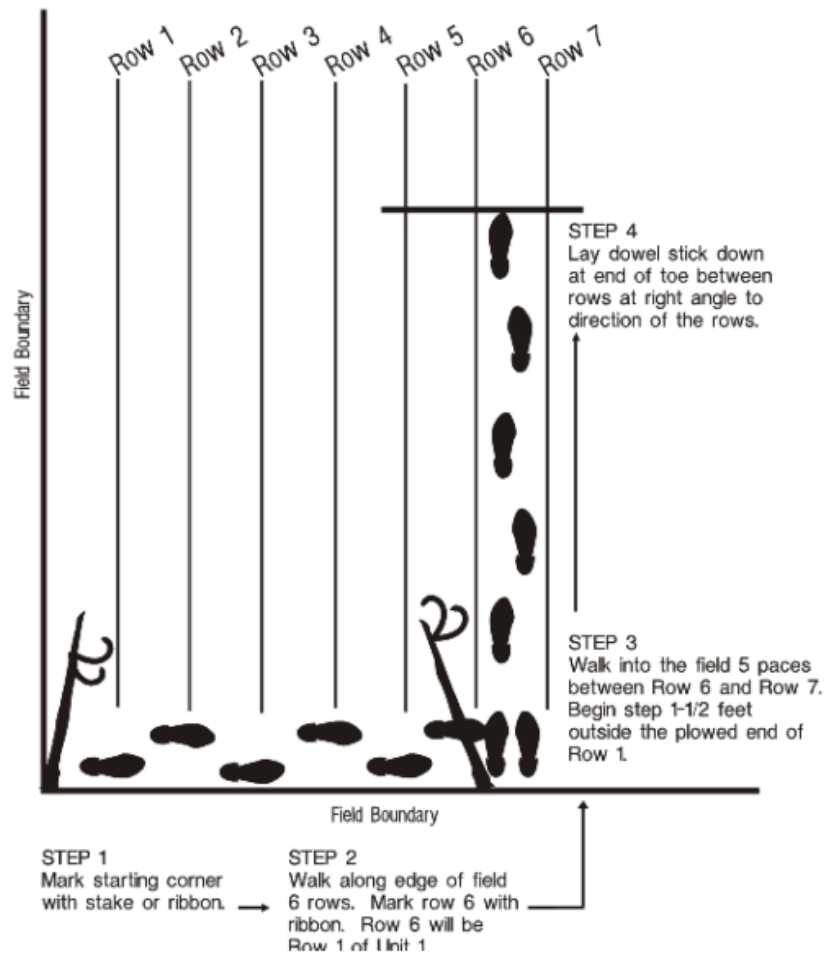
The following steps outline procedures for locating and laying out sample units.

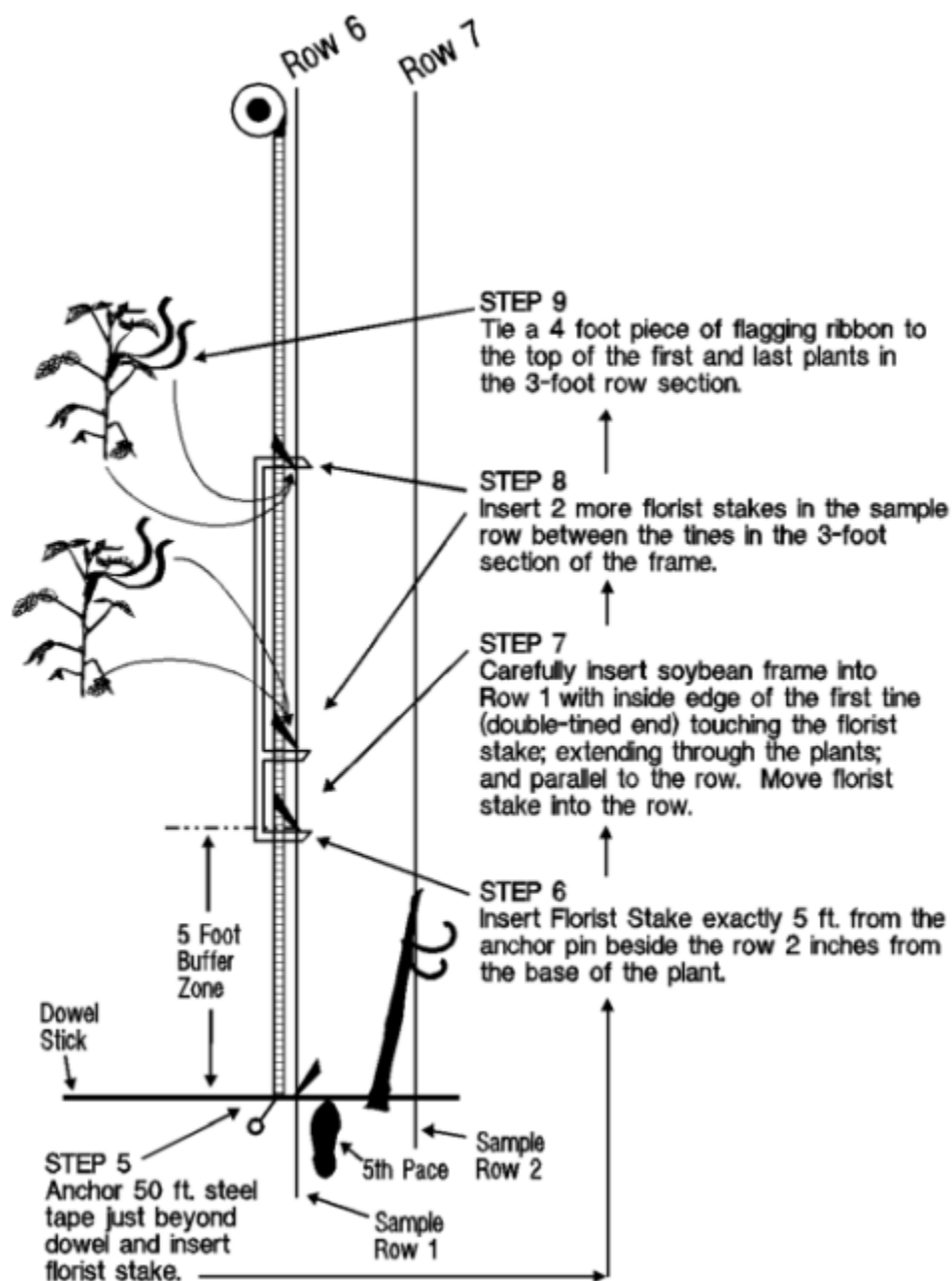
- Step 1:** Mark the starting corner or point of entry so it will be clearly visible on later visits. Tie a piece of red plastic flagging ribbon to a fence or some nearby object or drive a large stake in the ground and attach the ribbon. Make a note of the location and type of marking used on the kit envelope field sketch.
- Step 2:** Walk along the end of the crop rows until you have counted the number of crop rows indicated for Unit 1. This will be Row 1 of Unit 1. Tie a piece of flagging ribbon on the first plant in Row 1. This will help you find the same row on subsequent visits to the sample field. The next row in the direction of travel will be Row 2.

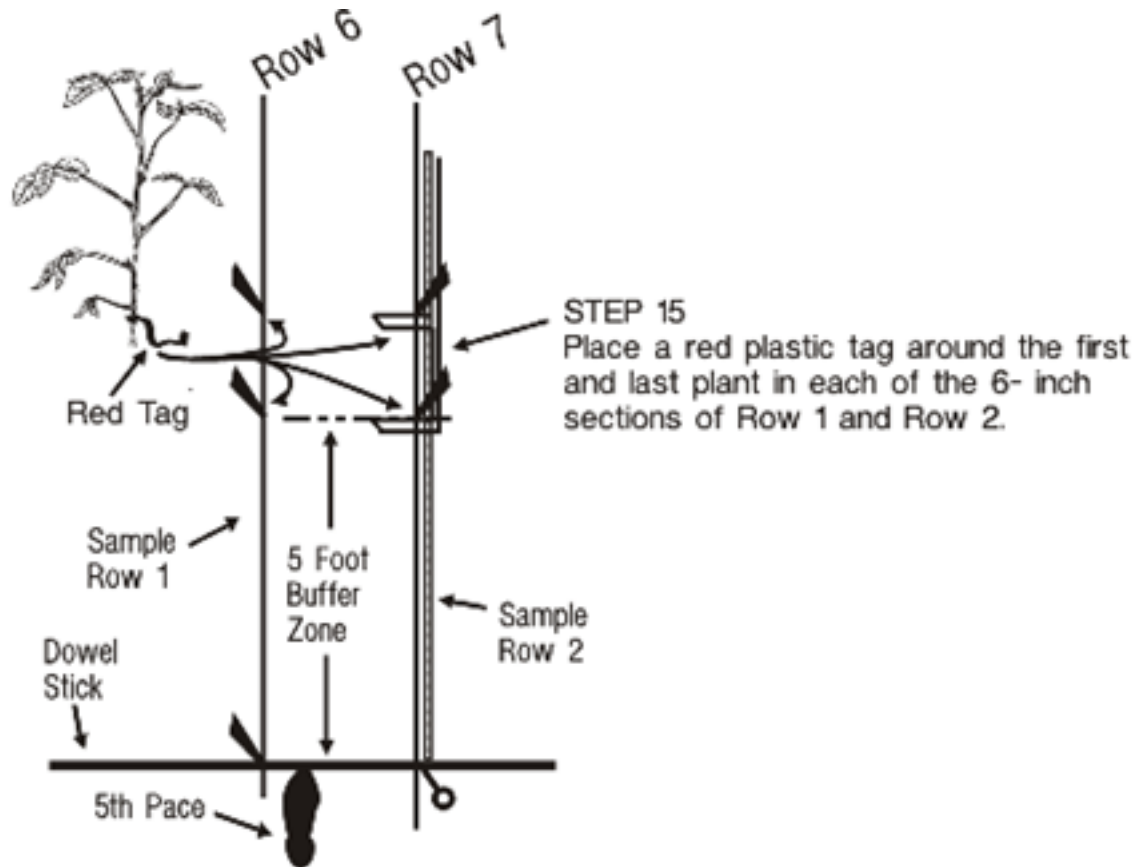
If the sample field has been planted in narrow rows (four row space measurement less than or equal to 5 feet), substitute paces for rows when counting along the edge of the field.

- Step 3:** Walk the required number of paces into the field between Row 1 and Row 2. Start your first pace about one and one half feet outside the plowed end of Row 1. This starting point applies even if plants are not growing to the plowed end of Row 1.
- If you cross any of the area deducted as "Other Uses" on the Form A, Table A, Column 5 while you are counting your rows or paces into the field, stop counting at the start of each such area and resume counting at the other side. However, any blank or unplanted areas in the field that were not deducted on Form A should be included in the row and pace count. (See Special Problems later in this chapter).
- Step 4:** After you have taken the last of the required paces, lay the dowel stick down so that it touches the toe of your shoe, across Row 1, and Row 2, and at right angles to the direction of the rows. Lay out Unit 1 in the direction of your travel when you counted your last pace.
- Step 5:** Anchor the zero end of the 50 ft. steel tape just beyond the dowel stick and directly alongside the plants in Row 1. The zero end of the tape must be anchored firmly and close to the ground so it will not move when the measurements are being made. Mark the sample number on a florist stake and insert it at the anchor point.
- A 4 to 5-foot bamboo stick (or something similar) with flagging ribbon should be used to mark the general location of each unit.
- Step 6:** In Row 1 place a starting florist stake, marked "U1-R1", exactly 5 feet from the anchor point making sure that the measuring tape is pulled tight and is flat on the ground. The florist stake should be beside the row about 2 inches from the base of the plants.
- Step 7:** Working from outside the unit, carefully insert the soybean frame into Row 1 with the inside edge of the first tine of the double-tined end of the frame touching the florist stake just placed beside Row 1. The 3 tines should extend through the plants with the back of the frame parallel to the row. Be sure that the inside edge of the tine is touching the florist stake.
- If the point of any tine strikes a soybean plant, slide the soybean frame toward the starting point just far enough for the point of the tine to clear the plant.
- Step 8:** Keeping the frame stationary, move the starting stake from beside the row and insert it into the row. Then insert 2 more florist stakes in the row against the long side of the other 2 tines so that the stakes will separate the plants in the unit from those outside.
- Step 9:** Tie 4-foot pieces of flagging ribbon near the tops of the first and last plants of the 3-foot row section being careful not to damage any blooms or pods.
- Step 10:** In Row 2, anchor the 50-foot tape just beyond the dowel stick and alongside the plants in Row 2. DO NOT place a stake at this anchor point.

- Step 11:** In Row 2 place a starting florist stake, marked "U1-R2", exactly 5 feet from the anchor point making sure that the measuring tape is pulled tight and is flat on the ground. The florist stake should be beside the row about 2 inches from the base of the plants.
- Step 12:** Working from outside the unit, carefully insert the soybean frame into Row 2 with the inside edge of the first tine of the double-tined end of the frame touching the florist stake just placed beside Row 2. The 3 tines should extend through the plants with the back of the frame parallel to the row. Be sure that the inside edge of the tine is touching the florist stake.
- If the point of any tine strikes a soybean plant, slide the soybean frame toward the starting point just far enough for the point of the tine to clear the plant.
- Step 13:** Keeping the frame stationary, move the starting stake from beside the row and insert it into the row. Then insert 2 more florist stakes in the row against the long side of the other 2 tines so that the stakes will separate the plants in the unit from those outside.
- Step 14:** Tie 4-foot pieces of flagging ribbon near the tops of the first and last plants of the 3-foot row section being careful not to damage any blooms or pods.
- Step 15:** Place a red plastic tag around the base of the first and last plant in each of the 6-inch sections of Row 1 and Row 2.
- Example:** Unit 1 located 6 rows along the edge of the field and 5 paces into the field:







Locating Unit 2

After completing the Form B observations in Unit 1, go back to the edge of the field. Start from the row for Unit 1 and walk 30 more rows in the same direction that you were traveling when you located Unit 1. Then turn and walk into the field for the number of paces from Unit 1 PLUS 30 more paces. At that spot, locate, lay out and mark Unit 2. For example, if Unit 1 was 50 paces into the field, Unit 2 should be 80 paces into the field (50+30). Remember to stop counting paces when walking through a deducted area (refer to Table A, Form A-1)

The same steps apply in laying out Unit 2 as were used in laying out Unit 1 except florist stakes will be marked U2-R1 and U2-R2.

Preparing Sketch of Sample Units

When the work for Unit 2 is completed, a field sketch as large and detailed as possible should be prepared on the sample field kit envelope so that the starting corner and unit locations can be found on later visits. For samples where the bounce-back technique has been used, indicate the direction of the units, so you won't walk through them on subsequent visits.

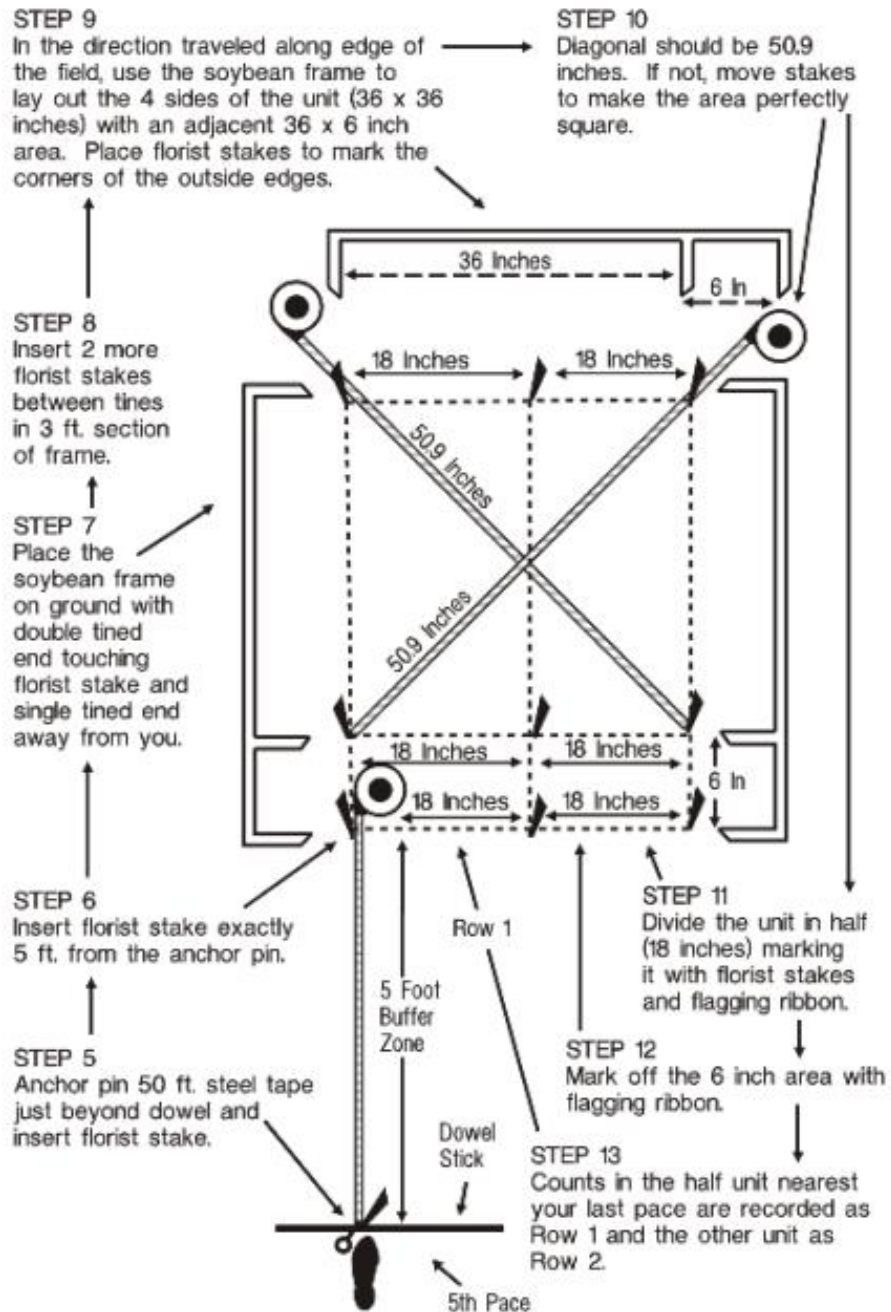
Broadcast Procedures

When no rows can be distinguished, substitute paces for rows when locating the units. This procedure should be used for both pre-harvest and post-harvest visits. The soybean frame will be used to mark off a 36" x 36" square unit and a 36" x 6" adjacent count unit. Follow the procedures for Steps 1, 2 and 3 in this chapter, except substitute paces for rows.

- Step 4:** Insert a florist stake marked "Sample _____" so that it touches the toe of your shoe at the dowel stick after you have taken the last of the required paces.
- Step 5:** Anchor the zero end of the 50-foot steel tape immediately beyond the florist stake.
- Step 6:** Insert a starting florist stake labeled with the unit number exactly 5 feet beyond the anchor stake.
- Step 7:** Place the soybean frame on the ground with the double tined end touching the florist stake and the single tined end away from you.
- Step 8:** Insert 2 more florist stakes against the long side of the other 2 tines.
- Step 9:** In the direction traveled along the edge of the field use the soybean frame to lay out the 4 sides of the unit -- a 36 inch by 36 inch area with an adjacent 36 inch by 6 inch area. Carefully place each stake so the outside edges mark the corners.
- Step 10:** As a check, in the 36-inch square area make sure the diagonal measurements are equal. Both diagonal measurements should be 50.9 inches. If not, it will be necessary to move 1 or more stakes to make the area perfectly square.
- Step 11:** Divide the unit in half (18 inches), marking it off with florist stakes and flagging ribbon. See the diagram on the next page.
- Step 12:** Mark off the 6" area with flagging ribbon.
- Step 13:** Counts in the half unit nearest your last pace should be recorded as Row 1 and the other half as Row 2.

After you have completed all counts in Unit 1, locate Unit 2.

Laying Out Soybean Sample in Broadcast Soybeans



Tape Measure Conversion for Broadcast Soybeans

18 inches	=	1.5 ft
50.9 inches	=	4.3 ft
6 inches	=	0.5 ft

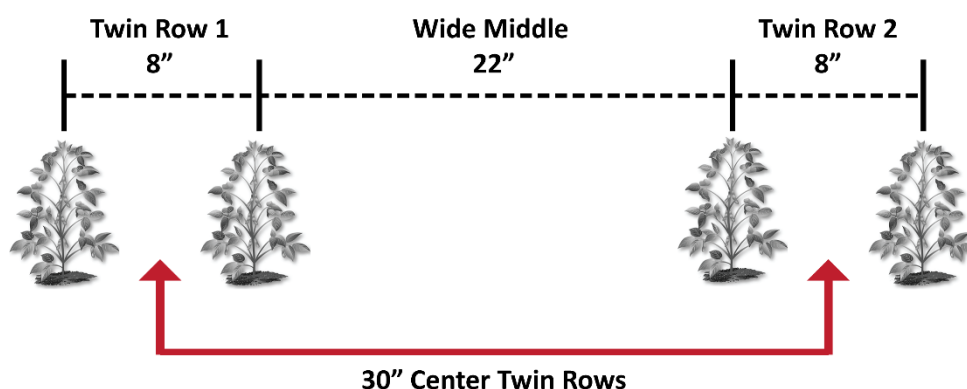
Twin Row Procedures

In a twin row planting configuration, soybeans are planted in paired rows, usually 7 or 8 inches apart, on 30-inch centers (*narrow/wide/narrow arrangement*). In cases where flood irrigation practices are in use they will be planted in a formed seedbed, elevated above the wider irrigation furrows. The twin row configuration presents challenges for counting rows, determining row space measurements, and recording plant & fruit counts for the purposes of the Objective Yield Surveys.

Twin Rows Sample Unit Location

Each twin row sample unit is comprised of 2 pairs of twin rows. When counting rows along the field's edge to locate the first row of a sample unit, count the pairs of twin rows as individual sample unit rows.

When counting twin rows planted on formed beds, be sure to count only the pairs of twin planted rows and not count the formed beds. This is the best practice to prevent miscounting in cases where more than one pair of twin rows are planted on the same formed bed or when bed widths are non-uniform.



Twin Row Space Measurements

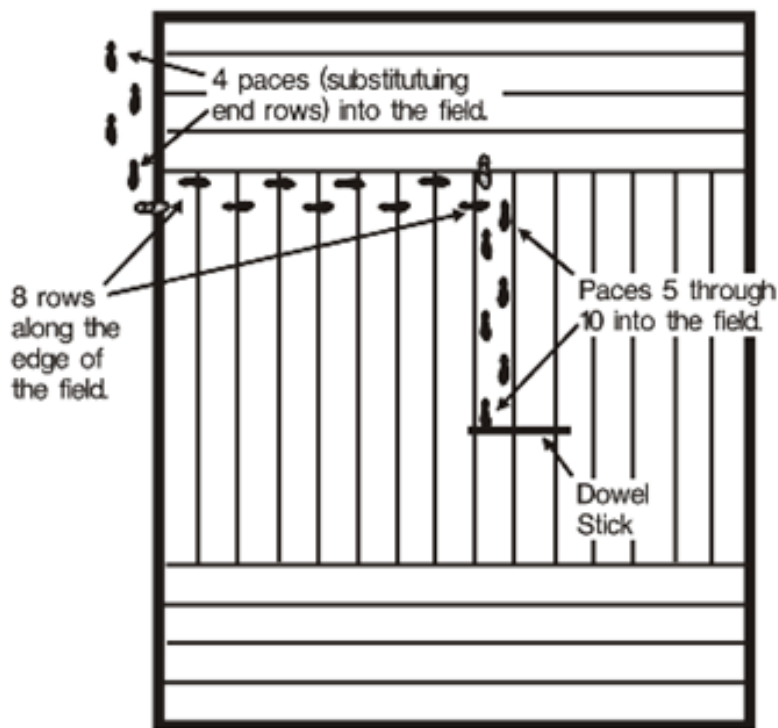
In the direction of travel, measure from the center of the first pair of twin rows in the selected row to the center of the second pair of twin rows (*across 1 wide middle rows*). Continue the measurement from the center of the first pair of twin rows further on to the center of the fifth pair of twin rows (*across 4 wide middle rows*).

Laying Out Twin Row Units

Twin row units will be laid out using the same practices used when measuring fields planted in a uniform, single row configuration. The only difference between the single and twin row units is the twin row unit uses the plants in the two twin rows for each unit row (4 individual rows of plants per sample unit = 8 individual rows per sample). Mark and flag all twin row sample units with the inclusion of the twin row.

Special Problems in Laying Out Units

Locating Units in Fields with End Rows

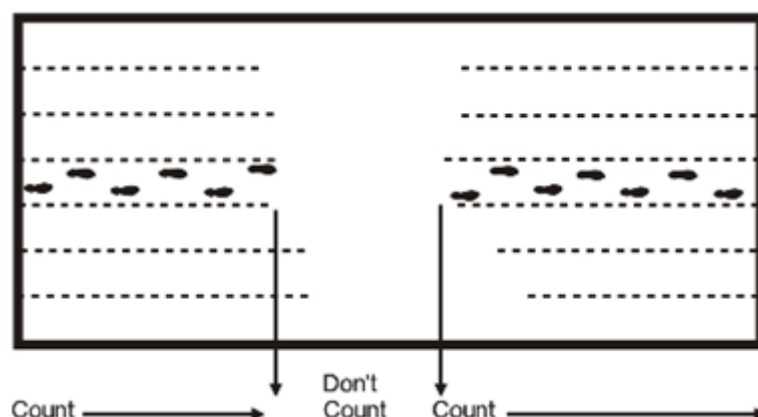


If a field has end rows, you should make a note of how many there are, but do not include them in the count of rows. To begin counting "rows along the edge of the field", walk along the ends of the regular rows inside the field, counting them to find Row 1 of Unit 1.

After finding Row 1 of the unit, start your pacing into the field from the end of Row 1, but count the end rows as paces. For example, if there are 4 end rows, you will start your pace count with 5 and continue into the field the required number of paces.

If the pace count is something less than the number of end rows, the unit will be laid out in the end rows. A unit will be laid out in end rows when the number of paces is less than the number of end rows. When the unit falls in end rows, always lay out the unit away from the starting corner. If in this example the number of paces is exactly 4, then Row 1 of the unit would be end row 4 and Row 2 of the unit would be end row 3.

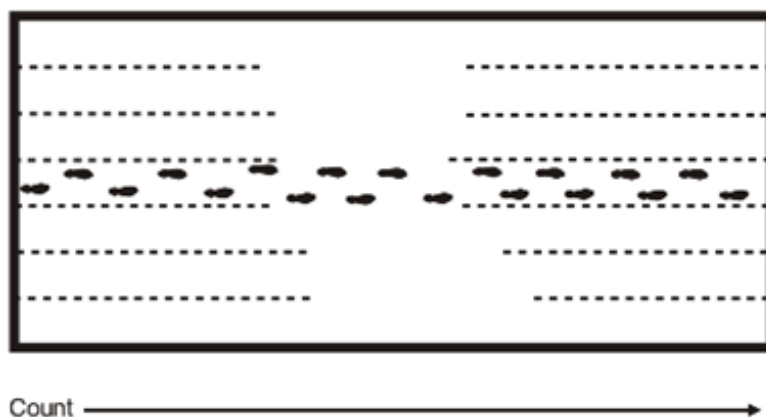
Blank Area Deducted on Form A



Sample units will never be located in "excluded" areas or in any other areas reported in "Other Uses" in Table A of Form A.

If, when counting paces into the field, you cross an area which was deducted from the acreage to be harvested (not planted, abandoned, to be harvested for some other use, planted to another crop, etc.) during the interview, you will stop your count (paces) at the start of such area and resume the count on the other side of the area.

Blank Area or Other Crop Not Deducted on Form A



If you should cross a blank area or other crop which was not deducted from the acreage to be harvested during the interview, you should continue to count paces through this area. Usually, such areas are small drowned-out spots or skips due to poor seed germination and plant survival.

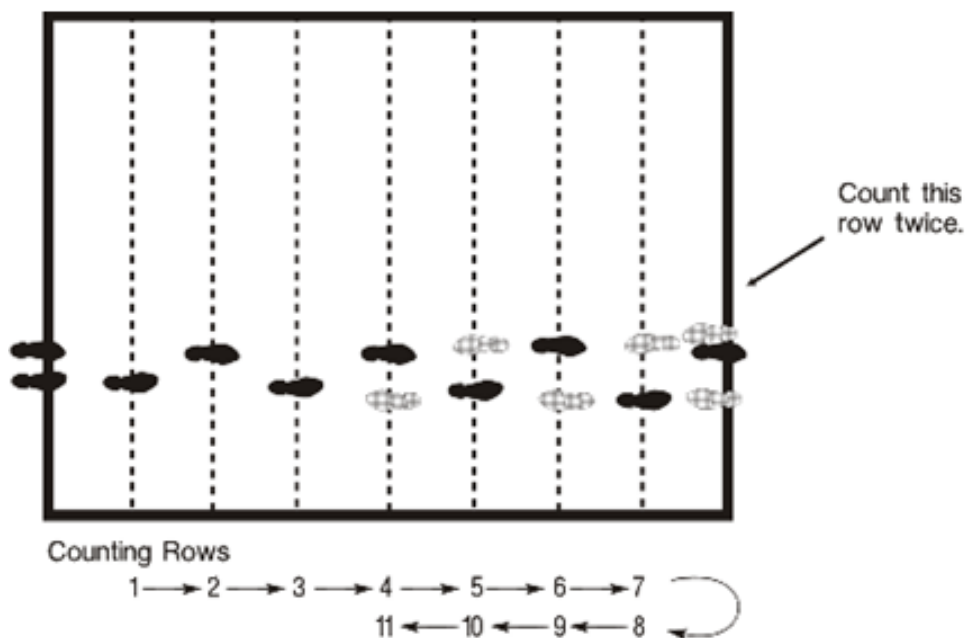
If only one unit falls in a blank area, continue to make monthly counts on the other unit. Enter zeros in the appropriate box for the unit located in the blank area.

In case both units fall in a blank area (no plants standing in either of the sample rows) which was NOT deducted from the net acreage standing for beans (Table A) the unit will be laid out. Zeros should be entered, where

appropriate, for the units on all the Form B's which should be returned to the State office. Note on all Form B's and also on the outside of the kit envelope for future reference that the units fell in a blank area. Also complete two separate ID tags (one for each unit) and forward these to the National lab in an envelope marked "No pods in Units".

If both sample units fall in blank spots with zero plant counts in both the 6-inch and 3-foot sections, no further pre-harvest visits will be made to the sample. However, a post-harvest gleaning visit for every fourth sample (using Form E) still must be obtained.

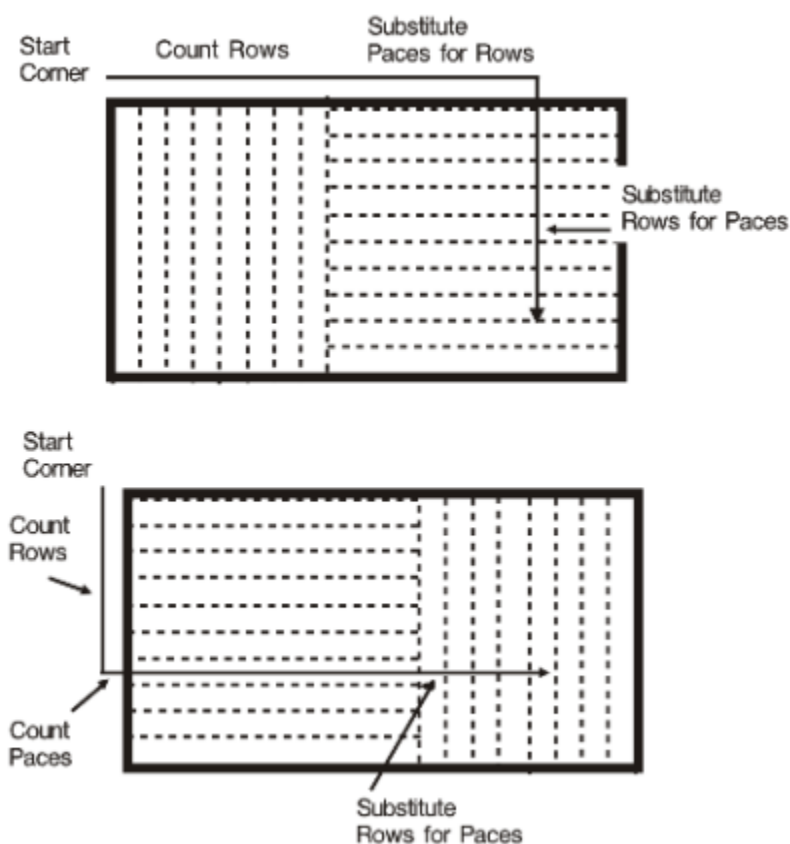
Bounce Back Technique



In counting rows, if you reach the opposite edge of the field and still have not counted the desired number of rows, turn around and walk back in the direction from which you came until the required number is counted. The last row is counted twice—once as you go out of the field and again as you start back into the field. Always take the next row in direction of travel for Row 2. In counting rows, if Row 1 of the unit falls on the last row of the field, then Row 2 becomes the next row in the direction of travel after bounce back.

In counting paces, if you reach the end of the field and still have not counted the desired number of paces, turn around and walk back in the direction from which you came until the required number of paces is counted off. Lay down the dowel stick and lay out the unit in the same direction that you were traveling when you counted the last pace.

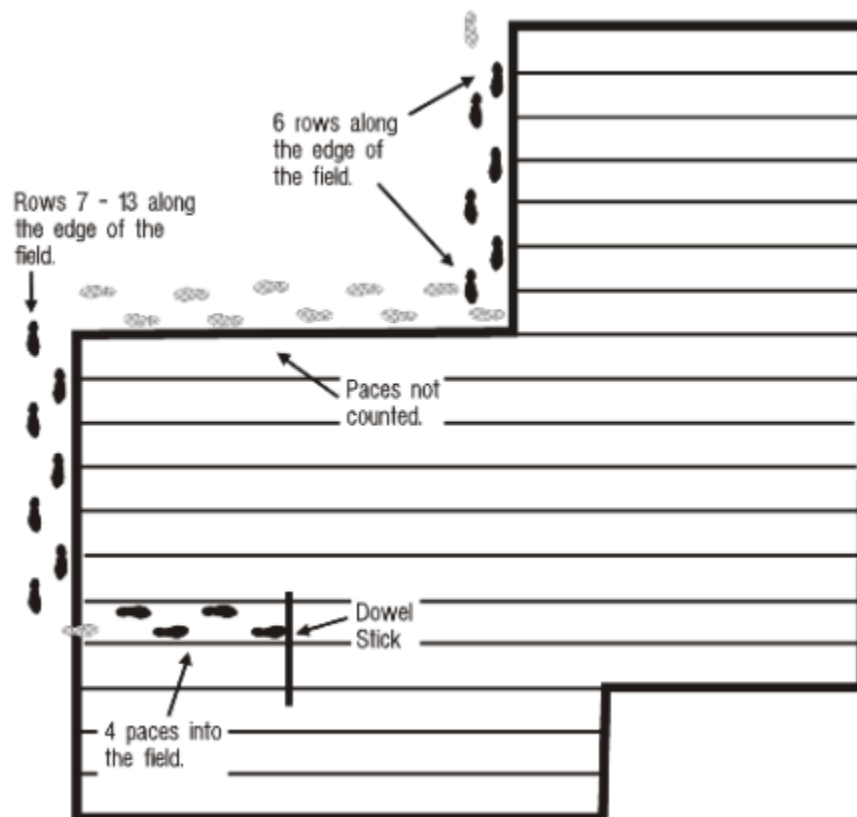
Rows Change Directions



In counting rows, when the direction of the rows change at right angles, or when there is no definite direction to the rows, or when it is otherwise impossible to count rows, continue in the same direction along the edge of the field and substitute an equal number of paces for rows. Make a note of such changes on the form and on the sample field kit envelope opposite the sample number so that this fact will be recorded for later visits.

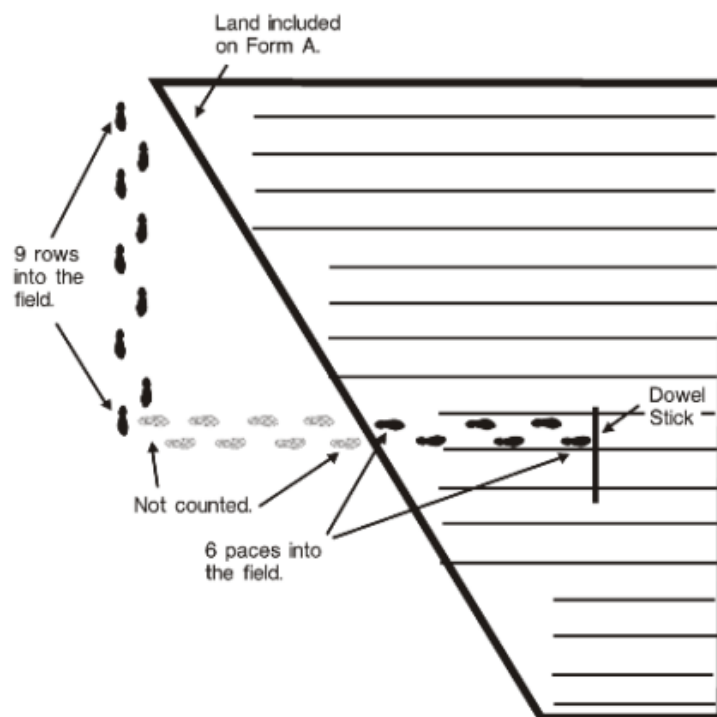
In counting paces, when the direction of the rows change at right angles, substitute an equal number of rows for paces. When laying out units, and rows change direction, always lay out the unit away from the starting corner.

Locating Units In Odd Shaped Fields



When locating units in odd shaped fields the same rules apply that we have discussed previously. In the illustration above the enumerator ceases counting when walking to the beginning of row 7, then resumes the row count until Unit 1, Row 1 is reached and the pace count begins. Some of the main things to remember are: (1) starting corner, (2) direction of travel, and (3) deducted and non-deducted areas from Form A.

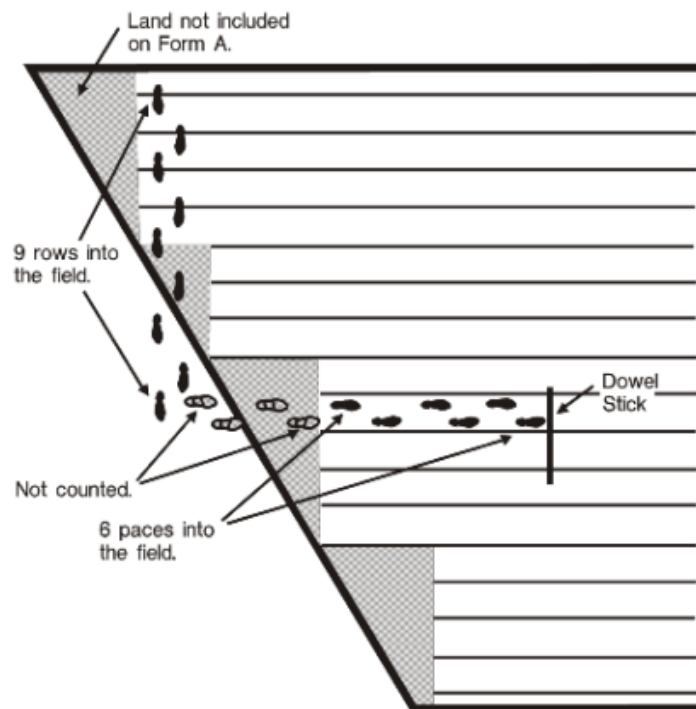
Field with Blocking and Blank Area Not Deducted



With today's larger equipment there tends to be a blocking effect along a slanting field boundary. In the case illustrated above the distance from the actual start of plants in row 9 might be 50 feet or so from the starting point of row 8.

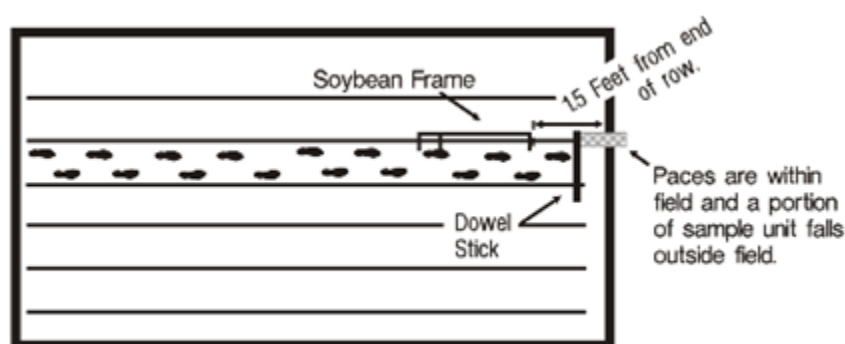
If row 8 is the selected Row 1 of the unit and the blank area was not deducted from the acreage for beans on the Form A the unit would be laid out 3 paces into the field from the beginning of row 8 and the unit Row 2 would fall in the area with no plants present in row 9.

Field with Blocking and Blank Area Deducted



If the blank area from row 9 to 13 was deducted from the acreage for harvest on the Form A, the unit would be laid out 6 paces into the field from the beginning of row 9. Field row 9 would still be unit Row 1 and field row 10 would be unit Row 2.

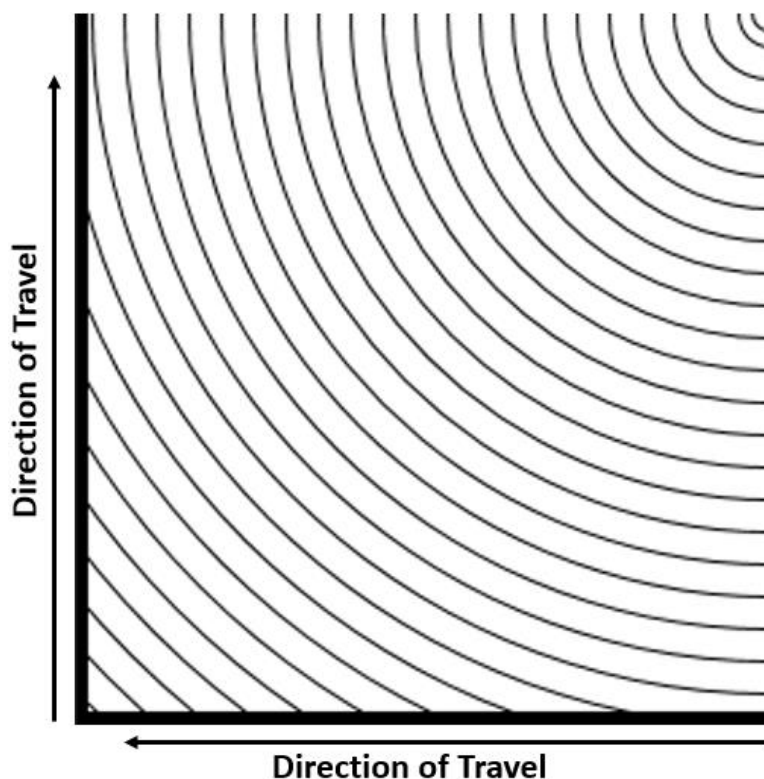
Units Fall Beyond End of Field



If a unit location falls partly within an area which was deducted from the acreage for harvest during the interview (grass waterway, etc.) move the unit back until it is located wholly on acreage planted to soybeans with the end point of the unit one and one-half feet from the deducted area. This also applies when part of the unit falls beyond the edge of the field.

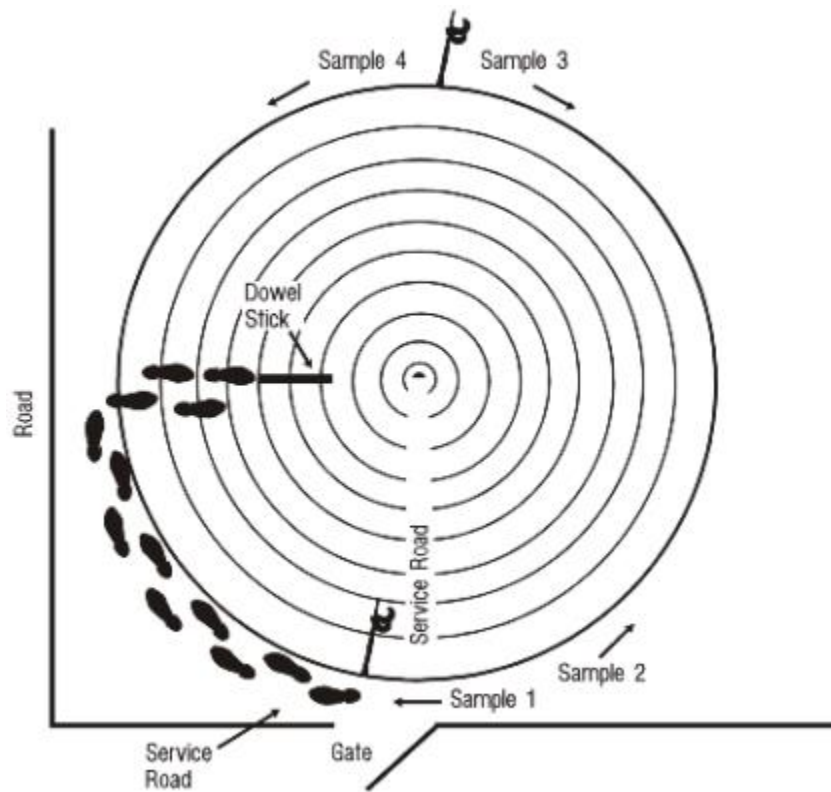
If the unit location falls partly in end rows after you have taken your last pace, pick up the dowel stick and back up until you are 1.5 feet from the center of the plants in the first end row you come to. (Do not lay out a unit across rows).

Sample Falls in Field with Curved Corners



Handle the same as you would a circular field. Count down the side of the field while straight and when the corner curves, continue in a straight line to a point equal to the edge of the field. Turn towards the field at a 90 degree angle and count in that direction. If the corner of the field outside the curve was included as crop on the Form A, include it in your counts. If the area was excluded on the Form A, exclude it in your counts.

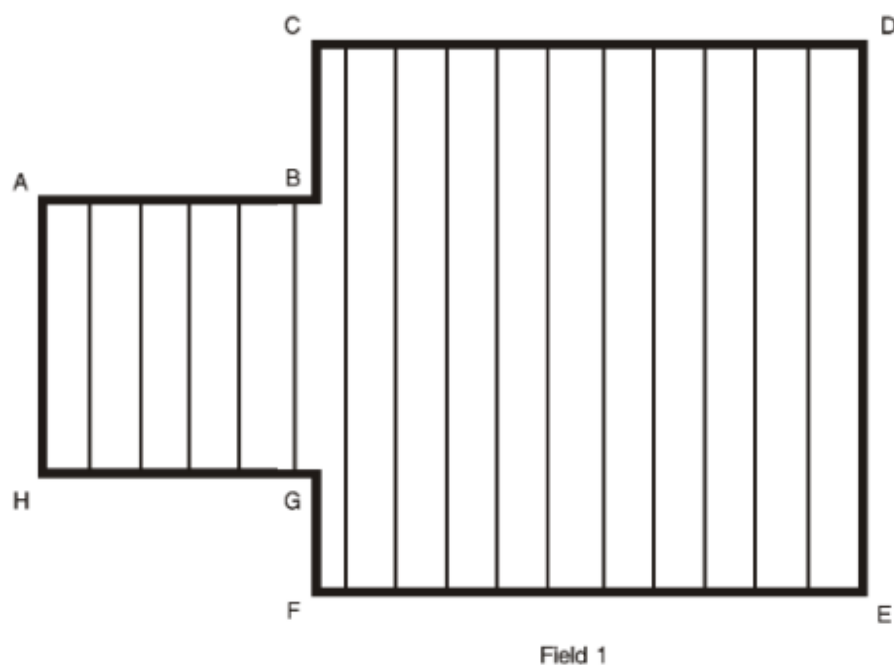
Spiral Planted Fields



The starting point will be that point first reached when arriving at the field. To locate sample units in spiral fields, use paces as shown on the Form B when walking clockwise along the edge of the field. Then use the number of rows shown on the Form B to count rows into the field. Be sure your diagram on the sample kit envelope is complete and is easy to follow in locating the sample units in the circular field.

A second sample in a spiral field would be located in a counter-clockwise direction from the original starting point. If a third sample was selected, go to the opposite side of the field from the original starting point and locate the third sample in a clockwise direction, and if a 4th sample, locate in a counter-clockwise direction.

Odd Shaped Fields – Starting Corner



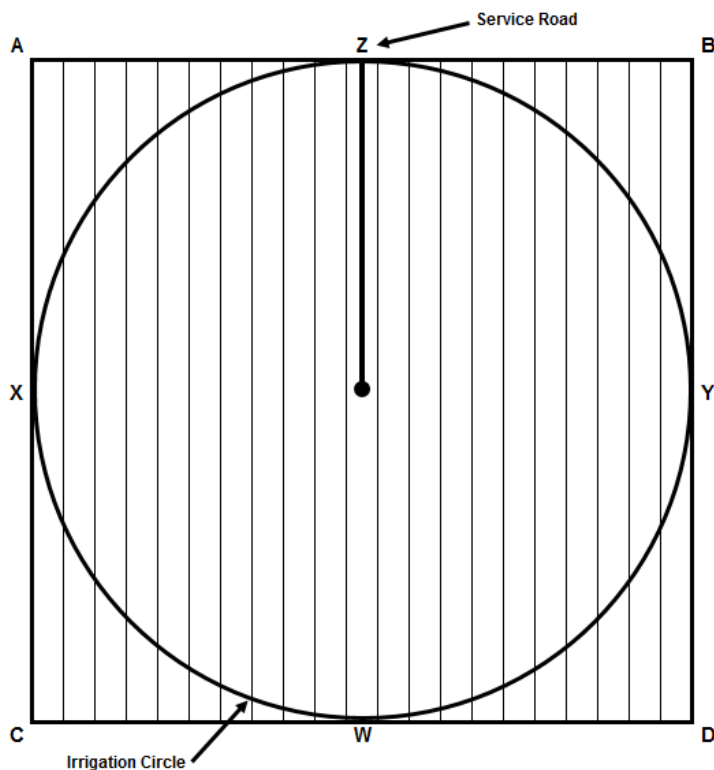
Corners A, D, E or H could be the starting corner under the "unit location" principle because the sample unit would have equal chance of falling anywhere in the field.

Corners B, C, F, or G cannot be the starting corner because the unit has less chance of falling in the areas of the field marked by Corners A, B, G, H. For example, if "corner B" was chosen as the starting corner and counted rows towards "corner A", rows B to A would have a chance to be in the sample twice before rows B to D had a chance to be in the sample once.

Drilled Fields

When drilled fields have no distinguishable rows, substitute paces for rows when laying out the unit for both pre-harvest and post-harvest visits.

Center Pivot Fields - Starting Corners



Scenario 1

The entire field including corners, is planted to soybeans. For all states except Nebraska, the correct choices for starting corners are A, B, C, and D even though the access road is at point Z. In most cases, the most accessible starting corners will be A and B since the service road can be accessed from the same side of the field. Paces along the edge of the field and into the field will be counted in the usual manner. Because Nebraska differentiates between irrigated and non-irrigated plantings for soybeans, the correct starting corner for this field in Nebraska would be point Z. While standing at point Z, unit 1 will be laid out to the right (towards point X). After unit 1 has been laid out, go back to point Z and lay out unit 2 to the left (towards point Y). Paces will be counted in the usual manner.

Scenario 2

The circle only, not including the shaded corners is planted to soybeans. Since the service road (point Z) is the most accessible corner, it in most cases is considered the starting point. While standing at point Z, unit 1 will be laid out to the right (towards point X). After unit 1 has been laid out, go back to point Z and lay out unit 2 to the left (towards point Y). Paces will be counted in the usual manner.

In scenario 2, as well as irrigated fields in Nebraska from scenario 1, if you have more than one sample to lay out in the field, the starting point for the second sample would be point X. The starting corner for a third sample would be point W and a fourth sample would start at point Y.

When Units Have Been Destroyed, Harvested or Cannot be Located on Later Visits

When returning to samples for the second, third, fourth or fifth monthly visits, you will generally find the sample units with no problem. However, for a few samples you may not be able to find a unit for the following reasons. Correct each of these problems with the appropriate procedure indicated below.

Problem: The crop is still standing in field, but you cannot find a sample unit(s).

Procedure: Lay out a new sample unit(s) using the same number of rows along edge and paces into the field as is shown on the Form B and also on the kit envelope for sample unit(s). Start from the same corner of the field as when the sample units were first laid out. On the Form B enter code "2" for unit relocated. Re-measure the row space and enter on the Form B.

Problem: Part of field has been destroyed by farmer before harvest (plowed, disked, mowed, etc.) including the area where one or both sample units were located.

Procedure: Record dashes for each unit that was destroyed. Write "Unit(s) _____ Destroyed" on margin of Form B. If only one unit was destroyed, complete all items for the remaining unit as usual. When laying out the sample units on the post-harvest visit, you would not count any paces when crossing the part of the field that was destroyed.

Problem: The entire field has been harvested, cut for hay, plowed, disked, etc.

Procedure: Write "Field (harvested, cut for hay, plowed, etc.)" on Form B. Complete Form E if field was harvested and not yet plowed, or if an alternate field in the same tract is available.

Problem: Part of soybean field has been harvested for beans, including one unit.

Procedure: Leave entries blank for unit that was harvested and write "Unit harvested for beans" on margin of Form B. Complete all items for remaining unit as usual.

–NOTES–

Chapter 5 – Form B

General

The Form B counts and measurements are used to forecast yield per acre. The components of this forecast are: number of plants, number of pods per plant, and weight of beans per pod. This information along with the Form A acreage information is then used to forecast soybean production in your State. Therefore, each item counted and measured is a very important component of this yield forecast and only by carefully completing each item can a reliable forecast be made.

The sample field kit envelope contains a supply of Form B's to be used for recording monthly counts and measurements. The same version of the Form B will be used each month counts are made.

Scheduling Final Pre-harvest Visits

Where fields in an area are expected to be ready for harvest prior to a regular survey period, you should schedule the final pre-harvest visit early so you can gather the mature pods from the unit before the field is harvested. Remember, if a harvest date is known, the regular procedure should be followed in order to gather the mature pods. If harvest date is not known, as a general rule, a sample field which was in maturity Stage 4 at the time of the monthly survey should be revisited in 7 to 14 days for the final pre-harvest observation. A field in maturity Stage 3 should be revisited in about 13 to 21 days.

If the crop has been harvested upon arriving at the field, but has not been plowed, disked, etc., make a note of this on Form B. The Form E, post-harvest gleaning, should be completed for gleaning samples. If the field has been harvested and then plowed before the final pre-harvest counts, state this clearly on the Form B. For gleaning samples the Form E, post-harvest gleaning, should be completed on an alternate field, if available in the tract.

Sample Identification

An ID label with the State code, POID and sample number has been pre-printed on the Form B. If this label is missing or illegible, copy the POID and sample numbers from the field kit envelope.

YEAR, CROP, FORM, MMDD	R/S/D	POID	SAMPLE
223	1181	100242890	0033
STATE	SEGMENT	TRACT	
IN	160037	31	



18100242890310100322800005785310

Forecast Month September 1

After verifying the label information enter the date in the space provided at the top of the Form B.

Date: _____

Pesticide Safety

Each Form A and B has a question asking if the operator has applied or will apply pesticides with organophosphorus content to the sample field. This question must be checked YES or NO for each Form. If YES is checked, the date of latest application and name of pesticide must be entered in the space provided. If the operator doesn't know if and when pesticides will be applied to the sample field at the time of the initial interview, be sure to make a note on the kit envelope and check with the operator again before entering the field.

You are required to exercise extreme caution to avoid exposure to dangerous pesticides. Operators are required to post chemicals used and application dates. Be sure to locate and adhere to postings. Never enter a field if a pesticide has been applied earlier in the day.

Always observe all precautions set forth in Chapter 1 of this manual.

Instructions for locating and laying out units are found in Chapter 4. Two units will be laid out for each sample on the first visit to the field. Soybean units consist of two rows, each 3 feet long, plus two adjacent 6-inch row sections. Since the same units will be used each month, you may proceed directly to the units by the most accessible route on successive monthly visits.

If for some reason the field counts cannot be made on the first visit, send in the blank Form B with a note at the top explaining the reason the sample could not be laid out. In such a case, the sample would be laid out the following month if the field is still standing for harvest. Every possible effort should be made to complete all assigned B Forms each month.

Unit Information

Record the date in the space provided at the top of the Form B.

4. UNIT LOCATION CODE. . .	1 First visit to lay out unit 2 Unit relocated this month 3 Sample unit laid out previously	Enter Code	UNIT 1	UNIT 2
			350	351
		If code = 3, skip to Item 6		

A unit location code will be recorded for each unit visited each month. Enter a code 1 for the first month the units are laid out. On later visits, if you find the unit you laid out earlier, enter code 3. If you are unable to locate the unit laid out earlier and it is necessary to stake out a new unit again this month, you will enter code 2 for the unit.

Row Measurement and Maturity Stages

5. ROW SPACE MEASUREMENTS

	UNIT 1	UNIT 2
a. Measure distance from plants in Row 1 to plants in Row 2 . Feet & Tenths	301 ▪ _____	303 ▪ _____
b. Measure distance from plants in Row 1 to plants in Row 5 . Feet & Tenths	304 ▪ _____	305 ▪ _____

The row space measurements obtained on the Form B are a very important part of the yield forecast. The forecast is expanded to a per acre basis with the row space measurements you obtain.

The measurements of row spaces will be made on the first visit to the sample units. (When you lay out the sample unit.) These measurements will be skipped on later visits unless a sample unit has to be relocated for any reason. Record all distances in feet and tenths of feet -- not in feet and inches.

Measuring distance from plants in Row 1 to plants in Row 2

At the dowel stick, measure the distance across the first row space with the steel tape. Anchor the end of the steel tape at the center of the plants in the first row in the unit and measure to the center of the plants in the second row in the unit. Record this distance in feet and tenths of feet.

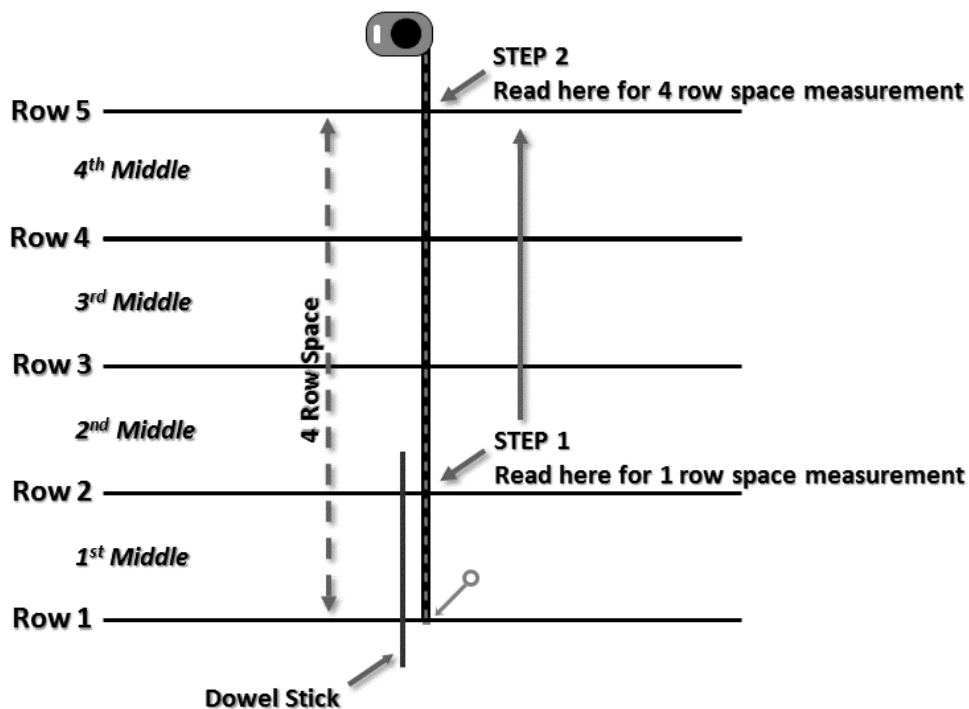
Measuring distance from plants in Row 1 to plants in Row 5

At the dowel stick, measure from the center of the plants in Row 1, in the direction of and to the center of the plants in Row 5. This is the distance across 4 row spaces.

If a sample is located in a field of broadcast soybeans or a unit falls in an area where no drill rows can be distinguished, do not complete Items 5a and 5b for that unit. Be sure to give the reason for no measurements in the margin.

If there are not enough rows remaining in the field to get a 4-row space measurement, measure from the middle of Row 2 in the direction of Row 1 across 4 row spaces.

Single Row Planted Row Space Measurements

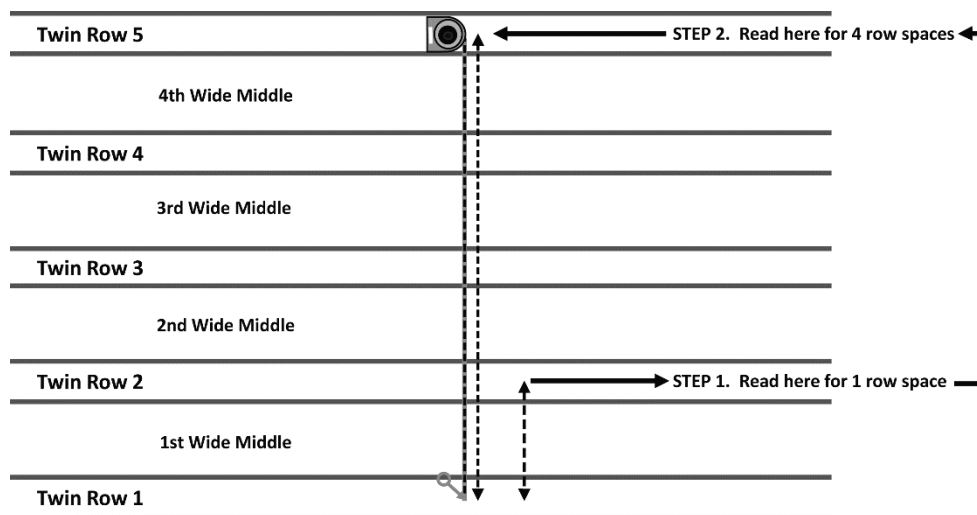


MEASURE DISTANCE FROM PLANTS IN ROW 1 TO PLANTS IN ROW 2: At the dowel stick, anchor the tape at the center of the plants in Row 1 of the unit and measure to the center of the plants in Row 2 of the units. Record in feet and tenths of feet.

MEASURE DISTANCE FROM PLANTS IN ROW 1 TO PLANTS IN ROW 5: At the dowel stick, anchor the tape at the center of the plants in Row 1 of the unit and measure to the center of the plants in Row 5. This is the distance across 4 row spaces. Record in feet and tenths of feet.

Twin Row Planted Row Space Measurement

If a field is planted in twin rows, i.e., two pairs of narrow rows separated by a wide middle, (Example: a 7-inch middle followed by a 30-inch middle), the one-row space measurement recorded in Item 5a is the distance between the center of twin row 1 and center of twin row 2. The entry in Item 5b is the measurement from the center of twin row 1 to the center of twin row 5.



In all cases of unusual row spacing (very narrow, very wide, or non-uniform row space arrangement), or when the unit falls in a blank area of the field and no row space measurement can be made, write an explanatory note in the margin of the form.

Counts Within Areas

Accuracy in making the counts in all of our objective yield work is of great importance. Counting often becomes a tedious task in soybeans because of the relatively high counts which may occur and the small size of items to be counted. Use your hand counter for all counts.

Observations Within 3-Foot Units

Items 6 and 7 are to be determined each month for each unit. Be certain to read all the items carefully each month.

OBSERVATIONS WITHIN 3-FOOT UNITS	UNIT 1		UNIT 2	
	ROW 1	ROW 2	ROW 1	ROW 2
6. Number of plants in row	306	307	308	309

Count and record the number of plants in each 3-foot row section. Count all soybean plants (including dead plants) regardless of size, physical condition or the presence or absence of fruit. Make this count by physically touching the base of each plant in the row and using your hand counter.

In some cases, one plant will separate below ground level giving the appearance of two plants. Special care should be taken that these plants are not counted as two plants.

Remember, plants in the Row 1 middle get counted in Row 1 and plants in the Row 2 middle get included in the Row 2 counts.

Do not damage plants in the unit. If necessary, examine a few plants of similar development outside the unit to assist you in determining the maturity.

Making Counts in Twin Row Units

All Form B plant & fruit counts and maturity code classifications made for sample units planted in twin planted rows will include all plants in the twin planted rows of each unit row.

Soybean Maturity Codes

7. Stage of maturity. Circle Maturity Code for each unit.

Always classify the unit in the lower stage of maturity when in doubt.

	Pods Set, Leaves Still Green or Earlier	Pods Filled, Leaves Turning Yellow	Pods Turning Color, Leaves Shedding	Pods Brown, Almost Mature or Mature
UNIT 1	300 2	300 3	300 4	300 5
UNIT 2	302 2	302 3	302 4	302 5
	For each unit in Stage 2, complete items 8, 9, 10, 11 & 12 only.	For each unit in Stage 3 or 4, complete items 8 and 12 only.		For each unit in Stage 5, complete items 8, 12, 13 & 14 only.

Use the descriptive material below as criteria for determining the maturity stage of each unit. The stage of maturity for each unit must be determined separately. There will be cases when you are undecided on the maturity stage of the unit. When this occurs, classify the unit in the lower stage of maturity.

Maturity Code 2 – Pods Set, Leaves Still Green, or Earlier

This covers all plant growth stages until the pods are full. All leaves will still be green. Flowers may or may not be present.

Maturity Code 3 – Pods Filled, Leaves Turning Yellow

Leaves will be yellowing on nearly all plants, but green leaves may still be more numerous on the plants than yellow or partially yellow leaves. Almost all the pods will be filled and some will be ripening.

Maturity Code 4 – Pods Turning Color, Leaves Shedding

All leaves will have turned yellow and some will have fallen. The pods will have their full size. Pods will be changing color from green to brown, but most pods will still be green. The beans are not firm and they have not completely shrunk inside the pods.

Maturity Code 5 – Pods Brown, Almost Mature or Mature

Virtually all pods will be brown and easily opened so the beans can be removed. The beans are brown and have shrunk inside the pod. Most or all of the leaves have been shed by the plants.

In classifying a unit maturity stage 4 or 5, if most leaves have shed and some pods are still green then the unit should be classified in stage 4. The difference between stage 4 and 5 is that in stage 5 the pods are brown, whereas in stage 4 some may be brown but most are still green. Again, if there is any doubt about the maturity stage, classify the unit in the lower stage.

Counts in the 6-inch Row Sections

- For Units in Stage 2, complete Items 8 through 12 only.
- For Units in Stage 3 or 4, complete Items 8 and 12 only.
- For Units in Stage 5, complete Items 8, 12, 13, and 14 only.
- If no plants are present, enter dashes (--) for Items 8 through 12.
- In each unit complete all items for Row 1 before starting on Row 2.
- When counting blooms, dried flowers and pods, under no circumstances do you try to determine whether the fruit will mature and be harvested before counting.

Counts for Item 8 are made for each unit through maturity.

	UNIT 1		UNIT 2	
	ROW 1	ROW 2	ROW 1	ROW 2
	310	311	312	313
8. Number of plants				

All soybean plants in the 6-inch row section of each row are to be counted even though a plant may be dead or have no fruit of any kind.

On the initial visit, the first and last plants in the 6-inch row section are to be tagged with a red plastic tag attached near the bottom of the stalk.

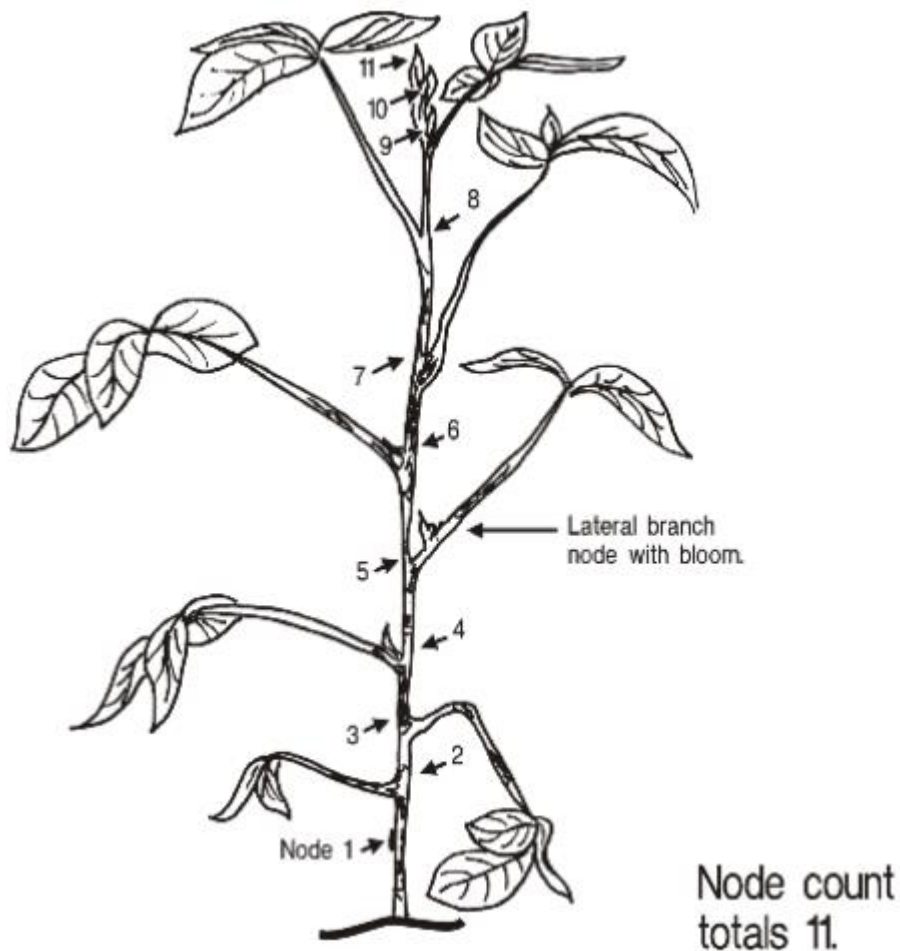
Counts for Item 9 are completed for each unit in maturity stage 2.

9. Number of nodes on main stem of plants	314	315	316	317
--	-----	-----	-----	-----

Record the number of nodes on the main stem above the ground on all plants (including dead plants) in the 6-inch row section. Do not attempt to count nodes below ground level or do not begin with a count of one at ground level. There must be at least one node per plant. Even though the plant is dead, count nodes on the plant. There will be a cluster of pods (blooms or dried flowers), a leaf or a lateral branch off the main stem for each node that is not barren. For some node positions there may not be a lateral branch or a cluster of pods to identify it; however, a scar will be visible or a roughening of the main stem can be felt at the node. There will be an obvious flattening or change in the shape of the stem for such nodes. Occasionally, a single leaf or fruiting stalk may be present at the node; all such nodes should be included in the count.

A node normally will be found about every two inches along the main stem, but they will get closer together near the top (or end) of the main stem. Several nodes may be found at the top of the main stem. Count as many of these as you can see without taking the tip apart.

In a few rare cases, the main stem may fork and form two main stems. If this should occur, treat them both as the main stem.



After counting as many nodes as can be seen and felt on the main stem, add one node for the growing tip. However, by the October 1 survey period in most States the soybean plant has reached its maximum height. The tip is no longer growing and the plant is in the ripening stages. When the growing tip can no longer be identified as such, do not add an extra node to the Item 9 counts.

Counts for Item 10 are completed for each unit in maturity stage 2.

10. Number of lateral branches with blooms, dried flowers, or pods.	318	319	320	321
--	-----	-----	-----	-----

Branches which bear blooms (and later pods) are called lateral branches for purposes of objective yield counting. Lateral branches that are counted must have at least (a) one leaf or a scar where a fallen leaf was attached, (b) one node and (c) one bloom or pod.

Counts of lateral branches with blooms, dried flowers or pods will be inaccurate unless a careful distinction between lateral branches with fruit and fruiting stalks is made.

Fruiting stalks grow from a node on the main stem. They are usually 1 to 3 inches long and do not contain nodes. In addition, they do not support a leaf. If a leaf is growing from the same node of the main stem as a fruiting stalk, the leaf is on the main stem, not on the fruiting stalk. Depending on the month you observe it, a fruiting stalk will contain only flower buds, flowers or pods.

Lateral branches with fruit have nodes and may be several inches long or as short as a fruiting stalk. A lateral branch contains one or more leaves, but these may have already shed when you make your observation. If so, you can see the scar at the node where the leaf was attached to the lateral branch.

Branches with fruiting positions only (green flower buds) should not be counted. The branch must contain blooms or pods in order to be counted as laterals. Also, the growing tip is not a lateral branch and should not be counted.

Counts for Item 11 are completed for each unit in maturity stage 2.

11. Number of blooms, dried flowers, and pods	326	327	328	329
--	-----	-----	-----	-----

Record the actual count of all the blooms, dried flowers and pods on all parts of all plants within each 6-inch section. Consider as blooms any buds which have the white or purple petals of the flower showing, even though they have not started to unfold or have only partially unfolded.

Note that counts of blooms, dried flowers and pods on lateral branches and on main stems are combined for this item.

Counts for Item 12 are made for each unit regardless of maturity stage.

12. Number of Pods with beans (include all pods in which beans have begun to form regardless of size or condition of beans) .	346	347	348	349
--	-----	-----	-----	-----

Count and record the number of pods in which one or more beans definitely are forming. You should be able to see the bulges in the pod corresponding to the individual embryo seeds indicating that bean development is taking place. You may have to carefully feel the pod with your fingers for the presence of beans.

Soybean development becomes noticeable at different times for different varieties. Developed beans become noticeable in pods of some varieties while the pods are still quite small. In other varieties, bean development will

not be noticeable until after the pod is over an inch long. On most plants, development is further advanced at the lower part of the stem.

When the beans are just starting to form, it is difficult to be certain if development has started. When in doubt, go outside the unit and check pods of similar size to see whether soybeans are being formed.

Do not include pods which aborted soon after fertilization and have no noticeable beans in the pod.

Harvesting Mature Beans

Item 13 is completed for each unit in maturity stage 5.

13. When MATURITY is in Stage 5 only:

- Harvest all pods (all sizes with or without beans) from all plants in the 3-foot section of Row 1 for each unit in Stage 5. **NOTE:** Special care should be taken so that pods are not damaged to ensure an accurate count of pods at the National Lab.
- Pick up all beans and loose pods in Row 1 middle.
- Deposit the pods and beans from each unit in separate paper bags.
- Attach ID tags and ship soybeans to the National Lab.
- Always complete and SHIP TWO ID TAGS even if ONE UNIT is not mature enough or has no pods.

Pods harvested should include pods of all sizes regardless of whether beans are present. Do not exclude pods which in your judgment would pass through the combine and not be harvested. If there is any doubt as to whether the unit is in maturity stage 5, it should be coded maturity stage 4 and should not be harvested. If both sample units are maturity stage 5, harvest all pods from all plants in the 3-foot section of Row 1 of both sample units. When harvesting pods from plants, be careful not to damage pods to ensure an accurate count of pods at the National Lab. Also, pick up any loose pods or beans found on the ground in Row 1 middle for the sample unit(s).

The "middle" associated with Row 1 extends up to, but does not include the plants in the second row. Row 2 is not harvested. Deposit the pods (small pods, blank pods and pods with beans) from each unit in a separate paper bag.

If only one unit is classified in maturity stage 5, harvest all pods (all sizes with or without beans) from all plants in Row 1 of the 3-foot section for the mature unit only. Send two ID tags to the National Lab; one for the mature unit, along with the harvested beans, and one for the immature unit, with an explanation of why the unit was not harvested. Another visit will have to be made to the other unit when it is mature.

If that portion of the field containing one or both units has a possibility of being farmed harvested between monthly survey periods, close contact must be maintained with the farmer to ensure that the final pre-harvest observations can be made and the lab sample taken.

After harvesting the pods as instructed in Item 13 for Row 1 of either unit, place pods in a paper bag, seal and attach an ID tag. Then place all paper bags for a sample in the same shipping sack addressed to the National Lab. If a second bag is required to hold all of the pods from Row 1 of a unit, attach a second ID tag to the second bag and clearly mark each bag "1 of 2" and "2 of 2" as appropriate.

Twin Row Sample Final Pre-Harvest

The final pre-harvest procedures used for twin row planted fields are conducted using the same procedures used for the single row planted samples with the inclusion of the twin row.

Split Sample Final Pre-Harvest

Whenever one unit is harvested and no pods are harvested from the other unit because it is immature or for some other reason, you still must complete an ID tag for both units. Enter the reason why no pods were harvested on the ID tag and forward both completed tags to the National Lab with the harvested pods.

If you were unable to harvest any pods from Row 1 of both units, you must still complete two separate ID tags--one for each unit. Then, forward these to the National Lab in an envelope marked "No Pods in Unit 1" or "No Pods in Unit 2" as appropriate.

Because of the large volume of samples to be handled by the National Lab, it is important that the samples be transmitted daily. Send your samples as they are completed. Do not hold back several samples to be shipped at one time. Try to avoid shipping at country or small town post offices where ship pickup is limited to once every other day.

Once the unit is enumerator harvested (maturity stage 5) no further counts are made in that unit.

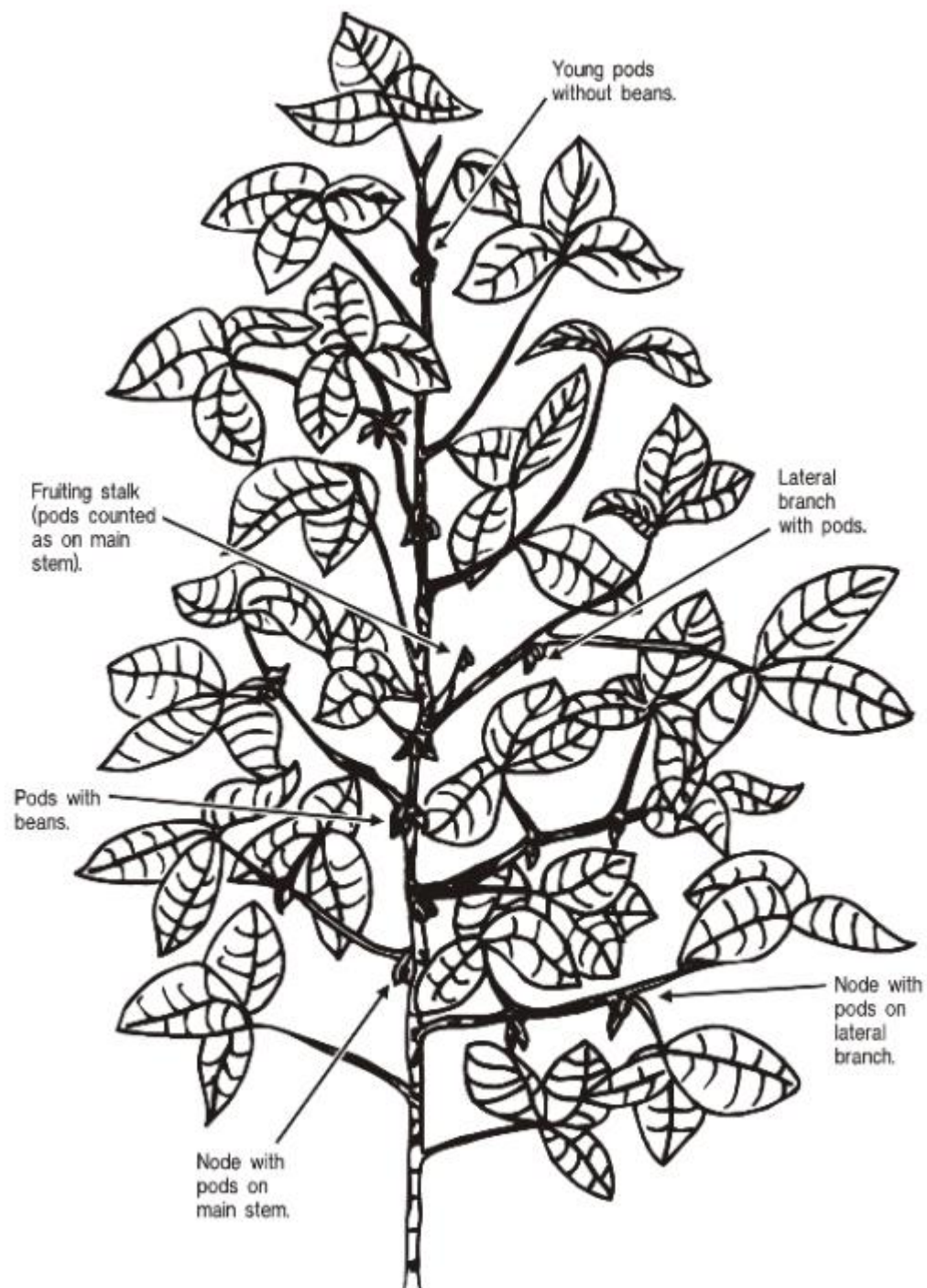
	UNIT 1	UNIT 2
14. Did you pick ANY pods or beans from Row 1 and send them to the National Lab? (Maturity Code must be Stage 5, or farmer harvest is expected within three days, to be picked.)	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO

Enter "YES" or "NO" for both units to indicate whether beans were picked on this visit. Enter "No" if beans had been harvested on a previous visit and make a comment indicating the status of the previously harvested sample.

Before leaving the field, check the form to be certain that all items are completed, draw field sketch on kit envelope, and sign your name at the bottom of the form.

Enter both your number and your supervisor's number in the boxes provided.

Soybean Plant with Pods Set



FORM B SOYBEAN YIELD COUNTS - 2022

OMB No.: 0535-0088
Approval Expires: 3/31/2023
Project Code: 102
Survey ID: 3228



Date: _____

UNIT LOCATION

1. Number of rows along edge of field.....
2. Number of paces into field.....
3. Has operator applied pesticides with organophosphorus content to the sample field?
☐ Yes ☐ No

If YES, enter latest application date _____ and name of pesticide _____

4. UNIT LOCATION CODE.....
1 First visit to lay out unit
2 Unit relocated this month
3 Sample unit laid out previously

UNIT 1	UNIT 2

UNIT 1	UNIT 2
350	351

If code = 3, skip to Item 6

5. ROW SPACE MEASUREMENTS

- a. Measure distance from plants in Row 1 to plants in Row 2..... Feet & Tenths
- b. Measure distance from plants in Row 1 to plants in Row 5..... Feet & Tenths

UNIT 1	UNIT 2
301	303
304	305

OBSERVATIONS WITHIN 3-FOOT UNITS

6. Number of plants in row.....
7. Stage of maturity. Circle the Maturity Code for each unit.

When in doubt, classify the unit in the lower stage of maturity.

	Pods Set, Leaves Still Green or Earlier	Pods Filled, Leaves Turning Yellow	Pods Turning Color, Leaves Shedding	Pods Brown, Almost Mature or Mature
UNIT 1	300 2	300 3	300 4	300 5
UNIT 2	302 2	302 3	302 4	302 5

For each unit in Stage 2, complete items 8, 9, 10, 11 and 12 only

For each unit in Stage 3 or 4, complete items 8 and 12 only.

For each unit in Stage 5, complete items 8, 12, 13 and 14 only

FORM B: SOYBEANS - *continued*

COUNTS for 6-INCH ROW SECTIONS (in front of 3-foot units)

If no plants are present, enter dashes (-) for items 8 thru 12. In each unit, complete all items for Row 1 before starting on Row 2. Perform the check after completing item 12.

8. Number of plants
9. Number of nodes on main stem of plants
10. Number of lateral branches with blooms, dried flowers, or pods
11. Number of blooms, dried flowers, and pods
12. Number of pods with beans (include all pods in which beans have begun to form regardless of size or condition of beans)

UNIT 1		UNIT 2	
ROW 1	ROW 2	ROW 1	ROW 2
310	311	312	313
314	315	316	317
318	319	320	321
326	327	328	329
346	347	348	349

FOR ANY ROW, if item 12 is greater than item 11, recount 11 and 12.

STAGE 5 MATURITY OR FARMER HARVEST WITHIN 3 DAYS

13. When MATURITY is in Stage 5 Only:
 - Harvest all pods (all sizes with or without beans) from all plants in the 3-foot section of Row 1 for each unit in Stage 5. **NOTE:** Special care should be taken so that pods are not damaged to ensure an accurate count of pods at the National Lab.
 - Pick up all beans and loose pods in Row 1 middle
 - Deposit the pods and beans from each unit in separate paper bags.
 - Always complete and SHIP TWO ID TAGS even if ONE UNIT is not mature enough or has no pods
 - Attach ID tags and ship soybeans to the National Lab.

14. Did you pick ANY pods or beans from Row 1 and send them to the National Lab? (Maturity Code must be Stage 5, or farmer harvest is expected within three days, to be picked.)

UNIT 1		UNIT 2	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

If counts were NOT completed for one or both units, give reason in comments.

ENUMERATOR COMMENTS:

ENUMERATOR:

15. Did a supervisor assist you in working this sample?

☐ Yes ☐ No

Enumerator Number	390
Supervisor Number	391
Evaluation	393

UPS TRACKING NUMBER:

(For soybean samples sent to National Laboratory)

UNIT 1	UNIT 2
380	381

STATUS CODE

Completing Soybean Sample ID Tags

All soybean lab samples (pre-harvest and post-harvest) must be properly identified by attaching a completed ID tag to the outside of each paper bag. These tags are essential in maintaining the identity of soybean samples from the time they leave the field until they reach the final step of the lab process. The data entered or checked on the tag are essential for orderly and timely processing in the lab.

An example of the ID tag to be used during the survey follows. The instructions for completing the tag, either on the tag or in the illustration, should be followed carefully.

Soybean Pre-Harvest and Post-Harvest Sample ID Tag

SOYBEAN SAMPLE I.D. TAG		
STATE: _____		
POID _____		
SAMPLE NO _____		
FORM B DATE: _____		
FORM E DATE: _____		
ENUMERATOR _____		
PRE-HARVEST		
BEANS and PODS: (Row 1 3 Foot Unit)		
A. UNIT NUMBER (Circle One)	1	2
B. Were pods collected? YES <input type="checkbox"/> NO <input type="checkbox"/>		
If NO, state reason: _____		
Agree to participate in the USB and ARS research projects? YES <input type="checkbox"/> NO <input type="checkbox"/>		
POST HARVEST		
(Unit 1 and 2 Combined into 1 Bag)		
PODS, LOOSE BEANS & PIECES - Check <input type="checkbox"/>		
SHIP SAMPLE TO		
NATIONAL OPERATIONS DIVISION LAB		

Copy sample identification info from Form B, Form E or Sample Field Kit Envelope. The date on the sample ID tag must match the date on the corresponding B or E Form.

Circle the appropriate units from which the pods were picked. Always complete two ID tags for each sample even though beans may have been picked from only one unit.

Do not count the pods. If no pods were picked from the unit during this visit, indicate the reason.

For post-harvest, only one tag will be completed for each sample field. All pods, loose beans and pieces of beans go into one bag.

Verify that the Tyvek envelope is properly addressed to the National Lab.

Packaging Samples to Send to the National Objective Yield Lab

1. Label each sample unit bag with the sample and unit number before harvesting the pods from the 3 foot section of unit row 1.
2. After all of the pods from the 3 foot section of row 1 have been deposited in the paper bag, gently shake or jiggle the bag to help the pods settle to the bottom. This helps condense the size of the package and protects against rupturing in shipping.
3. Pinch the bag closed at the top of the fill level of the bag.
4. Fold the remaining head space/slack out of the unfilled portion of the top of the bag.
5. Wrap a single rubber band around the bag in a way that will keep it from coming open during shipment. If the package is not too large it may be necessary to stretch the rubber band around the package a second time to hold it tightly shut. Only rubber bands are to be used to hold sample bags shut.

*****NEVER USE TAPE, STAPLES, ADHESIVES, ETC. FOR CLOSING SAMPLE BAGS. USE RUBBER BANDS ONLY!*****

6. After the bag has been banded closed, slide the completed sample ID tag underneath the rubber band with the printed side facing outward so the sample can be readily identified upon opening the package. Do not put the sample ID tag inside the bag.
7. Record the 18-character UPS tracking number from shipping label on the Tyvek envelope that will be used for shipping the sample to the National Lab on the respective sample's Form B. It is also a good practice to record the full 18-character UPS tracking number on the sample's kit envelope in case the sample goes missing after you have dropped the package off at the UPS pick-up facility.
8. Place the packaged sample bags into the Tyvek envelope.
9. Try to draw the slack out of the top of the envelope before affixing the adhesive flap to close it.
10. After the Tyvek envelope has been sealed closed it is now ready for drop-off at a UPS pick-up facility.

Note: UPS representatives recommend placing a single strip of tape over the seal as an extra precaution.

The image below is an example of how soybean sample bags should be packaged for shipment to the National Lab.

The image shows two brown paper bags, each with a pink label. The labels are for soybean samples and contain the following information:

SOYBEAN SAMPLE ID TAG
STATE: MO-29
POID: 800426790
SAMPLE NO: 5
FORM B DATE: Sept 28
FORM E DATE: Sept 28
ENUMERATOR: Tim Emerson

PRE-HARVEST
BEANS and PODS: (Row 1 3 Foot Unit)
A. UNIT NUMBER (Circle One) 1 2
B. Were pods collected? YES ☐ NO ☐
If NO, state reason: _____

Agree to participate in the USB and ARS research projects? YES ☒ NO ☐

POST HARVEST
(Unit 1 and 2 Combined into 1 Bag)
PODS, LOOSE BEANS & PIECES - Check ☐

SHIP SAMPLE TO
NATIONAL OPERATIONS DIVISION LAB

Shipping to the Objective Yield National Lab

Good Shipping Procedures:

- Reduce transit time
- Reduce loss of samples whenever a shipping tag is destroyed in transit
- Improve sample quality received in the lab
- Do not interrupt lab workflow

Shipping Samples in Tyvek Envelopes:



- Include both units if available and if both will fit into one Tyvek envelope. Include an ID tag with each unit. If only one unit is being shipped, include a second loose ID tag for the missing unit showing the reason for its absence (lost to harvest, not planted, drowned out, blank area, etc.)

RFOs should place a shipping label on the Tyvek envelope and seal it for shipping to the NOD.

There are two procedures for shipping samples to the National Lab. Field enumerators should utilize UPS shipping when available.

UPS 2nd Day Air or UPS Next Day Air Option



- The samples should be taken to a UPS drop off location or a UPS store. If approved, you may also request a pickup by UPS.

USPS Option



- The samples should be taken to the front desk of a post office or sub-station that is still open, unless you have made previous arrangements with the post office where you drop the samples off. The post office may be apprehensive if they find the Tyvek envelope in an outside drop box without their prior knowledge.

The Dos & Don'ts of Packaging and Shipping Soybean Samples

- Do:** Make specific notes such as, "Unit 1 harvested by farmer before sample could be taken".
- Do:** Use paper bags for post-harvest gleanings and enclose with the Form E in the cloth sack. If the gleaned pods and/or beans are very wet, you may need to use cloth sacks instead of paper bags to eliminate the possible problem of paper bags bursting inside the cloth sack
- Do:** Use paper bags for post-harvest gleanings and enclose with the Form E in the cloth sack. If the gleaned grain is very wet, you may need to use cloth sacks instead of paper bags to eliminate the possible problem of paper bags bursting inside the cloth sack.
- Do:** Completely fill out the ID tag, making sure that the date and POID on the ID tag matches the field work date and POID on the Form B or Form E. The lab will use the date on the ID tags for the lab forms.
- Do:** Place sample ID tag on the outside of paper bag. Secure bag with rubber bands.
- Do:** Ship only one sample (2-units) per cloth shipping sack. When paper bags are broken during shipping, there are enough problems to contend with when only one sample is involved in the cloth sack.
- Do:** Ship completed Form B's to the office in a separate envelope.
Ship forms for refusals or "no gleanings" to the office, not to the lab.
- Do:** Ship samples as soon as possible after taking them from the field. Do not hold longer than 24 hours.

- Don't:** Use red pencil or pen on ID tags.
- Don't:** Use poly bags for post-harvest gleanings unless sample is too wet.
- Don't:** Leave long, sharp stems on pods harvested from plants or picked up from gleanings units.
- Don't:** Use tape of any kind on paper bags containing field samples. This creates a major inconvenience at the national laboratory and interrupts the sample processing work flow.

–NOTES–

Chapter 6 – Form E

General

The purpose of the Form E is to collect data to determine harvest loss. This is subtracted from gross yield obtained from Form B counts and measurements to arrive at a net yield.

The post-harvest field gleanings must be completed for all gleaning samples. Your responsibility is to find out when harvest is expected by maintaining contact with the operator. Delaying the post-harvest observations longer than three days results in beans left on the ground being destroyed or carried off by wind, rodents, birds, etc.

If the sample field has been plowed, disked or pastured between harvest and the time you arrive for the post-harvest observations, you should select the closest field harvested for beans in the same tract for the post-harvest observations. If no alternate field is available, record this information and what happened to the original sample field under Item 7. In such cases, the gleaning sample is lost and no post-harvest observations will be made.

If farmer harvest in that portion of the sample field containing one or both pre-harvest units is not complete when you arrive and will not be completed that day at all, or will not be completed before the cutoff date, post-harvest observations can be made in the harvested portion of the sample field. If you use another part of the sample field, start your count of rows and paces in the harvested area nearest to the starting corner. Use the bounce back technique, if necessary.

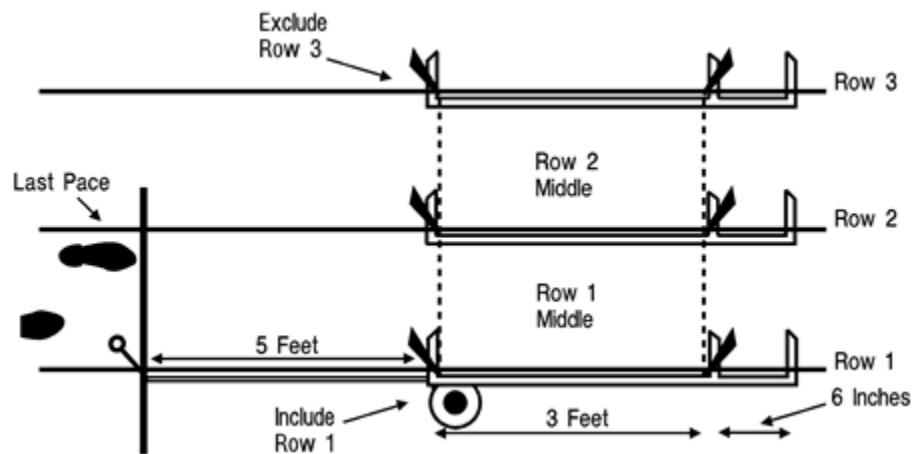
Location, Layout and Markings

Record the date in the space provided at the top of the Form E.

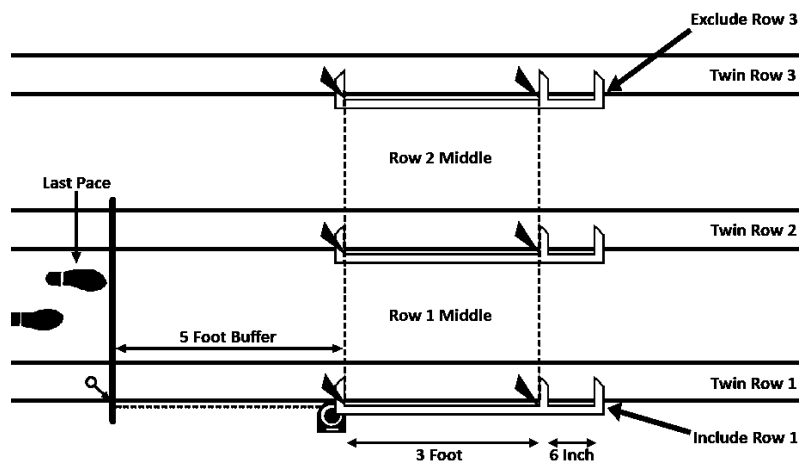
To locate the sample units, you will follow the unit location procedures in Chapter 4. The post-harvest units will be located five rows farther along the edge of the field and five paces beyond the location of the units observed on the pre-harvest visits. Do not mark them permanently, as you will not return to these units.

The sample field will contain two sample gleaning units each consisting of two 3-foot row sections and the associated middles. Post-harvest gleanings do not include the 6-inch count section. The frame will have to be positioned in Row 3 as well as Rows 1 and 2 in order to mark the corners of the unit including the Row 2 middle. See the illustration on the following page for laying out the units.

Post-Harvest Gleaning Unit with Identifiable Rows



Post-Harvest Gleaning Unit in Twin Row Planted Fields



Twin Row Gleaning Samples

Post-harvest gleaning samples in twin row planted fields will be laid out using the same procedures used for laying out single row planted field gleaning sample units with some minor exceptions:

- The twin row gleaning unit will include the first twin planted row and the following wide row middle, the second twin planted row and the following wide row middle up to the leading edge of the third row. Exclude plants third twin row plants from the gleanings unit. *See the single row example in Chapter 6.*
- Row space measurements are recorded from the center to center of twin planted rows
- Place gleaning unit boundary stakes on the leading edge of the first row of the first set of twin rows and on the leading edge of the first row of the third set of twin rows then tie ribbon around the perimeter of the stakes to establish the gleaning unit boundary lines

FIELD OBSERVATIONS

		UNIT 1		UNIT 2	
3.	Measure distance from plants in Row 1 to plants in Row 2 . . .	701	702		
	Feet and Tenths	. ____	. ____		
4.	Measure distance from plants in Row 1 to plants in Row 5 . . .	703	704		
	Feet and Tenths	. ____	. ____		

At the dowel stick, measure the distance across one row space. The distance will be from the center of the plants in Row 1 of the unit to the center of the plants in Row 2. Enter the distance in feet and tenths of feet.

Measure the distance from the center of the plants in Row 1 of the unit to the center of the plants in Row 5. Enter the distance in feet and tenths of feet.

Note: If the sample is located in a field of broadcast soybeans enter **999.9** in Items 3 and 4 for each unit.
Enter **888.8** in Items 3 and 4 for each blank unit.

Gleanings in 3-Foot Units

Be sure to glean the plants and ground thoroughly in the gleaning area. Four beans per square foot equals a loss of about one bushel per acre.

Pick up all pods of all sizes regardless of whether beans are present. Do not exclude pods which in your judgment would pass through the combine and not be harvested.

		UNIT 1		UNIT 2	
		ROW 1	ROW 2	ROW 1	ROW 2
5.	Pick all pods with beans attached to plants, and loose pods with beans in each row middle and deposit in a paper bag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Check				

No counts are recorded. Pick the pods from the plants in each row and put in a paper bag. Pick up all pods, even though they may not have more than one soybean or even a piece of a soybean and put them in the paper bag. After the pods have been gleaned from the row middles, check the appropriate boxes to indicate this part of the gleaning operation was completed.

The "middle" associated with Row 1 will always be in the direction of the second row in the unit and will extend up to, but will not include, the plants in the second row. Similarly, the "middle" associated with Row 2 will begin with the plants in Row 2 and will extend up to, but will not include, the plants in Row 3.

6.	Pick up all whole beans and pieces of beans in each row middle and deposit in the same paper bag used for above item	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Check				

Pick up all whole soybeans found loose on the ground, and all pieces of soybeans found on the ground in the row middles and put them in the same paper bag used for pods. Most of the pieces will be split or half-bean pieces.

However, each piece, regardless of size, is to be picked up. Clear away all trash to expose the ground and any beans that may have been "hidden".

Check the appropriate box to indicate this part of the gleaning work was completed.

7. Was an alternate field used for making post-harvest observations?

☐ **YES** — (Indicate in Field Notes) ☐ **NO**

Check the appropriate answer. If no alternate field was available, explain the reason for not completing post-harvest observations in the lines under "FIELD NOTES". Remember to sign your name. Enter both your number and your supervisor's number in the boxes provided.

THE BACK OF FORM E IS FOR OFFICE USE ONLY.

Shipping Samples

After the gleaning work is completed from both units, you will have one bag with soybeans. Attach a completed ID tag to the bag. Place the Form E and the bag in a Tyvek envelope and ship to the National Lab within 24 hours from the sample was collected.

Post-Harvest Gleaning Unit in Broadcast Soybeans

This unit will be laid out the same as the broadcast unit for the pre-harvest sample, except the 6-inch sections are not included in the layout. Record row space measurements as **999.9** in Items 3 and 4 for broadcast seeded units. Enter **888.8** in Items 3 and 4 when units are blank.

FORM E SOYBEAN YIELD SURVEY - 2022

OMB No.: 0535-0088
 Approval Expires: 3/31/2023
 Project Code: 102
 Survey ID: 3229



United States
Department of
Agriculture



NATIONAL
AGRICULTURAL
STATISTICS
SERVICE

Please make corrections to name, address and ZIP Code, if necessary.

Date: _____

UNIT LOCATION

1. Number of rows along edge of field.....
2. Number of paces into field.....

UNIT 1	UNIT 2
+ 5	+ 5
+ 5	+ 5

FIELD OBSERVATIONS

3. Measure distance from plants in Row 1 to plants in Row 2..... Feet and Tenths
4. Measure distance from plants in Row 1 to plants in Row 5..... Feet and Tenths

UNIT 1	UNIT 2
701	702
703	704

GLEANINGS IN 3-FOOT UNITS

Put all pods from both units and all whole beans and pieces from both units in the same paper bag

5. Pick all pods with beans attached to plants, and loose pods with beans in each row middle and deposit in a paper bag Check
6. Pick up all whole beans and pieces of beans in each row middle and deposit in the same paper bag used for above item... Check
7. Was an alternate field used for making post-harvest observations?

CHECK EACH BOX AS COMPLETED

UNIT 1		UNIT 2	
ROW 1	ROW 2	ROW 1	ROW 2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Yes - (Indicate in Field Notes) ☐ No

FIELD NOTES: If post-harvest observations cannot be made, given reasons here.

FORM E: SOYBEANS - continued

8. Did a supervisor assist you in working this sample? ☐ Yes ☐ No

ENUMERATOR: _____

Enumerator Number

790

Supervisor Number

791

SHIPPING INSTRUCTIONS:

- Attach completed ID tag to the paper bag(s) containing gleanings.
- Place bag(s) and this Form E in a Tyvek envelope.
- Ship Tyvek envelope to the National Lab.

STATUS CODE

780

NATIONAL LABORATORY DETERMINATIONS

Date sample received in lab (MM DD) _____

Discard any pods with undeveloped beans. Thresh and hull all other pods from bag; combine with loose whole beans and pieces of beans.

9. Total weight of threshed and loose beans immediately before moisture test.. Grams to Hundredths

714

10. Moisture content of beans, rounded to tenths ^{1/}..... Percent

715

^{1/}If sample weight is too small for moisture test, sufficient beans of known moisture content will be added to the sample so that a moisture test can be made. The moisture content of the sample can then be derived using the following formula.

$$E = \frac{(A + B) D - (B \times C)}{A}$$

Where A = Weight of small sample (item 7) Grams

B = Weight of additional beans required for moisture test Grams

C = Moisture percent of B Percent

D = Moisture percent of A + B combined Percent

E = Result: Moisture percent of small sample (enter in item 8) Percent

Lab Technician(s) _____

Date Analysis Completed _____

MM DD

Chapter 7 – CAPI Data Entry

General

CAPI will be used for data entry for Forms A and B. All data will be recorded on the paper forms during the interview with the operator and in the field. After the form is complete, the enumerator will access their assignment listing on the iPad and enter the data for their samples into the CAPI tool exactly as it was recorded on the paper form and submit the record after data entry has been completed.

*****IMPORTANT: NEVER take the iPad into a field under any circumstance.*****

Enumerators may decide to enter the data immediately after they have finished the interview or exited the field or at the end of the day after all of their work has been completed. To take full advantage of the mobile data collection technology developed for this survey it is highly recommended for all data to be entered and submitted by the end of the day it was collected. RFO survey coordinators will provide specific instructions on how they wish to handle the completed paper Form As and Bs for samples entered and submitted via CAPI.

Survey Designer and Edit System

CAPI Form A and B instruments are designed in a system called Survey Designer. In this system the user has the ability to develop certain edits, which can assist the enumerator in making sure certain required cells are complete before final submission of the form through CAPI. These edits are a system of background checks within the Form A CAPI instrument and Form B CAPI instrument which will notify users of specific corrective actions that must be taken before proceeding with data entry. There are also certain data item checks that can be programmed in to assure completeness of the form. These depend on the OY form being done and the crop.

These edits will help users submit complete records that meet the basic requirements of the survey edit system used for processing OY Survey data at the Regional Field Offices.

Examples of Edits in Place:

- Fieldwork Date must be set before entering any other data in the form.
- A Status Code must be selected before proceeding to the next page.
- When Unit Location = 3 - Unit Laid Out Previously, the row space measurement cells are hidden. This is in place because the row space measurement does not change in a sample unit from month to month without first relocating it to a new position in the sample field.
- When Unit Location = 1 or 2, Row space measurement is required before proceeding.
- Enumerator and Supervisor fields must be complete before proceeding.

NOTE: Edits will not correct errors in entering the data. It is imperative that the user key the correct data in from the paper form, and into the correct cells in CAPI.

Always review your work before data entry and final submission. Errors on the paper form will also be errors when they are loaded to the survey edit system.

CAPI Form A and B Status Codes

Prior to the implementation of CAPI data collection in the Objective Yield Survey status codes were determined by the survey statistician based on the data reported by the enumerator who completed the form.

The status code is used to identify the sample unit's status for the current enumeration period based upon recorded observations.

A status code must be selected by the user in CAPI for each Objective Yield Sample form before proceeding.

Please read the selections from the drop-down menus carefully before selecting the code that identifies the current status of the sample being enumerated.

*****Status codes differ across all Objective Yield forms for all crops*****

Soybean Form A Status Code Definitions:

1- Complete

First Visit: The enumerator was able to get permission to visit the field, lay out the sample units and complete the Form A.

Minimum data requirement for Status Code 1:

- Interview date must be entered
- Questions 1-5 must be positive where applicable (102-105)
- Enumerator and supervisor number must be entered
- Status Code 1 must be selected (180)

7- Refusal

Any Visit: The farmer refused to participate in the survey in the Form A-1 interview or decided they do not want samples laid out in the field.

Future Visits: No future visits will be required.

Minimum data requirement for Status Code 7:

- Interview date must be entered
- Status Code 7 must be selected (180), no other data is required.
Enumerator and supervisor number must be entered.
Put in Form B and E (if applicable) as refusals as well

13- No Soybean for Harvest as Grain on Entire Farm

First Visit: No Soybean was planted for harvest as grain on the entire farm at the time the Form A-1 interview was conducted.

Future Visits: No future visits will be required.

Minimum data requirement for Status Code 13:

- Interview date must be entered
- Status Code 13 must be selected (180), no other data is required
Enumerator and supervisor number must be entered
Put in Form B and E (if applicable) as No Soybeans as well

When Soybean Form A Status Code is:	Is Form A Expected Next Month?
1- Complete (Form A expected next visit)	NO
7- Refusal	NO
13- No soybeans for harvest as grain on entire farm	NO

CAPI Response Coding and Where to Enter Comments

After Form A data entry is completed select the following response codes in the submission screen. See below for comments entry example.

Item	Response Coding Used for OY Surveys
Response:	Completed
Respondent:	(Who Responded)
Respondent Name:	(Leave Empty)
Respondent Mode:	Telephone on iPad
Enumerator:	Auto coded from Assignment Listing
Comments:	General survey comments from the paper form should be entered in the comments icon. Comments that are related to a particular cell or item can be entered in item level comments, accessible via calculator icon.

ENUMERATOR

FORM A 1 WINTER WHEAT YIELD SURVEY

Response:

Respondent:

Responded By (Enter respondent's name, if not the operator):

Reporting Mode:

Enumerator:

PREVIOUS

NEXT

Soybean Form B Status Code Definitions

1- Complete (Form B expected Next Visit)

The sample field is standing for harvest and sample unit measurements have been recorded. A Form B will be expected next month.

First Visit: Complete Form B to meet minimum data requirements for Status Code 1.

Future Visits: The enumerator will return to the sampled field to record measurements for both units and complete Form B accordingly each month until the sample units are mature enough to perform pre-harvest procedures and send the final pre-harvest sample to the national laboratory for processing.

Minimum Data Required for Status Code 1:

- Record Fieldwork Date
- Unit Location Codes must be 1-3 (350, 351)
- Row Space Measurements must be empty when Unit Location Code = 3 (301, 304, 303, 305)
- 3-foot area plant counts are positive where applicable (306, 307, 308, 309)
- Maturity code is 2-4 (300, 302)
- Number of plants is positive where applicable (310, 311, 312, 313)
- Number of nodes on main stem \geq number of plants in 6-inch count area (314, 315, 316, 317)
- Number of lateral branches $<$ number of nodes in unit row (318, 319, 320, 321)
- Number of blooms, flowers, and pods \geq number of plants in unit row (326, 327, 328, 329)
- Number of pods with beans \geq number of plants in unit row, and \leq number of blooms, flowers, and pods in unit row (346, 347, 348, 349)
- Status Code 1 must be selected for respective unit(s) (380, 381)

Form B is **expected next month**.

2- Farmer Harvested Before Unit Was Laid Out

The sample field was harvested for grain before sample was laid out. No alternate field is available in the tract.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 2.

Future Visits: No future visit will be required.

Minimum Data Required for Status Code 2:

- Record Fieldwork Date
 - Status Code 2 must be selected for respective unit(s) (380, 381), no other data is required
- Form B is **not** expected next month.

3- Farmer Harvested for Beans

Sample units were laid out but were harvested by the farmer before the current month's observations could be completed.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument.
If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E.
Complete Form B to meet minimum data requirements for Status Code 3.

Future Visits: No future visit will be required.

Minimum Data Required for Status Code 3:

- Record Fieldwork Date
- Status Code 3 must be selected for respective unit(s) (380, 381), no other data is required
Form B is **not** expected next month.

4- Enumerator Harvested Unit

Soybeans in sample unit were Maturity Code 5 and were harvested by the enumerator.

Pre-Harvest: Complete Form B to meet minimum data requirements for Status Code 4.

Future Visits: Gleanings samples (*sample numbers that are a multiple of 4, i.e. 4, 8, 12...*) will only require a future visit; within 3 days of farmer harvest.
No future visit will be required for non-gleanings samples.

Minimum Data Required for Status Code 4:

- Record Fieldwork Date
- Unit Location Codes must be 1-3 (350, 351)
- Row Space Measurements must be empty when Unit Location Code = 3 (301, 304, 303, 305)
- Number of plants in 3-foot area is positive where applicable (306, 307, 308, 309)
- Maturity code is 5 (300, 302)
- Number of plants in 6-inch count area is positive where applicable (310, 311, 312, 313)
- Number of pods with beans (where applicable) \geq number of plants in unit row (346, 347, 348, 349)
- Status Code 4 must be selected for respective unit(s) (380, 381)
Form B is **not** expected next month.

6- Lost Sample – Field NOT Harvested for Beans

The sample field was NOT harvested for beans. During the initial interview, the farmer indicated the field would be harvested for beans and the sample units were laid out by the enumerator. However, since the initial visit, the entire sample field was destroyed, plowed-up, pastured, or abandoned by the farmer.

Do not use status code 6 if the sample field has been harvested for beans but the field was plowed, grazed, etc. before the final pre-harvest observations could be made, use status code 3.

Any Visit: Confirm the field will not be harvested for beans with producer and complete Form B accordingly. Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 6.

Future Visits: No future visit will be required.

Minimum Data Required for Status Code 6:

- Record Fieldwork Date
- Status Code 6 must be selected (380, 381)

Form B is **not** expected next month.

7- Refusal

The farmer refused to participate in the survey in the Form A interview or decided they no longer wish to participate after samples were laid out in the field.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 7.

Future Visit: No future visit will be required.

Minimum Data Required for Status Code 7:

- Record Fieldwork Date
 - Status Code 7 must be selected (380, 381), no other data is required
- Form B is **not** expected next month.

8- Inaccessible (Form B expected Next Visit)

Sample units are standing for harvest, but are inaccessible by the enumerator this month. This occurs in instances where enumeration for the survey month was prohibited by weather, field point of access was closed, locked, recent chemical applications, etc.

Form B cannot be inaccessible the last survey month of the year. If no pre-harvest data can be collected, use status code 2 or 3 as the final Form B for the season.

Any Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. Complete Form B to meet minimum data requirements for Status Code 8.

Future Visits: Return to field as normally scheduled.

Minimum Data Required for Status Code 8:

- Record Fieldwork Date
- Status Code 8 must be selected (380, 381), no other data is required
Form B expected next month.

10- Unit Harvested by Enumerator in previous Visit

This sample unit was harvested (status code 4) in a previous visit. The sample unit remaining in the field will be the only unit to have measurements taken because this unit was harvested in a previous visit.

Counts and enumerator harvest were completed earlier for this sample unit, (status code 4 on the previous visit). Form B will be completed for the other unit whether it is mature and harvested or immature.

Any Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. Complete Form B to meet minimum data requirements for Status Code 8.

Future Visits: Return to field as normally scheduled if remaining unit has not yet been harvested.

- Record Fieldwork Date
- Unit Location Codes must be blank applicable unit (350, 351)
- Row Space Measurements must be blank for applicable unit (301, 304, 303, 305)
- Number of plants in 3-foot area is blank for applicable unit (306, 307, 308, 309)
- Maturity code is blank for applicable unit (select 0 in CAPI instrument) (300, 302)
- Number of plants in 6-inch count area is blank for applicable unit (310, 311, 312, 313)
- Status Code 10 must be selected for respective unit (380, 381)
Form B is expected for each month a Form B is completed for the remaining sample unit.

11- Sample Field Planted But Not To Be Harvested as Beans

Sample field was planted to soybeans but not for harvest for beans. During the initial interview, the farmer indicated that the selected sample field will not be harvested for beans. No sample units were laid out.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 11.

Future Visit: No future visit will be required.

Minimum Data Required for Status Code 11:

- Record Fieldwork Date
- Status Code 11 must be selected (380, 381), no other data is required
Form B is not expected next month.

12- Soybeans Planted in Tract but Not in Sample Field

During the initial interview, the farmer indicated that the selected sample field was planted to soybeans, however the field was discovered to be planted to another crop. No sample field is available to be surveyed.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 12.

Future Visit: No future visit will be required.

Minimum Data Required for Status Code 12:

- Record Fieldwork Date
- Status Code 12 must be selected (380, 381), no other data is required
Form B is **not** expected next month.

13- No Soybeans Planted for Harvest as Beans in the Tract

During the initial interview, the farmer indicated they did not plant any soybeans in the entire segment. No sample field is available to be surveyed.

First Visit: Add comment explaining the situation on Form B/in Enumerator Comment area of CAPI instrument. If a Gleanings sample, add fieldwork date and comment explaining the situation on Form E. Complete Form B to meet minimum data requirements for Status Code 13.

Future Visit: No future visit will be required.

Minimum Data Required for Status Code 13:

- Record Fieldwork Date
- Status Code 13 must be selected (380, 381), no other data is required
Form B is **not** expected next month.

Status Code Summary:

When Soybean Form B Status Code is:	Form B Expected Next Month?
1- Complete	YES
2- Farmer Harvested for Grain before Units Were Laid Out	NO
3- Farmer Harvested for Grain after Units were Laid Out	NO
4- Enumerator harvested sample unit	NO
6- Lost Sample – Field NOT harvested for beans	NO
7- Refusal	NO
8- Inaccessible	YES
10- Unit harvested earlier	NO
11- Sample field planted to soybeans but not for harvest as beans	NO
12- Soybeans for Harvest as Beans in Tract, But Not In Sample Field	NO
13- No Soybeans Planted For Harvest as Beans in the Tract	NO

CAPI Response Coding

After Form B data entry is complete and you have clicked the Finish Button at the bottom of the form to submit the record, select the following response codes in the submission screen for each record.

Item	Response Coding Used for OY Surveys
Response:	Completed
Respondent:	Other
Respondent Name:	(Leave Empty)
Respondent Mode:	Face-to-Face on iPad
Enumerator:	Locked out and auto coded from Assignment Listing
Comments:	Do not enter OY comments on the submission page. All OY survey comments should be made in the Enumerator Comments area at the bottom of the Form B.

FORM B SOYBEAN YIELD COUNTS

ASSIGNMENT LISTING :: ::

DOE FARMS INC

ADDRESS Address verified. Click to make changes.

Response: Completed

Respondent: Other

Respondent Name: (LEAVE BLANK)

Respondent Mode: Select One

Enumerator: 05005

Comments:

- Do not enter survey comments on the submission page

- All survey comments should be made in the Enumerator Comments area at the bottom of the Form B

PREVIOUS

SAVE

SAVE FOR REVIEW

FINAL SUBMISSION

–NOTES–