United States Department of Agriculture
Risk Management Agency

Sesame Pilot Insurance Program

Training Handbook

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Sesame Pilot Insurance Program

Training Handbook

CONTENTS

INTRODUCTION

Purpose of this training handbook

Beginning with the 2011 crop, sesame is eligible for Federal crop insurance coverage under a pilot program for selected counties in Texas and Oklahoma. The purpose of this handbook is to provide crop insurance agents and adjusters an overview of the pilot program's provisions and the key differences between insurance for sesame and insurance for other crops with which you are already familiar. It assumes that the instructors and students are familiar with multi-peril crop insurance programs, and it is intended to supplement, not replace, the applicable pilot program documents. Except where indicated, the pilot program is governed by the Common Crop Insurance Policy Basic Provisions – Reinsured Version (11-BR) released in April 2010. In this handbook we refer to it simply as the Basic Provisions.

Abbreviations

The following abbreviations are used throughout this manual.

APH	Actual Production History
CIH	Crop Insurance Handbook
LAM	Loss Adjustment Manual
LASH	Loss Adjustment Standards Handbook
MPCI	Multi Peril Crop Insurance
RMA	Risk Management Agency
RO	Regional Office
SPOI	Special Provisions of Insurance
UG	Underwriting Guide

Format

The manual is divided into six chapters, as follows:

- Chapter 1: The Sesame Crop
- Chapter 2: Crop Provisions
- Chapter 3: Special Provisions
- Chapter 4: FCI-35s
- Chapter 5: Underwriting Guide
- Chapter 6: Loss Adjustment Standards Handbook

SECTION I: THE SESAME CROP

The purpose of this section is to provide a brief overview of sesame in the United States and the pilot APH insurance program beginning with the 2011 crop year.

1.1 The potential for sesame in the United States

Sesame is a hardy crop with nearly 3,000 commercial varieties around the world, and more than 38,000 genetic lines of production, which are able to withstand a variety of climatic, soil, and growing conditions, and produce seed varieties of several different sizes and colors including white, buff, tan, gold, red, brown, and black. However, overall there are two principle types of sesame – those developed for production in dry areas or for dry growing seasons, and those developed for production in moist areas or for moist growing seasons. The majority of world production is situated in semi-arid, tropical regions. Furthermore, each type of sesame can be produced using low-input or high-input production methods.

Sesame has the potential to become an important US field crop in the drier western portions of Texas and Oklahoma and in southeastern Kansas, i.e. mostly to the west of 97° west longitude, a meridian that runs through Dallas, Texas. The map on the next page shows the potential production region and zones with similar planting dates.

The potential for sesame has grown in recent years because of the success of the development of varieties of sesame that do not allow the seed to fall out of the pod or capsule, and can therefore be mechanically harvested with conventional combines. In the rest of the world, sesame is harvested by hand, which is cost prohibitive in the United States. These patented US varieties are called "non-dehiscent" sesame and are the only varieties that are eligible for crop insurance under the Actual Production History insurance plan for sesame.

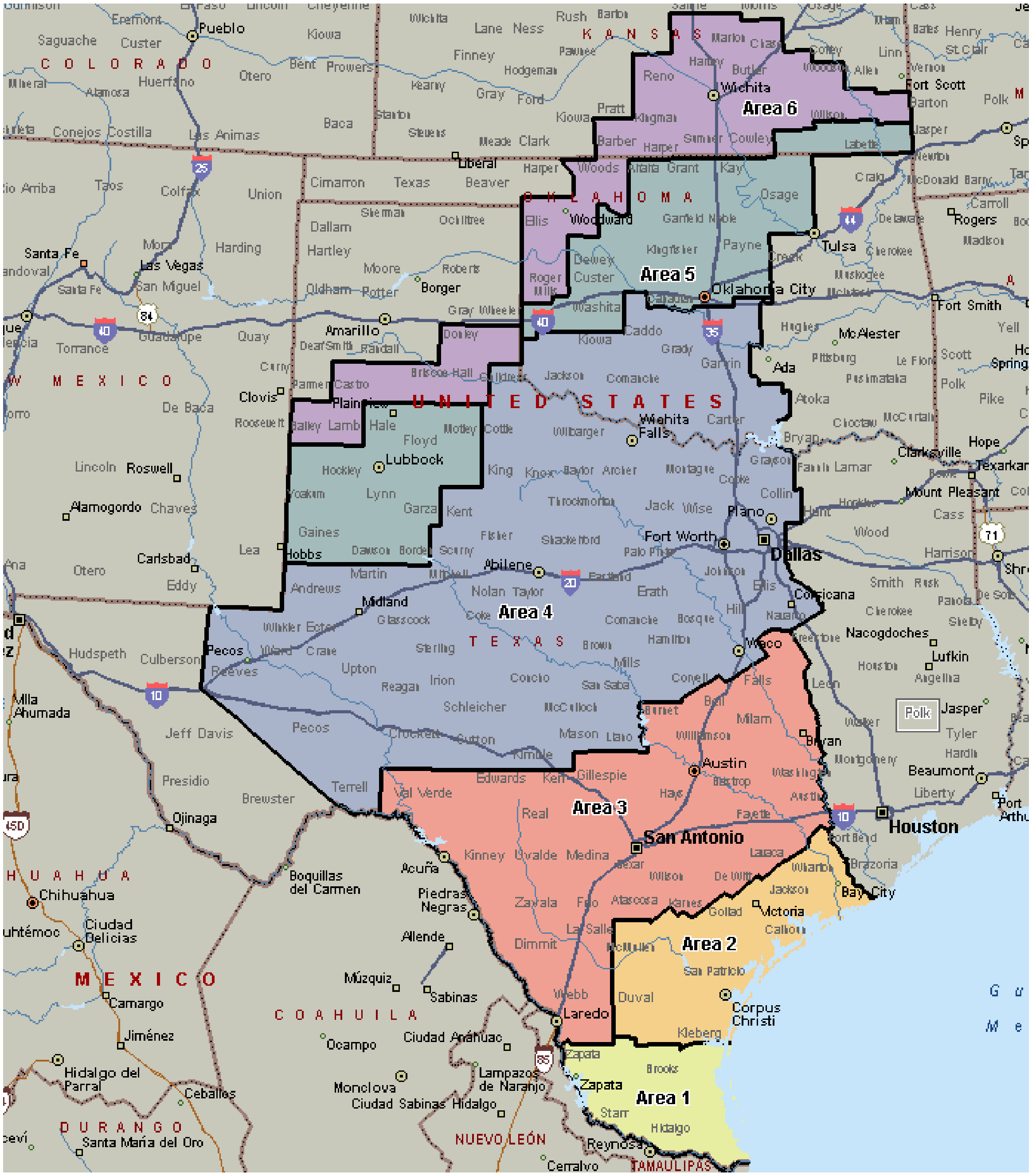
1.2 Benefits of providing crop insurance for sesame

Farmers in the drier areas of Texas, Oklahoma and Kansas have for some time wanted an alternative crop to grain sorghum and wheat, and to cotton in particular. Sesame can be a good addition to their rotations because of its drought tolerance and low production costs. But due to the unavailability of crop insurance, farmers were reluctant to grow sesame, and in many cases were prohibited by lenders from doing so.

Recognizing this need, Congress included a provision in the 2008 Farm Bill requiring development of a pilot insurance program for sesame. An APH program was designed and the Federal Crop Insurance Corporation approved it in November 2009, to take effect with the 2011 crop.

A successful insurance program may enable production to expand to hundreds of thousands of acres, providing US consumers with a domestic source of sesame with a greater assurance of food safety. US farmers may not only displace current sesame imports but also capture a significant share of the one million metric ton world export market.

Sesame Production Region



The following counties were selected for the pilot program:

Oklahoma Counties		Texas Counties		
Alfalfa	Kingfisher	Bee	Jones	Terry
Blaine	Kiowa	Crosby	Kleberg	Tom Green
Caddo	Major	Dawson	Lubbock	Uvalde
Custer	Tillman	Floyd	Nueces	Wichita
Dewey	Washita	Haskell	Runnels	Wilbarger
Garfield		Jim Wells	San Patricio	Zavala

1.3 Sesame phenology

Sesame production undergoes four main stages of phenology: vegetative, reproductive, ripening, and drying.[1] Each of the phases is subject to a number of factors including planting and environmental conditions, and can be further subdivided. Due to the sensitivity of sesame crops to a variety of factors, sesame seed stands do not always develop uniformly and may result in some areas undergoing advanced development sooner than others.

Vegetative phase (1 to 40 days after planting)

During the vegetative phase, when sesame seeds are sown, the planting rate of seed population is critical. Sesame seed emergence is characterized by very slow growth as the plant first concentrates on sending roots deep into the soil. The most critical stage of development is the post-emergence and the juvenile vegetative stage. Tightly packed plants in moderate to high population sesame stands quickly develop canopies to inhibit the establishment of weed infestations. The vegetative stage is the only stage in which farm tractors and irrigation pivots are used to administer fertilizer. Bloom and flowering begins during this stage.

Reproductive phase (41 to 80 days after planting)

The reproductive phase, characterized by the bulk of the bloom and flowering stage of development, is highly variable as flowers tend to start setting inside sesame stands rather than at the periphery of the field, and with uneven coverage. Seed capsules grow rapidly and the seed inside the capsules is developing. Irrigation in the reproductive stage can be critical before initial ripening and drying of early bloom areas within the sesame stand. However, sesame is also grown without irrigation as it is deep rooted and very drought tolerant.

[1] The phenology of sesame is fully described in Langham, D.R., "Phenology of sesame" in J. Janick and A Whipkey (ed), Issues in New Crops and New Uses, ASHS Press, Alexandria, VA, pp. 144-182, http://www.hort.purdue.edu/newcrop/ncnu07/pdfs/langham144-182.pdf. It is presented in a more accessible form in Langham, D. Ray, "Growth and Development of Sesame", ASGA, May 2008, http://www.sesamegrowers.org/farmer%20phenology%20080506.pdf.

Ripening phase (81 to 105 days after planting)

The ripening phase, when maximum seed weight is achieved, is the final point of physiological maturity and is characterized by the loss of all flowers and most leaves. Early cold weather or an early frost will not damage seed yield. A hard freeze in this phase or the drying phase may cause oil damage.

Drying phase (106 to135 days after planting)

Capsules begin to turn brown at the base of the plant and dry up the stem. Non-dehiscent varieties of sesame seed will let capsules open to aid in harvesting with a combine, reduce harvest losses, and dry until sesame seeds are less than 6 percent moisture by volume. A sesame seed is 50 percent oil, so 6 percent moisture is roughly equivalent to 12 percent moisture in grain.

1.4 Perils affecting sesame

The most common risks to US sesame production are **adverse weather conditions, insects**, **disease**, and **wildlife**. In the paragraphs below, summary overviews of each of these risks are presented.

Adverse weather

Certain conditions determine whether or not sesame will be resistant to **drought**. If there is good bottom moisture and rain at planting time, sesame will be drought tolerant and will almost always produce a crop. However, if there is pre-existing poor bottom moisture, the crop will depend on good moisture during the growing period. Typically, good bottom and seasonal moisture will provide the best yields.

Aside from **drought**, other weather conditions such as **cold weather**, **frost**, **hail**, and **wind** can pose a threat to sesame production. Regarding **cold weather** and **frost**, these risks exist only in the northern parts of the US sesame growing areas. However, this problem is quite rare provided sesame is planted prior to July 4th. Since 1987, there has not been a loss from cold when sesame is planted prior to this date.

With regard to **hail,** although this weather condition can damage sesame, the plant has the ability to recover from hail better than other crops because it is indeterminate and has the ability to branch through re-growth and to flower longer. **Wind** poses a problem in two respects. First, in areas where blowing sand exists, wind can damage seedlings. Farmers may try to control this risk with a "sand fighter" that hills up the inter-row spaces. However, even if this condition occurs, there is still an opportunity to replant the sesame due to its short period to maturity. Second, extreme winds can cause lodging. On a positive note, newer varieties of sesame are less susceptible to lodging than varieties introduced before 2000.

Insects

Several types of insects exist in the sesame growing areas of Texas and Oklahoma that might damage the crop (e.g. silverleaf whitefly, green peach aphid, fire ants, cabbage looper, & thrips). Most pesticides are not currently labeled for sesame. However, due to breeding efforts, current varieties are quite tolerant to these pests and there have been very few instances of significant economic damage to sesame from insects in recent years.

Disease

There are three root rots that affect sesame: *Fusarium*, *Phytophtora,* and *Macrophomina*. Generally speaking, *Fusarium* can become a problem in areas where sesame is planted after sesame without rotation for several years. Not until 1991 did Fusarium infect US commercial sesame. Since this date, there have been interspersed incidents of damage, most recently in the lower Rio Grande Valley, where some portions of the fields were lost to this disease.

Aside from the root rots, risks such as (a) charcoal rot, which shows up when sesame has been getting irrigations and or good rainfall and then there is suddenly no water, and (b) leaf diseases, which appear when there are extended periods of rainfall with little drying or sunshine, can hurt sesame production.

Animals

Sesame crops do not face significant risk from animals. Though animals such as white tailed deer, cattle, sheep, horses, goats, and doves will eat sesame as a last resort, they will turn to other crops first. There has never been a US field lost to animals in recent years. Wild hogs, which are a problem in Texas, do not eat sesame but may bed down in a field.

1.5 Extension materials available to growers

For many farmers, sesame will be a new crop with which they do not have direct experience. Land grant colleges no longer do much work on minor crops unless funds are specifically provided by that industry for contract research. However, Sesaco and the American Sesame Growers Association (ASGA) have produced educational materials that they make available to every grower who signs a contract. These materials provide excellent guidance on growing and harvesting sesame. The publications are as follows, and are available online at the links indicated:

> "Sesame Producer Guide", March 2010
> http://www.sesaco.net/Grower%20Guide%20100405%20website%20version.pdf
>
> "Sesame Harvest Guide", September 2008
> http://www.sesaco.net/Harvest%20pamphlet%20080903%20final%20b.pdf

"Growth and Development of Sesame", May 2008
http://www.sesamegrowers.org/farmer%20phenology%20080506.pdf

Appraisers will also find these publications very useful.

For the pilot program there will undoubtedly be some poor experience for some farmers the first year they try sesame, but the resources are available to get them on the right course the following year.

SECTION 2: CROP PROVISIONS

2.1 Introduction

This section of the training manual discusses each section of the Sesame Pilot Crop Provisions. There are 13 numbered sections in the lesson, and each one corresponds to the numbered sections of the policy. The section names and numbers are as follows:

1) Definitions
2) Unit Division
3) Insurance Guarantees, Coverage Levels, and Prices for Determining Indemnities
4) Contract Changes
5) Cancellation and Termination Dates
6) Report of Acreage
7) Insured Crop
8) Insurable Acreage
9) Insurance Period
10) Causes of Loss
11) Duties in the Event of Damage or Loss
12) Settlement of Claim
13) Late and Prevented Planting and Written Agreements

2.2 Learning objectives

After completing this section, you should be able to:

- ✓ Explain the similarities and differences between the sesame crop provisions and those for cotton and other major field crops in Texas and Oklahoma.
- ✓ Explain the basis of the insurance guarantee and what determines the price and quantity components.
- ✓ Calculate indemnities

2.3 Lesson

Each section in the lesson corresponds to the numbered items in the policy. For the specific policy language, consult the Sesame Pilot Crop Provisions.

1. Definitions

Base contract price	The price per pound of clean dry sesame seed (in U.S. cents per pound) stipulated on the processor contract (without regard to discounts of incentives) that will be used to determine your price election.

Since there is no futures market for sesame that would provide a reference price for insurance purposes, the pilot program uses the price in the contract between the grower and processor. A contract is required in order to assure that there is a market for the sesame crop once it is produced.

Clean dry sesame	Clean whole sesame seed after removal of dockage, foreign matter, and broken or damaged seed, with a moisture adjusted to 5 percent. The seed must be marketable, e.g., no heat damage, no mold damage, no Commercially Objectionable Foreign Odors (COFO), and not containing materials excluded by law such as glass or metal.

The insured crop is not the field run sesame as it emerges from the combine, but what the Crop Provisions define as "clean dry sesame". It is the quantity of sesame that the processor pays for under the contract with the grower. This is also what is recorded in the grower's production history for purposes of calculating approved yield.

Harvest	Combining for seed.

The crop must be harvested using a combine. Swathing or windrowing the crop is not permitted as it results in excessive seed loss.

Non-dehiscent sesame variety	A variety of sesame grown for food or industrial use that allows for mechanical harvest by retaining at least 65% of the seed in the capsule until reaching the combine and releases at least 95% of the seed from the capsule when combined.

Traditional sesame varieties have to be hand-harvested because the seed falls out on the ground if one tips the capsule. Non-dehiscent sesame holds most of the seed in the capsule, enabling mechanical harvesting with a combine.

Planted acreage	In addition to the definition contained in the Basic Provisions, sesame seed must be planted in rows. Acreage planted in any other manner will not be insurable.

Planting in rows is required because of better emergence of the small seeds when planted in rows. The adjacent seeds, typically about 30 per foot, help break through any soil crusting.

Price election	In lieu of the definition of "Price election" contained in section 1 of the Basic Provisions, the maximum price election is defined as the "Base contract price".

The base contract price determines the guarantee in conjunction with the grower's APH yield and his choice of coverage level.

Processor	Any business enterprise regularly engaged in buying and processing sesame seed, that possesses all licenses and permits for processing sesame seed required by the state in which it operates, and that possesses facilities, or has contractual access to such facilities, with enough equipment to accept and process the contracted sesame seed within a reasonable amount of time after harvest.

The processor is a necessary participant because there is no other ready market for the combined sesame as it comes out of the field. Unlike for corn or wheat, there is not a well developed commodity market for this specialty crop, although one might evolve as the scale of production grows. Moreover, special equipment is needed to clean the seed to the degree that customers require.

Processor contract	An agreement in writing between the producer and a processor, containing at a minimum: (a) The producer's commitment to plant and grow non-dehiscent sesame of the types specified in the Special Provisions, and to deliver the sesame production to the processor; (b) The processor's commitment to purchase all the production from a specified number of acres or the specified quantity of production stated in the processor contract; and (c) A base contract price.

Most contracts have been acreage contracts, but the Crop Provisions do permit quantity contracts.

Sesame	Non-dehiscent varieties of sesame adapted for mechanical harvesting of the seed for food or industrial use with minimal harvesting loss.

Only varieties that are non-dehiscent are covered. Production of seed for planting is not covered.

2. Unit Division

For the pilot program, unit division is governed by the Basic Provisions, except that optional units can be established by type if types are designated on the SPOI. Currently, types are designated for white sesame and black sesame. The vast majority of production will be white sesame.

3. Insurance Guarantees, Coverage Levels, and Prices for Determining Indemnities

All recent contracts have been acreage contracts, but the Crop Provisions also allow for production contracts so that all potential contracting possibilities are provided for.

It is possible for a grower to have more than one contract price on a unit if the processor changes his offer during the months-long contracting period, or if the grower has contracts with more than one processor. The Crop Provisions provide that each contract price will be considered a separate price election that will be multiplied by the number of acres under each contract.

For a production contract, the insurance guarantee is based on the production stated in the contract. For an acreage and production contract, the guarantee is the contracted acres multiplied by the contracted production per acre.

4. Contract Changes

The contract change date is the November 30 preceding the cancellation date.

5. Cancellation and Termination Dates

These dates are both March 15 except for the Winter Garden and Coastal Bend regions where the cancellation and termination dates are January 31.

6. Report of Acreage

In addition to submitting the acreage report by July 15, the producer must submit copies of all processor contracts.

7. Insured Crop

The key distinction here is that the insured crop is "clean dry sesame seed" grown under contract with a processor for food or industrial use (nor for seed for planting). The term "industrial use" generally means crushing of the seed to produce sesame oil.

The same prohibition as for other crops in this region applies to planting into an established grass or legume, or using a non-irrigated practice in the same calendar year on land from which hay was harvested, a small grain crop headed, or a crop was grazed past either February or March 15, depending on the county.

8. Insurable Acreage

Acreage damaged before the final planting date must be replanted unless the insurer agrees it is not practical. There is no replanting payment.

Rotation requirements in the SPOI must be met. The following are not insurable: acreage that was planted to sesame the preceding year, sesame seed planted when the soil temperature in the morning is less than 70°F, and sesame seed planted at less than a rate of 2.5 pounds of seed per acre.

For acreage contracts (and production and acreage contracts), the insurable acres are the lesser of the planted acres or the maximum number of acres in the contract. The typical acreage contract is for a specific number of acres, plus or minus 10 percent. Therefore, the "maximum number of acres" would be the specific number plus 10%.

For production only contracts, the insurable acres are equal to the lesser of the production specified in the contract divided by the approved yield, or the planted acres.

9. Insurance Period

The end of the insurance period is December 10.

10. Causes of Loss

The causes of loss listed in the Crop Provisions are the same as for most other crops:

Cause	Exception
Adverse weather	
Fire	
Volcanic eruption	
Earthquake	
Wildlife	
Insects	But not damage due to insufficient or improper application of pest control measures
Plant disease	But not damage due to insufficient or improper application of disease control measures
Failure of the irrigation water supply	If due to one of the other seven causes of loss that occurs during the insurance period

11. Duties In The Event of Damage Or Loss

The insurer may require that the grower leave representative samples of the unharvested crop. These must be at least 10 feet wide and extend the entire length of each field in the unit. They cannot be harvested or destroyed until the earlier of inspection by the insurer or 15 days after harvest of the rest of the unit is completed.

12. Settlement of Claim

Units

Any loss will be determined on a unit basis. If the insured is unable to provide separate, acceptable production records:

- For any optional units, the insurance provider will combine all optional units for which production records were not provided; or
- For any basic units, the insurance provider will allocate any commingled production to units in proportion to the liability on the harvested acreage for the units.

Production contracts

For any contract that specifies the actual amount of production to be delivered, if the farmer produces enough sesame to fulfill the processor contract(s), no indemnity will be paid for any loss of production on any unit.

Production to count

The total production to count, in pounds of clean dry sesame seed, equals all harvested production plus all appraised production. Appraised production includes the usual components:

- ✓ Not less than the production guarantee per acre for acreage
  - o That is abandoned
  - o That is put to another use without consent of the insurer
  - o That is damaged solely by uninsured causes
  - o Or for which the insured fails to provide acceptable production records.
- ✓ Production lost due to uninsured causes
- ✓ Unharvested production
- ✓ Potential production on insured acreage that the insured intends to abandon or no longer care for:
  - o If the insured and insurer agree on the appraisal, the insurance period ends
  - o If they do not agree and the insured continues to care for the crop, the production to count will be either what is harvested or the insurer's reappraisal if there is additional damage and the crop is not harvested.
  - o If they do not agree and the insured chooses not to continue to care for the crop, the insurer may consent to putting the acreage to another use, but the farmer has to leave acceptable representative samples and care for them. The production to count will be based on harvested production from or appraisals of the samples. If they are not cared for, the earlier appraisal will be used.

Steps to settle the insured's claim

Step 1) Multiply the insured acreage for each type by its respective production guarantee per acre;

Step 2) Multiply each result in Step 1 by the respective price election for each type;

Step 3) Total the results in Step 2;

Step 4) Multiply the production of clean dry sesame seed to be counted for each type by its respective price election. If the grower has multiple processor contracts with varying price elections, the production to count is valued by starting with the highest price election first, and continuing in decreasing order, and the amount of production insured at each price level.

Step 5) Total the results in Step 5;

Step 6) Subtract the result of Step 5 from the result of Step 3; and

Step 7) Multiply the result of Step 6 by the insured's share.

Example: Settlement of Claim

Fred Farmer has a contract with Company A for 60 acres of white sesame with a contract price of 25 cents per pound. He has a second contract with Company A for 40 acres of black sesame in the same unit at 30 cents per pound. His APH yield is 800 pounds per acre for white sesame and 600 pounds for black sesame and he has coverage at the 75% level. His share in both cases is 100 percent. A hail storm damages both fields and the appraised yield is 400 pounds for the white sesame and 300 pounds for the black sesame.

His settlement of claim would be calculated as follows:

Step 1)	60 acres x 600 pounds =	36,000 pounds
	40 acres x 450 pounds =	18,000 pounds
Step 2)	36,000 pounds x $0.25 =	$9,000
	18,000 pounds x $0.30 =	$5,400
Step 3)	$9,000 + $5,400 =	$14,400
Step 4)	24,000 white PTC x $0.25 =	$6,000
	12,000 black PTC x $0.30 =	$3,600
Step 5)	$6,000 + $3,600 =	$9,600
Step 6)	$14,400 - $9,600 = Loss =	$4,800
Step 7)	$4,800 x 100% share = Indemnity =	$4,800

13. Late and Prevented Planting

The late planting and prevented planting provisions of the Basic Provisions are not applicable.

2.4 Summary

The treatment of sesame is similar to that of other row crops in Texas and Oklahoma, with the following main exceptions:

- ✓ The farmer must have an acreage or production contract with a processor.
- ✓ The base contract price is the maximum price election.
- ✓ The insured crop is "clean dry sesame seed" not the harvested sesame as it leaves the field.
- ✓ The insured acreage is the lesser of planted acreage or the acreage in the contract.

SECTION 3: SPECIAL PROVISIONS OF INSURANCE (SPOI)

3.1 Introduction

This section provides information on the format and use of the Sesame Pilot Special Provisions. The Special Provisions for the pilot counties are published by RMA each year prior to the contract change date of November 30. The crop identification number for sesame is 0396.

The Special Provisions for the sesame pilot are similar to those for other crops in the pilot counties.

3.2 Learning Objectives

At the end of this section, you should be able to:

- ✓ Become familiar with the Sesame Pilot Special Provisions.
- ✓ Determine which types of sesame are covered.
- ✓ Understand important dates and statements.

3.3 Lesson

The Special Provisions are distinct for each county, are part of the insured's crop policy, and take precedence over the Basic Provisions and the Sesame Pilot Crop Provisions. Note that several parts of the Crop Provisions have language that specifically gives that precedence to the Special Provisions, e.g. "unless allowed by the Special Provisions". So these are important and one should be familiar with their contents. It is here that types are specified for white sesame and black sesame, enabling optional units by type.

The information in the document is specific to the county, although in practice most of the text is the same for all pilot counties. In addition to showing the covered types and practices, it provides program dates and various statements. The applicable Special Provisions can be found using RMA's Actuarial information Browser which is available on the RMA website at the following link: http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/.

Dates

The three main things that vary from county to county are the sales closing date (January 31 in the southernmost counties and March 15 elsewhere), final planting date (ranging from June 15 to June 30), and the date for the General Statement on grazing (either February 15 or March 15). The dates by county are shown in the two tables on the next page.

Program Dates for Sesame

County	State	Territory	Cancellation Termination	Sales Closing	Final Planting	Acreage Reporting	Billing*	End of Insurance
Bee	TX	Coastal Bend	1/31	1/31	6/15	7/15	10/1	12/10
Jim Wells	TX	Coastal Bend	1/31	1/31	6/15	7/15	10/1	12/10
Kleberg	TX	Coastal Bend	1/31	1/31	6/15	7/15	10/1	12/10
Nueces	TX	Coastal Bend	1/31	1/31	6/15	7/15	10/1	12/10
San Patricio	TX	Coastal Bend	1/31	1/31	6/15	7/15	10/1	12/10
Uvalde	TX	Winter Garden	1/31	1/31	6/15	7/15	10/1	12/10
Zavala	TX	Winter Garden	1/31	1/31	6/15	7/15	10/1	12/10
Crosby	TX	Caprock	3/15	3/15	6/20	7/15	10/1	12/10
Dawson	TX	Caprock	3/15	3/15	6/20	7/15	10/1	12/10
Floyd	TX	Caprock	3/15	3/15	6/20	7/15	10/1	12/10
Lubbock	TX	Caprock	3/15	3/15	6/20	7/15	10/1	12/10
Terry	TX	Caprock	3/15	3/15	6/20	7/15	10/1	12/10
Alfalfa	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Blaine	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Custer	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Dewey	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Garfield	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Kingfisher	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Major	OK	OK	3/15	3/15	6/20	7/15	10/1	12/10
Runnels	TX	Concho Valley	3/15	3/15	6/30	7/15	10/1	12/10
Tom Green	TX	Concho Valley	3/15	3/15	6/30	7/15	10/1	12/10
Haskell	TX	L.Rolling Plains	3/15	3/15	6/30	7/15	10/1	12/10
Jones	TX	L.Rolling Plains	3/15	3/15	6/30	7/15	10/1	12/10
Wichita	TX	U.Rolling Plains	3/15	3/15	6/30	7/15	10/1	12/10
Wilbarger	TX	U.Rolling Plains	3/15	3/15	6/30	7/15	10/1	12/10
Caddo	OK	SWOK	3/15	3/15	6/30	7/15	10/1	12/10
Kiowa	OK	SWOK	3/15	3/15	6/30	7/15	10/1	12/10
Tillman	OK	SWOK	3/15	3/15	6/30	7/15	10/1	12/10
Washita	OK	SWOK	3/15	3/15	6/30	7/15	10/1	12/10

Dates for SPOI General Statement on Grazing

County	State	Date	County	State	Date
Bee	TX	15-Feb	Dewey	OK	15-Mar
Jim Wells	TX	15-Feb	Garfield	OK	15-Mar
Kleberg	TX	15-Feb	Kingfisher	OK	15-Mar
Nueces	TX	15-Feb	Major	OK	15-Mar
San Patricio	TX	15-Feb	Runnels	TX	15-Mar
Uvalde	TX	15-Feb	Tom Green	TX	15-Mar
Zavala	TX	15-Feb	Haskell	TX	15-Mar
Crosby	TX	15-Mar	Jones	TX	15-Mar
Dawson	TX	15-Mar	Wichita	TX	15-Mar
Floyd	TX	15-Mar	Wallbarger	TX	15-Mar
Lubbock	TX	15-Mar	Caddo	OK	15-Mar
Terry	TX	15-Mar	Kiowa	OK	15-Mar
Alfalfa	OK	15-Mar	Tillman	OK	15-Mar
Blaine	OK	15-Mar	Washita	OK	15-Mar
Custer	OK	15-Mar			

Statements

There is one General Statement that contains the familiar provision that there is no insurance on any non-irrigated acreage from which in the same calendar year any of the following occurred:

- ✓ A hay crop was harvested.
- ✓ A small grain crop reached the headed stage.
- ✓ Or a crop was grazed past a specific date, either February 15 or March 15.

There are several Crop Statements.

Good farming practice: Sesame seed is not insurable on land planted to sesame the preceding year, or if planted when the soil temperature in the morning is less than 70°F, or if it was planted at less than a rate of 2.5 pounds of seed per acre.

Organic: Coverage is available for an organic farming practice.

Units: Sesame is not eligible for whole farm or enterprise units.

APH databases: Separate databases for certified and transitional acreage are required for any insured crop grown using an organic farming practice. The specific requirements are the same as for other crops in these counties.

The one exception: Jones County in Texas has a map area, as is the case for other crops in that county.

Finally, the SPOI includes the Insurance Availability Statement prohibiting discrimination.

3.4 Summary

The Special Provisions of Insurance are a key part of the insurance policy and provide dates and other key information of which both insurers and insured must be aware.

SECTION 4: FCI-35 ACTUARIAL DOCUMENTS

4.1 Introduction

The FCI-35s are actuarial documents used to determine the rates, fees, and applicable reference prices. The FCI-35s for the Sesame Pilot Insurance Program are similar to and formatted like FCI-35s for other insured crops. Therefore, most of the information found is self explanatory.

This actuarial document is located in the County Actuarial Book. The RMA publishes and releases the actuarial documents for each eligible county crop program prior to the contract change date listed in the Sesame Pilot Crop Provisions. The applicable document can be found using RMA's Actuarial information Browser which is available on the RMA website at the following link: http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/.

4.2 Learning objectives

At the end of this Chapter, you should be able to:

- ✓ Become familiar with the sesame FCI-35s.
- ✓ Read and understand the different tables.
- ✓ Determine the applicable reference yield, coverage level rate differentials, and other factors.

4.3 Lesson

The FCI-35 Coverage and Rate table is a document that provides the insurable crop types and practices, base premium rates, coverage level rate differentials, and transitional yields. High-risk map areas and corresponding rates, rate options, and related statements are also displayed on the table when applicable.

An agent should not use the FCI-35 to calculate the premium amount. The insurance provider or RMA web sites have premium calculation modules for premium calculations.

4.4 Summary

The primary topics to remember from the chapter are:

- ✓ The FCI-35 displays rate information that is used to determine producer premium.
- ✓ Specific coverage information is provided.
- ✓ Premium subsidy factors are provided.
- ✓ Transitional yields are shown.
- ✓ General statement(s) provide specific information and restrictions if applicable that impact the rate or coverage provided.
- ✓ How to read and understand the tables.

SECTION 5: UNDERWRITING GUIDE

5.1 Introduction and learning objectives

A separate underwriting guide is available for the sesame pilot program. The learning objective for this section is simply to become aware of the key differences in underwriting procedures for this crop.

5.2 Lesson

The Sesame Pilot Underwriting Guide details the various departures from standard CIH procedures. The main ones to be aware of are discussed below. The reference guide on the next page provides a more comprehensive list of treatment of key insurance elements.

The insured crop

Non-dehiscent varieties of sesame adapted for mechanical harvesting are the only varieties insurable. The insured crop and the production to count are the clean dry sesame seed. Production and yield data must be recorded on the basis of the pounds of clean dry sesame seed paid for by the processor.

Multiple base contract prices in a unit

If there are multiple base contract prices within the same unit, each is considered a separate price election that will be multiplied by the number of insurable acres under the applicable processor contract. These amounts are then totaled to determine the premium, liability and indemnity.

The main way multiple contract prices could arise is if the offer by the processor changes over time. Contracting can begin as early as the prior fall. By spring a processor might have to adjust the offered contract price to attract acreage or to better reflect conditions in the market for sesame seed. Currently there is only one processor, Sesaco, but others may emerge as the industry expands. Then a grower might have contracts with multiple processors.

Planting

Late and prevented planting provisions are not applicable. Replanting is required but there are no replanting payments. Replanting costs are low, as Sesaco makes seed available at half price, i.e. $5-10 per acre.

Yield limitations

Cups apply but yield floors do not.

5.3 Summary

In most respects, sesame is treated the same as other major field crops grown in the region. The important differences arise out of the definitions in the Crop Provisions of the insured crop and the reliance on a contract with a processor.

CIH Procedure Comparison & Reference Guide

APH (MPCI)	Sesame	CIH References
Production Reports by Unit (Basic or Optional)	Yes	Section 13 A & Exhibit 13
Optional Unit Determination	Yes	Section 10 B
Enterprise or Whole Farm Units	No	Sections 10 C and 10 D
Replanting	Yes, but no payment is made to grower	Section 9 A
Late Planting	No	Section 9 B
Prevented Planting	No	Section 9 C
Separate APH by P/T/V	Yes by Practice and Type No by Variety	Section 15 C
Separate APH by Map Area	No (No T-Yield Maps)	Section 15 C
T-Yields	Yes	Section 15 B
Variable T-Yield	Yes	Section 15 A(2)
Assigned Yields	Yes	Section 13 B(2)(b)
Zero Planted Acres	Yes	Section 13 B(4)
Yield Descriptors	Yes	Exhibit 13 F
New Producer Procedures	Yes	Section 15 E
Cups and Yield Floors	Yes (Cups), No (Yield floors)	Section 15 D
Exclude High-Risk Land	No	Section 4 B
Separate Instructions by Crop	Yes (these Guidelines)	NA
Added Land	Yes	Section 15 I
Production Reporting Date	Yes	Section 3 & Exhibit 1
Multipurpose Production and Yield Worksheet	No	Exhibit 15 A
APH Yield Adjustment	Yes (except no yield floors)	Section 17

SECTION 6: LOSS ADJUSTMENT STANDARDS HANDBOOK

6.1 Introduction

The Sesame Training Handbook is intended to familiarize crop insurance adjusters with the loss adjustment procedures and standards specifically for the sesame seed plant. It does not replace any of the procedures or modify any provisions contained in the pilot insurance policy. Adjusters should understand the content and provisions of the following:

- Common Crop Insurance Policy;
- Sesame Pilot Crop Provisions;
- Crop Insurance Handbook;
- Loss Adjustment Manual;
- Actuarial Documents; and
- Catastrophic Risk Protection Endorsement (as applicable).

The Loss Adjustment Standards Handbook (LASH) identifies the crop-specific procedural requirements for adjusting MPCI losses under the Sesame Pilot Crop Provisions. The purpose of the LASH is to assist the adjuster in understanding the nature of the sesame crop, the choice of adjustment method, and the procedures for accurately completing the Appraisal and Production Worksheets.

6.2 Learning Objectives

In this section, you will:

- ✓ Determine when an appraisal is needed.
- ✓ Understand the different growth stages of sesame.
- ✓ Recognize the different sesame phenotypes.
- ✓ Determine the appropriate appraisal method and production counting method to be used.
- ✓ Acquire a general understanding of how to complete the Loss Adjustment Appraisal Worksheet and Production Worksheet.

6.3 What's different about sesame?

The sesame plant is a survivor. The biggest challenge, particularly for new growers, is getting a stand up. The seed is small and needs to be planted at the right depth, and in sufficient numbers that the seeds collectively help each other push up through the surface. The plant develops a very deep root system, so provided that there is enough surface moisture for the seedling to connect with the subsoil moisture, the plant will usually grow well unless subsoil moisture is particularly short. The major perils for sesame are drought and hail, in that order.

The challenge in loss appraisal for sesame arises from two factors: the length of the reproductive phase, which can be as long as seven weeks, and the ability of the plant to recover from damage through regrowth. The plant starts flowering from the bottom up, as the main stem, and or branches, are still developing. Hail damage early in the reproductive phase will have the appraiser looking at a plant on which a high proportion of the fruiting nodes have not yet appeared. This makes calculation of potential yield challenging. Moreover, if the base nodes are undamaged, the plant will usually put out new branches and often eventually produce a normal yield.

6.4 Insurance Contract Information

The insured crop and insurable acreage are defined in the Sesame Pilot Crop Provisions. Refer to the Basic Provisions, the Sesame Pilot Crop Provisions, and the Special Provisions for a complete list of insurability requirements.

The following provisions are not insurable if the grower purchased catastrophic coverage:

1. Optional Units.
2. Written Agreements (also not applicable to buy-up coverage).
3. Hail and Fire Exclusion Provisions
4. High Risk Land Exclusion

6.5 Sesame Appraisals

Circumstances that require an appraisal include (but are not limited to) the following: when the insured files a notice of damage or loss, when the insured chooses not to harvest the acreage, or when verifiable production records will not be available.

The Basic Provisions require that insureds file a notice of damage or loss within 72 hours and not later than 15 days after the end of the insurance period. The Sesame Crop Provisions state that any representative samples that the insurer requires be left must be at least 10 feet wide and extend the entire length of each field in the unit. The samples must not be harvested or destroyed until the earlier of inspection by the insurer or 15 days after harvest of the balance of the unit is completed.

Selecting Representative Samples

There are four appraisal methods that are described in detail below. For all four, the minimum number of representative samples required for each field or subfield is three for 10.0 acres or less, and one additional for each additional 40 acres.

For the stand reduction, plant damage, and Capsule Count Methods, one representative sample is equal to 1/1000 of an acre and a table is provided that shows sample row length depending on row width. For example, with 15 inch spacing, the sample row length is 34.8 feet, while with 36 inch spacing it is 14.5 feet.

For the Harvested Production Method, one sample is the calculated area harvested by machine in each representative sample area. The areas should be wheel measured and not measured by an acreage monitor.

Stages of Growth

Sesame has four major growth phases: **Vegetative, Reproductive, Ripening, and Drying.**

For the purposes of appraisal, the key points in the growth of the sesame plant are the **appearance of buds** in the pre-reproductive stage and the **end of the reproductive phase** when flowering ends.

Sesame produces flowers in the leaf axil (where the upper base of the petiole of the leaf joins the stem). The flowers have five petals that join to form a tubular shaped corolla that is about 1 to1.5 inches long. The flowers start as yellowish green in color and are considered buds until the day of pollination when they turn whitish to purple. One of the petals is longer, and the extra growth is known as a lip. The lip folds over the opening of the flower until the day the flower releases its pollen. The corolla drops at the end of the day, but the ovary (which will form the capsule and seed) stays on the plant. There may be flower abortion when the entire flower falls off the plant, but the dropping of the corolla will still allow the formation of a capsule.

Each leaf emerges from the stem at a node. In many species there is a distinct distance along the stem between leaves. In most sesame lines, the leaves are opposite with a pair of leaves forming on opposite sides of the stem with a minimal distance between the leaves. The next set of leaves rotates 90 degrees and are again on opposite sides of the stem. Some of the sesame appraisal methods count node pairs. This is synonymous with counting pairs of leaves and later pairs of capsules in leaf axils.

The first key definition is the start of the pre-reproductive stage when buds are visible without manually opening the growing tip. Technically, the bud can be seen with a hand lens after the 4^{th} to 6^{th} (variety dependent) pair of leaves forms.

The second key definition is **flower termination** time which is **when 90% of the plants do not have open whitish flowers on the main stem**. At this point, many of the plants may still have very small yellowish green buds, but these buds rarely make flowers that will result in capsules and seeds.

In drought years, a late rain can induce regrowth. Because of the lack of moisture during the drought, the bottom leaves will have dropped letting light into the lower leaf axils. Branches will develop at those points and they will flower and produce capsules. If there are no flowers at the top of the main stem, the field should be considered at flower termination. The capsules on the regrowth make little seed and it is offset by the seed lost during the delay of the field drying down.

Sesame is an indeterminate species which means that it will continue to flower as long as there is adequate moisture, fertility, and heat. Sesame is a summer crop with the latter phases coming in the fall when there is a drop in temperatures. As a result, sesame appears to be determinate.

The four major phases are described in the following table. The phases are defined so that the appraiser can determine what appraisal methods can be used.

The phase in the field may vary, e.g., low parts of the field will flower longer. If there are significant differences, the field may have to be divided into sub-fields.

The nominal number of days for each phase is provided as a general guideline. The days are expressed in days after planting (DAP). The nominal number of days for each stage is expressed in weeks. The actual number of days will depend on variety, amount of rainfall, amount of fertility, and temperature variation from normal temperatures.

PHASE/STAGE	DURATION	NARRATIVE
VEGETATIVE PHASE	0-40 DAP	The plants primarily develop stems and leaves in order to establish a photosynthetic base to produce seed.
Germination stage	Weeks: 1	Emerges 3 to 7 days after planting depending on soil temperatures and planting depth. Since sesame is a small seeded plant, the initial plants are much smaller than many other crops that are appraised. Sesame self-thins, and thus the number of plants per foot at the emergence stage is higher than the final number of plants at harvest.
		End point: When the seedlings emerge.
Seedling stage	Weeks: 3	The plants grow slowly as the plants are putting down deep roots to follow the moisture.
		End point: When the third pair of true leaves are the same length as the second pair of true leaves.
Juvenile stage	Weeks: 1	Dramatic surge in growth period. During this phase, the stem and branches are developing nodes which will contain the flower buds. The leaves increase in size from bottom to top until the 5th or 6th node pair when they will start to decrease in size primarily in leaf blade width and petiole length. The stems are succulent and can be damaged by large hail.
		End point: When the first yellowish green buds appear.

Pre-reproductive stage	Weeks: 1	From this point until the late bloom stage, the rate of growth is about the same. Immature buds can be seen without pushing open the new leaves on the growing point. These buds are yellowish green and the lip covers the opening at the tip of the flower. This stage indicates that the reproductive phase is imminent.
		End point: When 50% of the plants have at least one whitish open flower.
REPRODUCTIVE PHASE	41-80 DAP	The plant continues developing stems and leaves, but the distance between the leaves and the size of the leaves are reduced. The plants make flowers and capsules and start filling the seed.
Early bloom stage	Weeks: 1	The first flowers usually abort, and the first capsules normally form on the 4^{th} to 6^{th} node pair from the ground.
		End point: 5 node pairs of capsules.
Mid bloom stage	Weeks: 3-4	The plants bloom profusely as the flowers appear on the next higher stem node. In single capsule lines, 1-4 flowers will open on each growing point each day, with fewer flowers on the branches. In triple capsule lines, 1-9 flowers will open. About 70-75% of the flowers appear between the 2^{nd} and 3^{rd} week of bloom. Seed capsules grow rapidly, but it takes 25-40 days for the seed to fill and mature with the last capsules maturing faster.
		End point: Branches and minor plants stop flowering.
Late bloom stage	Weeks: 1	The number of flowers in the field is reduced, and there are fewer open flowers on the main stem. In a drought, the field can appear to be at this stage, and with no rain will proceed to ripening. However, with adequate rain can revert to the mid bloom stage.
		End point: Flower termination - 90% of plants do not have open whitish flowers.
RIPENING PHASE	81-105 DAP	The reproductive and ripening phases actually overlap in that older capsules at the base are filling while there are still flowers at the top of the plant. The ripening phase ends at physiological maturity when the seeds in the capsules three/fourths of the way up the capsule zone turn from a white color to a darker color (ranging from light buff to black). Early cold weather or an early frost will not damage seed yield after physiological maturity. A hard freeze may damage the seed and cause oil damage. Plants begin to self defoliate from the base as lower capsules mature.
		End point: Physiological maturity.

DRYING PHASE	106-135 DAP	Seeds mature to the top of the plant and capsules begin to turn brown and open at the tip. Drying patterns differ with most starting in the middle of the capsule zone and going in both directions. As the capsules dry, the stems will dry. Once the seed begins losing moisture, it is less vulnerable to a hard freeze. This is the most difficult stage to determine in a field because there are so many differences. The edges of the field and lower (generally higher moisture) parts of the field dry down slower. Hills where the rainfall does not accumulate dry down faster with increased slope. On the other hand in a frost or freeze, cold air will settle in lower areas and cause those areas to dry down faster. Higher plant populations will dry down faster than lower plant populations due to thinner stems in the former.
Full maturity stage	Weeks: 1	All seed finishes filling. Although technically this stage ends when all the seed is mature, pragmatically, it ends when the seeds in the capsules two node pairs from the top are mature. The top capsules contribute little to yield.
		End point: All seed mature.
Initial drydown stage	Weeks: 2	Capsules begin to turn brown and open at the tip.
		End point: First dry capsules.
Late drydown stage	Weeks: 2	Once the seed begins losing moisture, it is less vulnerable to a hard freeze.
		End point: Full dry down of plants to the point where a combine can recover the seed at less than 6% moisture.

Sesame Phenotypes

A **phenotype** is any observable characteristic or trait of an organism, such as its morphology, development, biochemical or physiological properties, or behavior. Phenotypes result from the expression of an organism's genes as well as the influence of environmental factors and possible interactions between the two.

The **genotype** of an organism is the inherited instructions it carries within its genetic code. Not all organisms with the same genotype look or act the same way because appearance and behavior are modified by environmental and developmental conditions. Similarly, not all organisms that look alike necessarily have the same genotype. There are 4 basic genotypes/phenotypes based on two characters illustrated below: branching and number of capsules per leaf axil. There is a third character that is often used in defining phenotypes: maturity class. Maturity class does not affect appraisals and thus is not included in this document. The variations are as follows:

(a) Single stem with single capsule;

(b) Single stem with triple capsules;

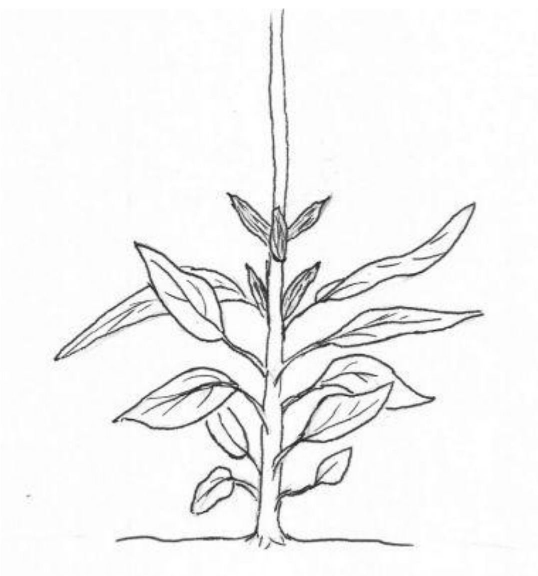
(c) Branched with single capsule; or

(d) Branched with triple capsules.

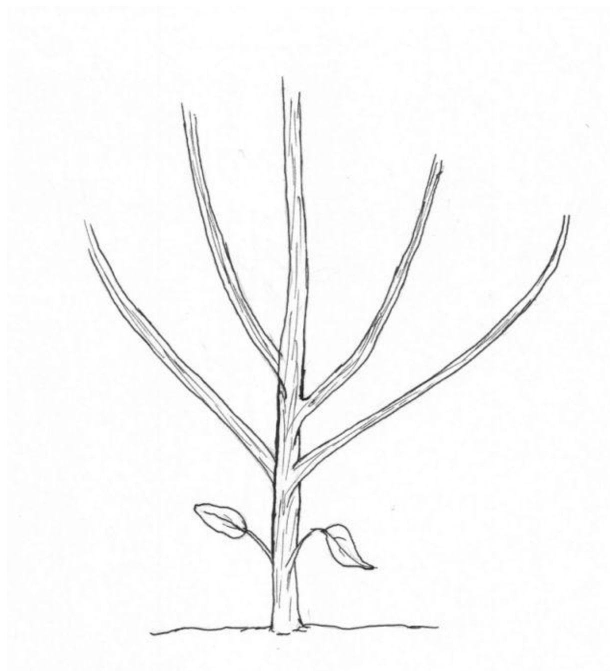
Although the explanations below may seem complicated at first, it takes minimal training to determine the phenotype that will be used in the appraisal tables.

Walking into a field and looking at a limited number of plants at the edge can lead to a misidentification of the phenotype. In low populations, single stem genotypes can put on branches and single capsule genotypes can have a few node pairs with triple capsules. In high populations, branched genotypes can have no branches and triple capsule genotypes can have all single capsules. In low moisture/fertility, branched genotypes may not have branches and triple capsule genotypes may have few node pairs with triple capsules.

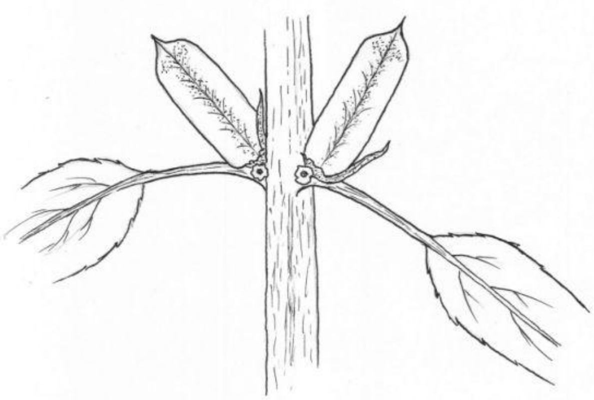
The phenotype may also be evident from the actual variety that was planted if the grower can provide that information. But the appraiser should still confirm that through independent observation.



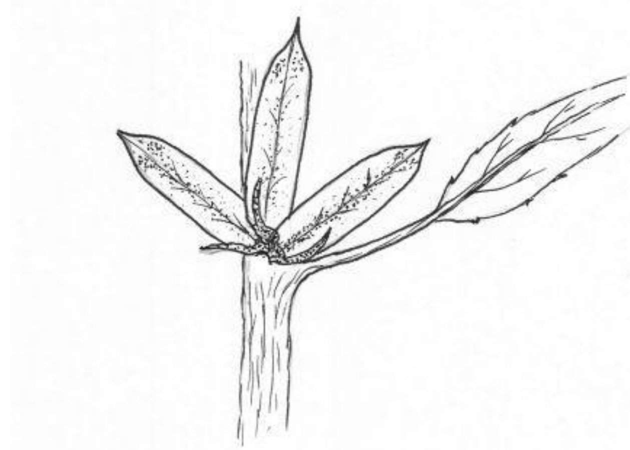
Single stem form will have a dominant mainstem, although occasional branches may develop in thin stands, in skips or if the mainstem node is damaged. Capsules (single or triple) usually begin forming at node 6.



Branched form will develop 4-6 producing stems from basal nodes 2-6. They may be single capsule or triple capsules per node.



Single capsule form showing a capsule at each of a node pair.



Triple capsule form showing only one of the two opposite nodes on a stem. There will be 6 capsules at each node pair.

6.6 Appraisal Methods

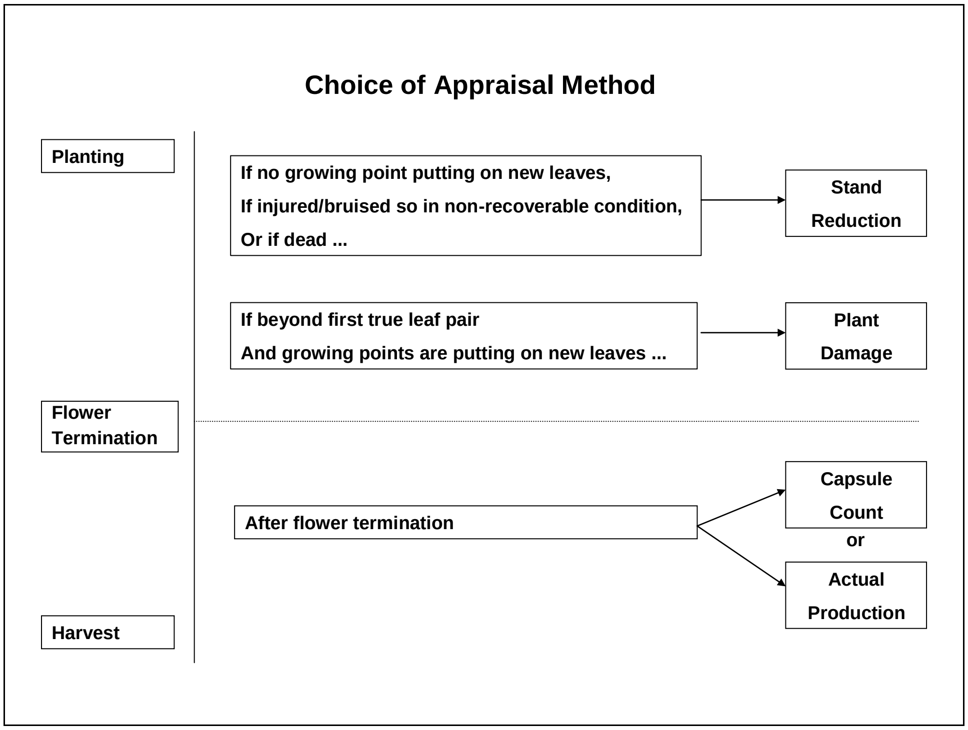
The sesame LASH is modeled on the mustard LASH, but without the complications of having to appraise for replanting. It defines the following four appraisal methods and their periods of applicability, which are based on what the appraiser can observe in the field:

- Stand Reduction Method
- Plant Damage Method
- Capsule Count Method
- Actual Production Method

Appraisal Method…	**Use…**
Stand Reduction Method	For planted acreage with no stand, poor stand, or damaged stand on fields up to flower termination. Regardless of the time of the insurable event, if the data for the appraisal is not determined in the field before flower termination in the late bloom stage, the Capsule Count Method must be used.
Plant Damage Method	On fields between the pre-reproductive stage and flower termination in the late bloom stage. Regardless of the time of the insurable event, if the data for the appraisal is not determined in the field before flower termination, the Capsule Count Method must be used.
Capsule Count Method	On fields after flower termination. It is preferable to wait until the whole field has flower termination to avoid creation of excessive sub-fields.
Harvested Production Method	Use the amount actually harvested from representative areas within a field.

The diagram on the next page illustrates how the appraisal method is determined. Before termination of flowering, it will be either the Stand Reduction Method or the Plant Damage Method. The Stand Reduction Method will most commonly be used in the first few weeks, but may also be appropriate for severe drought conditions later in the season. Due to the sesame plant's regrowth potential, the Plant Damage Method will probably be used more often.

After termination of flowering, there is a choice between the Capsule Count Method and Harvested Production Method. The Harvested Production Method may be useful when there is severe damage just before harvest. The Capsule Count Method allows all the land to be put to another use sooner, e.g. for a winter wheat crop.



6.6.1 Stand Reduction Method

If the reduction in stand is solely due to non-emerged seed due to insufficient soil moisture, do not complete appraisals prior to the time specified in the LAM. Refer to the paragraph in the LAM regarding deferred appraisals and non-emerged seed. For damaged stands, do not complete appraisals until a minimum of 10 days after the date of damage in order to determine which plants will survive.

The most common stand reducer is hail, but there can also be stand reduction due to heavy rains, diseases, or insects. Sesame may recover from heavy rains and from some insect damage to the cotyledons and leaves. Although there can be good recovery from hail, the amount of damage is dependent on the severity of the hail and the stage of growth. Sesame plants may be very susceptible to hail damage if damage occurs up to and including the first pair of true leaves. Sesame plants injured in the seedling stage may have either one to all cotyledons and leaves missing, the seedling beaten down, or the stem broken at the soil line. Plants with both cotyledons and the first true leaf pair broken or torn off, broken or badly bruised stems, and those broken off below the cotyledons rarely survive.

After the first true leaf pair stage and prior to flowering, when the crop is leafing, sesame can be very hardy and generally will recover with varying yield loss. If the growing point is broken off, the plant will typically produce branches from axillary buds at the nodes. The amount of branching is dependent on sunlight striking the tips of the growing point. Broken branches above the first set of leaves on the branch can also form another branch from axillary buds at the base of the leaves. To qualify for stand reduction appraisals, damaged plants must:

- ✓ Not have any growing point putting on new leaves;
- ✓ Be injured and bruised to such an extent they are in a non-recoverable condition; or
- ✓ Be dead.

The appraisal method is simple. First determine the phenotype – single stem or branched. Then for each sample area, count the number of surviving plants in that 1/1,000th of an acre. Table C then gives you the factor for each phenotype to multiply times the approved yield. For example, if there are 16 surviving single stem sesame plants the factor is 0.30, i.e. the unit can be expected to produce 30 percent of the normal yield. For 16 branched plants, the factor is 0.34.

Table C – Yield surviving from sesame stand reduction

	Surviving stands per 1/1000 of an acre																			
Phenotype	≥40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2
Single stem	1.00	.95	.91	.87	.82	.77	.71	.65	.58	.51	.44	.37	.30	.23	.16	.09	.07	.05	.03	.02
Branched	1.00	.99	.95	.91	.86	.81	.75	.69	.62	.55	.48	.41	.34	.27	.20	.13	.11	.09	.07	.06

For odd numbers of plants, use the next higher number in Table C. Thus, if there are 39 or more plants surviving in the sample, one can expect 100% of the normal yield.

The percent surviving yield factor from Table C should be entered in column 15 for each representative sample area. It is then multiplied times the APH yield in column 26 to get the sample yield, which is entered in column 27.

The average for the samples is calculated in the normal manner and entered as the appraised yield in item 36 under Stand Reduction Method.

STAND REDUCTION APPRAISAL METHOD

SESAME APPRAISAL WORKSHEET	1. COMPANY NAME:	2. INSURED'S NAME	3. POLICY NUMBER	4. UNIT NUMBER
	ANY COMPANY	I.M. INSURED	XXXXXXX	00100

For Illustration Purposes Only	5. DATE OF DAMAGE	6. CLAIM NUMBER	7. CROP YEAR	8. PHENOTYPE	9. PHASE/STAGE (DAYS AFTER PLANTING)	10. ACRES	11. PRACTICE
	MAY	XXXXXXXX	YYYY	SINGLE/SINGLE	Vegetative (seedling)	10.0	002

Sample No.	Field ID	Surviving Stand	% Surviving Yield (Table C)	Percent Leaf Loss	% Plants With GP Intact	Factor for Computing % Surviving Yield For GP Intact (Table D)	% Surviving Stand With GP Intact (15 X 17)	Total % Surviving Yield With GP Intact (18X 19)	% Plants With GP Damaged (1.00-17)	Factor for Computing % Surviving Yield For GP Damaged (Table E)	% Surviving Stand With GP Damaged (15 X 21)	Total % Surviving Yield With GP Damaged (22 X 23)	Total % Surviving Yield For Leaf And GP Damage (20 + 24)	APH Yield	Total Pounds Per Acre (15X26)
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	B	6	0.05	NO ENTRY REQUIRED										1000	50
2	B	12	0.16											1000	160
3	B	16	0.30											1000	300
4															
5															
6															

SAMPLE NUMBER	NUMBER OF CAPSULES	AVG SEED WEIGHT PER CAPSULE (grams) (TABLE F)	SAMPLE WEIGHT (grams) (29X30)	CONVERT GRAMS TO POUNDS (31/454)	TOTAL POUNDS PER ACRE (32X1,000)		STAND REDUCTION METHOD
NO ENTRY REQUIRED						34. SUB-TOTAL	510
						35. NUMBER OF SAMPLES	3
						36. Pounds per acre APPRAISAL	170

37. REMARKS

Field B was damaged by drought during the 20 days from planting. Field was appraised 25 days after planting.

This form example does not illustrate all required entry items (e.g., signature, dates, etc.).

6.6.2 Plant Damage Method

The Plant Damage Method is the most challenging for an appraiser. There are three main types of plant damage: defoliation, growing point damage, and capsule damage. Only the first two of these are considered in the Plant Damage Appraisal Method. They are evaluated after first accounting for any stand reduction associated with the plant damage.

Thus this method requires three steps to deal with each of the three factors that determine surviving yield. All of this is accomplished on a single appraisal worksheet.

1. First account for stand reduction.
2. Second, account for defoliation of the remaining plants.
3. Finally, account for the growth or regrowth potential of the remaining plants.

Stand reduction

The steps for stand reduction are the same as under the Stand Reduction Method. The result is that for each representative sample, you have the percent of surviving plants in column 15 of the worksheet.

Defoliation

Recovery from hail depends on the amount of injury to leaves which supply the nutrients for seed development and on the amount of growing season remaining. If injury occurs late in the season, the plant will not have sufficient time to compensate by forming new leaves. Although the sesame stems and capsules at that point are green, they provide few nutrients for seed fill. A completely defoliated plant during flowering will make little seed even though it may have many capsules that have reached their maximum length.

Defoliation is that proportion of the leaves that has been removed or severely injured. Although sesame leaves vary in size, leaf damage should be assessed based on the number of leaves and the percent damage to each leaf. Sesame leaves develop at each node on the main stem and branches. Most sesame varieties have opposite leaves and thus it is easier to count the number of node pairs and multiply by two to determine the number of leaves prior to injury. Do not count cotyledons as leaves. Cotyledons have a rounded tip whereas true leaves have a point. The cotyledons are at the base of the plant, but at some point (variety and sunlight related) they shed.

There is a misconception that the effects of damage caused to leaves formed during the vegetative phase are minimal. The plants are still short at this point, and there will be a substantial leaf mass that will form during the reproductive phase that will hide the amount of damage. In addition, many of these damaged leaves will later self-defoliate. However, there is substantial damage because these lower leaves provide nutrients to the roots and the first buds, and loss of this photosynthesis at this critical phase is not recoverable.

Loss of leaves includes:

- ✓ Partial losses – leaves that have a hole or are torn.
- ✓ Total losses – leaves that are torn off the plant or are broken at the petiole (the stem) and wilting.

The actual procedure is to select ten successive plants within each representative sample. Count the number of leaves on the ten plants by counting the number of node pairs and multiplying by two.

- ✓ Leaves on ***plants*** broken down ***are not*** counted because they were accounted for in stand reduction.
- ✓ Leaves on ***branches*** broken down ***are*** counted.

Then count the number of damaged leaves using the following rules:

- ✓ Leaves torn off or kinked at petiole (stem) = 1 damaged leaf
- ✓ Leaves with > 75% damage = 1 damaged leaf
- ✓ Leaves with 20-75% damage = 0.5 damaged leaf
- ✓ Leaves with < 20% damage = 0 damaged leaf.

Divide the total number of damaged leaves on the 10 plants by the total number of leaves prior to the damage, and place the percentage, expressed in hundredths, in column 16 of the worksheet.

Accounting for growing point (GP) damage

The expected yield on a surviving plant with its growing point intact is higher than the expected yield on a plant with a damaged growing point. Therefore one has to determine the percentage of surviving plants that falls into each of these two categories. Also, the earlier the damage occurs, the greater the final yield potential, so one must take into account the growth stage.

A sesame crop is indeterminate and blooms for an extended period as successive nodes and the associated flower buds form capsules up the stems and branches. The main stem of the plant produces the majority of the seed. If hail or some other peril does not damage the growing point on the main stem, the loss of leaf surface is less damaging than if the growing point is broken. Loss of the growing point on a branch has less effect on final yield because one branch does not contribute a significant percentage of seed and rarely are all growing points on one plant broken.

Hail injury, if severe, may break the growing point of the main stem or branch, and capsule formation on that stem will cease. Within a few days the plant will react by having a secondary growing point begin to form a branch on the main stem or a secondary branch on the branch as long as there is light to the growing tip. Usually there is light at the leaf axils because severe enough hail to break a stem will damage enough leaf surface to allow the light to penetrate to the secondary growing points. When the growing point on the main stem is broken, the plants will direct more nutrients to these secondary growing points. Within a few days, there is rapid growth, but there will be a delay in the start of flowering. Although the plants will produce more capsules, there are fewer capsules produced than if the main stem growing point had not broken off.

There are cases where the growing point on the main stem breaks over, but stays attached to the stem. Within a few days the tip will react and start growing towards light and will usually start to flower and form capsules. Although there will be seeds in these new capsules, the effect on yield is similar to that of a completely broken growing point because the plant does not direct more nutrients to the secondary growing points.

In sesame in high populations, some plants will grow faster than adjacent plants and become dominant plants that will have higher seed production. The minor plants are shaded by the dominant plants and will have less or even no seed production. In some hail storms, the hail will break off the growing point on the dominant plants and leave the minor plants intact. While the dominant plants are recovering, the minor plants will grow through the canopy and become the dominant plants. Thus, in counting the number of plants that have lost the growing point on the main stem, these minor plants should be counted as intact since they can become almost as productive as non-damaged dominant plants.

The methodology requires a determination of the stage of development of the crop in order to get the amount of surviving yield from **Tables D** and **E** in the LASH. The appraiser should refer to the preceding description of the stages of growth for sesame. During the reproductive phase, **Tables D** and **E** are broken into columns based on the number of node pairs on dominant plants in a representative population. Dominant plants are all about the same height as the top of the canopy. These do not include the tallest plants which are off-types that rise above the canopy. Minor plants within the canopy normally have fewer nodes.

In order to count, the node pair must have a capsule formed that is at least one-half inch long. Node pairs that have a capsule missing because of flower or capsule abortion are counted.

In a drought, a crop may be in the late bloom stage and not have 15 node pairs. In this case, use the late bloom stage column.

Therefore, the actual procedure is as follows:

- ✓ Determine the growth stage based on number of node pairs and days after planting and record in item 9 of the worksheet.
- ✓ Count the number of plants in the 1/1,000th acre sample. While doing so, see whether it will be easier to count plants with a damaged growing point on the main stem or the plants that are undamaged.

- ✓ Count the appropriate number and put the percent of plants with GP intact in column 17, in hundredths.
- ✓ Put the percent with GP damaged in column 21. Obviously the two should add up to 1.00.
- ✓ Use Table D for GP intact. Given the percent leaf loss calculated earlier, and the growth stage, enter the "yield remaining" factor from that cell of the table in column 18.
- ✓ Do the same for GP damaged using Table E and enter in column 22.
- ✓ Calculate the surviving stand for each type by multiplying these last two numbers by the factor in column 15 and entering in columns 19 and 23.
- ✓ Calculate the surviving yield for both types by multiplying the surviving stand times the Table D and E factors recorded earlier and entering in columns 20 and 24.
- ✓ Sum up the surviving yield for both types by adding those last two numbers and entering the result in column 25.
- ✓ Multiply column 25 times the APH yield in pounds per acre in column 26 and enter the appraised yield for that sample in column 27.
- ✓ Calculate the average for the samples in the normal manner and enter the appraised yield in item 36 under Plant Damage Method.

Table D – Yield remaining from defoliation with main stem growing point intact.

	Growth stage					
% leaf loss	Pre-reproductive	Early bloom (0-5 node pairs)	Mid bloom (6-10 node pairs)	Mid bloom (11-15 node pairs)	Mid bloom (>15 node pairs)	Late bloom
5	1.00	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00	.97
15	1.00	1.00	1.00	1.00	.97	.94
20	1.00	1.00	1.00	.98	.95	.91
25	1.00	1.00	.98	.96	.92	.88
30	1.00	.99	.97	.94	.90	.85
35	.99	.97	.95	.92	.87	.82
40	.98	.96	.93	.89	.85	.79
45	.97	.95	.92	.87	.82	.76
50	.95	.94	.90	.85	.80	.73
55	.94	.92	.88	.83	.77	.71
60	.93	.91	.87	.81	.74	.68
65	.92	.90	.85	.79	.72	.65
70	.91	.89	.83	.77	.69	.62
75	.90	.87	.81	.75	.67	.59
80	.88	.86	.80	.72	.64	.56
85	.87	.85	.78	.70	.62	.53
90	.86	.84	.76	.68	.59	.50
95	.85	.82	.75	.66	.57	.47
100	.84	.81	.73	.64	.54	.44
	Factor for percent of yield remaining after defoliation loss					

Table E – Yield remaining from defoliation with main stem growing point broken.

	Growth stage					
% leaf loss	Pre-reproductive	Early bloom (0-5 nodes)	Mid bloom (6-10 nodes)	Mid bloom (11-15 nodes)	Mid bloom (>15 nodes)	Late bloom
5	1.00	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00	.95
15	1.00	1.00	1.00	1.00	.95	.90
20	1.00	1.00	1.00	.96	.91	.85
25	1.00	1.00	.96	.92	.86	.80
30	1.00	.97	.93	.87	.82	.75
35	.98	.94	.89	.83	.77	.70
40	.97	.91	.85	.79	.72	.65
45	.95	.88	.82	.75	.68	.60
50	.94	.85	.78	.70	.63	.55
55	.92	.82	.74	.66	.59	.51
60	.91	.79	.71	.62	.54	.46
65	.89	.75	.67	.58	.49	.41
70	.88	.72	.63	.53	.45	.36
75	.86	.69	.59	.49	.40	.31
80	.85	.66	.56	.45	.35	.26
85	.83	.63	.52	.41	.31	.21
90	.82	.60	.48	.36	.26	.16
95	.80	.57	.45	.32	.22	.11
100	.78	.54	.41	.28	.17	.06
	Factor for percent of yield remaining after defoliation loss					

PLANT DAMAGE APPRAISAL METHOD

SESAME APPRAISAL WORKSHEET	1. COMPANY NAME:	2. INSURED'S NAME	3. POLICY NUMBER	4. UNIT NUMBER
	ANY COMPANY	I.M. INSURED	XXXXXXX	00100

For Illustration Purposes Only	5. DATE OF DAMAGE	6. CLAIM NUMBER	7. CROP YEAR	8. PHENOTYPE	9. PHASE/STAGE (DAYS AFTER PLANTING)	10. ACRES	11. PRACTICE
	MMM/DD	XXXXXXXX	YYYY	SINGLE/SINGLE	MID-BLOOM - (8 NP) (54)	20.0	002

Sample No.	Field ID	Surviving Stand	% Surviving Yield (Table C)	Percent Leaf Loss	% Plants With GP Intact	Factor for Computing % Surviving Yield For GP Intact (Table D)	% Surviving Stand With GP Intact (15 X 17)	Total % Surviving Yield With GP Intact (18 X 19)	% Plants With GP Damaged (1.00-17)	Factor for Computing % Surviving Yield For GP Damaged (Table E)	% Surviving Stand With GP Damaged (15 X 21)	Total % Surviving Yield With GP Damaged (22 X 23)	Total % Surviving Yield For Leaf And GP Damage (20 + 24)	APH Yield	Total Pounds Per Acre (25X26)
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	A	28	0.71	0.42	0.73	0.93	0.52	0.48	0.27	0.85	0.19	0.16	0.64	1000	640
2	A	10	0.09	0.51	0.31	0.90	0.03	0.03	0.69	0.78	0.06	0.05	0.08	1000	80
3	A	26	0.65	0.21	0.94	1.00	0.61	0.61	0.06	1.00	0.04	0.04	0.65	1000	650
4	A	22	0.51	0.35	0.80	0.95	0.41	0.39	0.20	0.89	0.10	0.09	0.48	1000	480
5															
6															

SAMPLE NUMBER 28	NUMBER OF CAPSULES 29	AVG SEED WEIGHT PER CAPSULE (grams) (TABLE F) 30	SAMPLE WEIGHT (grams) (29X30 31	CONVERT GRAMS TO POUNDS (31/454) 32	TOTAL POUNDS PER ACRE (32X1,000) 33		PLANT DAMAGE METHOD
NO ENTRY REQUIRED						34. SUB-TOTAL	1,850
						35. NUMBER OF SAMPLES	4
						36. Pounds per acre APPRAISALD	463

37. REMARKS

Field A was damaged by hail 43 days after planting. Field was appraised 54 days after planting.

This form example does not illustrate all required entry items (e.g., signature, dates, etc.).

6.6.3 Capsule Count Method

Capsule damage prior to the end of flowering is not considered in the Plant Damage Method of appraisal in sesame. Since sesame flowers for such an extended time (an average of 40 days), early loss of 100% of the capsules does not equate to 100% loss of production. On the other hand, when a capsule is not lost, but the leaves are lost, it is the equivalent of a loss of a capsule. This loss is accounted for in the loss of leaves in the Plant Damage Method. The amount of later capsule loss is important in the ripening phase and is accounted for in the Capsule Count Method of appraisal.

The amount of seed in a capsule varies due to many factors including variety, environment, plant position, branching style, and capsules per leaf axil. The capsule weight will also vary based on population and available moisture and fertility. Higher populations, less moisture, and/or less fertility will have capsules with less seed weight.

The capsules on the tops of the plant have less seed weight. The highest weights are in the middle of the capsule zone on the main stem. The capsules on branches have less weight. However, having more capsules per plant compensates for the lower weight.

The axillary capsules in a triple capsule line have less seed weight. However, the less weight is compensated by having more capsules per plant. The seed weight in the central capsules is comparable to the seed weight in single capsule lines.

The nature of commercially viable sesame is to have non-dehiscence. This allows the capsules to hold the majority of the seed until the combine harvests the field and yet release the seed in the combine. One of the keys is to have the capsules open as they dry down. Although it is easy to thresh the seed in a combine or plot thresher, it is very time consuming to shell the seeds out of the capsules manually.

Work with sampling yield has shown that taking a sample less than 1/1000 of an acre is not statistically viable. Counting capsules in less than 1/1000 of an acre would not be a fair appraisal and yet counting them is time consuming. However, the counting is more reasonable than manually threshing seed and weighing it or converting volumes to weight.

For this appraisal method, Table F provides an average seed weight per capsule that takes all of this into account and depends only on the plant genotype and the practice (irrigated versus dryland). The table also takes into account an average 7 percent loss in potential yield due to weather during the drying phase and from combine header loss.

Procedure

Identify the first and last plants in the representative sample. Capsules from plants within the sample length are counted even if they bend outside the length of the row. Capsules from plants outside the sample length are not counted even if they bend inside the length of the row.

Count the number of capsules on the main stem and on the branches and enter the number in column 29.

Plants that died from disease or plants that were defoliated in the reproductive phase may not make marketable seed. In fields with hail or disease damage, start with the capsules at the top of the plant and open them to find the first capsule that does not have immature seed. **Immature seed is brownish and flat.** Then count that capsule and the capsules below on the main stem. Repeat the procedure when counting the capsules on the branches. Only count the capsules with seed that is filled out.

Get the average seed weight per capsule from **Table F** and enter it in thousandths in column 30. This weight is in grams.

Determine the total grams per sample by multiplying the number of capsules in column 29 by the average seed weight in column 30. Enter the product in column 31.

Convert grams to pounds by dividing the grams in column 31 by 454, the number of grams in a pound. Enter that number in column 32.

To calculate the pounds per acre, multiply the number in column 32 by 1,000 and place the result in column 33 in whole pounds.

Determine the average of all the samples in the normal fashion and record the result in item 36 under the Capsule Count Method column.

Table F: Seed Weight Per Capsule

	Seed weight per capsule (grams)	
Plant genotype	**Irrigated**	**Non-Irrigated**
Single stem, single capsule	0.192	0.169
Single stem, triple capsule	0.145	0.128
Branched, single capsule	0.185	0.163
Branched, triple capsule	0.122	0.107

CAPSULE COUNT APPRAISAL METHOD

SESAME APPRAISAL WORKSHEET (Capsule count method)	1. COMPANY NAME:	2. INSURED'S NAME	3. POLICY NUMBER	4. UNIT NUMBER
	ANY COMPANY	I.M. INSURED	XXXXXXX	00100

For Illustration Purposes Only	5. DATE OF DAMAGE	6. CLAIM NUMBER	7. CROP YEAR	8. PHENOTYPE	9. PHASE/STAGE (DAYS AFTER PLANTING)	10. ACRES	11. PRACTICE
	MMM/DD	XXXXXXXX	YYYY	BRANCHED/SINGLE	LATE DRYDOWN (135)	25.0	003

Sample No.	Field ID	Original Stand Surviving Stand	% Surviving Yield (Table C)	Percent Leaf Loss	% Plants With GP Intact	Factor for Computing % Surviving Yield For GP Intact (Table D)	% Surviving Stand With GP Intact (15 X 17)	Total % Surviving Yield With GP Intact (18 X 19)	% Plants With GP Damaged (1.00-17)	Factor for Computing % Surviving Yield For GP Damaged (Table E)	% Surviving Stand With GP Damaged (15 X 21)	Total % Surviving Yield With GP Damaged (22 X 23)	Total % Surviving Yield For Leaf And GP Damage (20 + 24)	APH Yield	Total Pounds Per Acre
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	C													1200	
2	C													1200	
3	C													1200	
4	C													1200	
5															
6															

SAMPLE NUMBER 28	NUMBER OF CAPSULES 29	AVG SEED WEIGHT PER CAPSULE (grams) (TABLE F) 30	SAMPLE WEIGHT (grams) (29X30) 31	CONVERT GRAMS TO POUNDS (31/454) 32	TOTAL POUNDS PER ACRE (32X1,000) 33		CAPSULE COUNT METHOD
1	1,701	.185	315	0.693	693	34. SUB-TOTAL	1,882
2	795	.185	147	0.324	324		
3	1,124	.185	208	0.458	458	35. NUMBER OF SAMPLES	4
4	1,000	.185	185	0.407	407		
5						36. Pounds per acre APPRAISAL	471
6							

37. REMARKS

Field C was damaged by hail 80 days after planting. Field was appraised 135 days after planting. Field was irrigated.

This form example does not illustrate all required entry items (e.g., signature, dates, etc.).

6.6.4 Harvested Production Method

In some cases after flower termination the Harvested Production Method may be preferable to the Capsule Count Method but insurance providers and appraisers should be cognizant of the fact that it results in extra costs for the grower due to setup and operation of the harvesting equipment and payment for USDA weighing and private laboratory work on each sample. A full section of sesame requires 19 representative sample areas. The harvest from each sample area must be unloaded and weighed by a USDA weighing station and then have net weight determined by a laboratory.

Procedure

The Sesame Pilot Crop Provisions require that representative sample areas be at least ten feet wide and run the entire length of the field. The area of each representative sample area must be measured with a tape or wheel. Combine acre monitor figures cannot be used. The area of each sample in square feet is recorded in column 14.

The sample areas cannot be combined until dry enough to produce seed with 6% moisture or less. The combine must be cleaned prior to the harvest. The harvest must be weighed by an official USDA weighing station with the results on an official weight ticket with the name of the insured, field ID, and unit number. The moisture should be taken of a representative sample. Samples must be drawn using a USDA approved method.

A representative sample of this harvest must be submitted to a laboratory to determine the net weight of clean dry sesame.

The net weight is computed as follows, with the proportions that are dockage, foreign matter, broken, damaged, or moisture expressed as hundredths:

Calculation of weight 1 (WT1) after removal of dockage:

1 WT1 = gross weight - (gross weight x dockage)

Calculation of weight 2 (WT2) after adjustment for content of foreign matter and broken or damaged seed:

2 WT2 = WT1 - (WT1 x (foreign matter + broken + damaged))

Calculation of net weight at the equivalent of five percent moisture content:

3 Net Weight = WT2 - (WT2 x (moisture - .05)).

Enter the net weight of each sample in pounds in column 15a to the nearest hundredth.

Divide the net weight in column 15a by the number of square feet in column 14 and multiply by 43,560, the number of square feet in an acre, to get pounds per acre. Enter in columns 15b and 27 in whole pounds.

Determine the average of all the samples in the normal fashion and record the result in item 36 under the Harvested Production Method column.

HARVESTED PRODUCTION APPRAISAL METHOD

SESAME APPRAISAL WORKSHEET	1. COMPANY NAME:	2. INSURED'S NAME	3. POLICY NUMBER	4. UNIT NUMBER
	ANY COMPANY	I.M. INSURED	XXXXXXX	00100

For Illustration Purposes Only	5. DATE OF DAMAGE	6. CLAIM NUMBER	7. CROP YEAR	8. PHENOTYPE	9. PHASE/STAGE (DAYS AFTER PLANTING)	10. ACRES	11. PRACTICE
	MMM/DD	XXXXXXXX	YYYY	SINGLE/SINGLE	FULL DRYDOWN (140)	10.0	002

Sample No.	Field ID	Square feet harvested	Total lbs	Total pounds per acre (43,560X15a/14)										APH Yield	Total Pounds Per Acre (15b)
12	13	14	15a	15b										26	27
1	D	7200	19.86	120										1000	120
2	D	6000	20.67	150										1000	150
3	D	12000	30.84	112										1000	112
4															
5															
6															

	HARVESTED PRODUCTION METHOD
34. SUB-TOTAL	382
35. NUMBER OF SAMPLES	3
36. Pounds per acre APPRAISAL	127

37. REMARKS

Field D was damaged by hail 43 days after planting. AIP advised use of harvested production method of appraisal.

This form example does not illustrate all required entry items (e.g., signature, dates, etc.

The Production Worksheet

The procedures for filling out the claim form are almost all the same as for other crops. There are two things to be aware of: how to account for stored sesame, and what to do if a grower has multiple processor contracts with varying prices.

Stored sesame

If a farmer has sesame seed that he has harvested in on-farm storage, the first step is obviously to determine the number of cubic feet of sesame in store and record it in column F of Section II. The conversion factor to use in column G is 36.2 which is derived as follows:

- The standard weight of a bushel of field run sesame is 45 pounds
- One bushel is 2,150.42 cubic inches
- One cubic food is 1,728 cubic inches
- Factor = 1,728 / 2,150.42 * 45 = 36.2.

Multiplying column F times column G gives you the gross weight of the sesame to record in column H. However, the net weight of "clean dry sesame" to record in column I must be based on a laboratory test of a sample from the storage structure.

Multiple processor contracts with varying prices

If the insured has multiple processor contracts with varying base contract prices within the same unit, value the production to count by using the highest base contract price first and then continue in decreasing order to the lowest base contract price, using the amount of production insured at each base contract price.

PRODUCTION WORKSHEET

1. Crop/Code #	2. Unit #	3. Location Description	7. Company / Agency		8. Name of Insured			
Sesame 0396	0001-0001-xx	SE6-140N-50W	ANY COMPANY	ANY AGENCY	I.M. INSURED			
					9. Claim # XXXXXXXX		11. Crop Year YYYY	
					10. Policy # XXXXXX			
					14. Date(s) Notice of Loss	1st MM/DD/YYYY	2nd MM/DD/YYYY	Final MM/DD/YYYY
					15. Companion Policy(s) NONE			

4. Date(s) of Damage	AUG 10	OCT 1			
5. Cause(s) of Damage	HAIL	Freeze			
6. Insured Cause %	60	40			
12. Additional Units	0002-0002-xx	0003-0003-xx			
13. Est. Prod. Per Acre	1,100	1,500			

SECTION I – DETERMINED ACREAGE APPRAISED, PRODUCTION AND ADJUSTMENTS

A. ACTUARIAL / **B. POTENTIAL YIELD**

16. Field ID	17. Multi-Crop Code	18. Reported Acres	19. Determined Acres	20. Interest or Share	21. Risk	22. Type	23. Class	24. Sub-Class	25. Intended Use	26. Irr Practice	27. Cropping Practice	28. Organic Practice	29. Stage	30. Use of Acreage	31. Appraised Potential	32a. Moisture % / 32b. Factor	33. Shell %, Factor, or Value	34. Production Pre QA	35. Quality Factor	36. Production Post QA	37. Uninsured Causes	38. Total to Count
A	NS		20.0	1.000		462					003		UH	UH	463			9,260		9,260		9,260
B	NS	13.0	12.5	1.000		462					003		H	H								
C	NS		25.0	1.000		462					002		UH	UH	471			11,775		11,775		11,775
39. TOTAL			57.5														42. TOTALS	21,035		21,035		21,035

40. Quality: TW ☐ KD ☐ Aflatoxin ☐ Vomitoxin ☐ Fumonisin ☐ Garlicky ☐ Dark Roast ☐ Sclerotinia ☐ Ergoty ☐ CoFo ☐ Other ☒ None ☐

41. Mycotoxins exceed FDA, State or other health organization maximum limits? Yes ☐

NARRATIVE (If more space is needed, attach a Special Report): Field A and C from FSA permanent field measurements. Field B was wheel measured. 12,000 lbs harvested.

SECTION II – DETERMINED HARVESTED PRODUCTION

43. Date Harvest Completed	44. Damage similar to other farms in the area?	45. Assignment of Indemnity	46. Transfer of Right to Indemnity?
MM/DD/YYYY	Yes X No	Yes No X	Yes No X

A. MEASUREMENTS / **B. GROSS PRODUCTION** / **C. ADJUSTMENTS TO HARVESTED PRODUCTION**

47a. Share / 47b. Field ID	48. Multi-Crop Code	49. Length or Diameter	50. Width	51. Depth	52. Deduc-tion	53. Net Cubic Feet	54. Conver-sion Factor	55. Gross Prod.	56. ~~Ctns~~ ~~Bu Ton~~ (Lbs.) ~~CWT~~	57. Shell/ Sugar Factor	58a. FM% / 58b. Factor	59a. Moisture % / 59b. Factor	60a. Test WT / 60b. Factor	61. Adjusted Production	62. Prod. Not to Count	63. Production Pre-QA	64a. Value / 64b. Mkt. Price	65. Quality Factor	66. Production to Count
	NS	ACME ELEVATOR Any Town, Any State							12,000					12,000		12,000	0.28	1.000	12,000

67. TOTAL	12,000	68. Section II Total	12,000
		69. Section I Total	21,035
		70. Unit Total	33,035
		71. Allocated Prod.	
		72. Total APH Prod.	

This form example does not illustrate all required entry items (e.g., signatures, dates, etc.).

SECTION 7: FREQUENTLY ASKED QUESTIONS

Q: What is the actual insured crop?

A: The insured crop is clean dry sesame seed from non-dehiscent sesame varieties that is grown for food or industrial use. It is not the field-run crop as it comes out of the harvester. The amount of clean dry sesame is determined by a laboratory after adjustment for dockage, foreign matter, broken or damaged seed, and moisture content.

Q: Is your APH yield also in terms of "clean dry sesame seed".

A: Yes. It is based on the yields reported to you by the processor on settlement sheets. The T-yields are also in terms of clean dry sesame.

Q: What is sesame like as a crop?

A: You use your normal planters, combines and other farm equipment. The sesame plant is a survivor. The biggest challenge is getting a stand up because the seeds are very small. Once it is up, the plant develops a deep root system and is very drought tolerant, requiring half to two-thirds the water that cotton needs. The major perils for sesame are drought and hail, in that order.

Q: What are the keys to producing sesame successfully?

A: Good farming practice is required to be eligible for insurance. This means soil temperatures in the morning have to be at least 70 degrees the day of planting. You have to plant at least 2.5 pounds of seed per acre. And you cannot plant sesame on the same ground where sesame was produced the prior year. Field staff for processors work with new growers to make sure they set equipment properly.

Q: Are sesame varieties pretty standard?

A: Sesame can be either single-stemmed or branched, and have either single capsules at nodes or triple capsules. There can be considerable variation within any individual field depending on row width, planting density, etc., so the adjuster has to look at a sufficient number of plants to determine the predominant type. Appraisal results depend on the adjuster recognizing the stem form and number of capsules.

Q: Why do you have to have a contract with a processor to get insurance?

A: There is no established marketing channel for field-run sesame that a grower would expect to deliver to an elevator. Processors have the specialized equipment needed to clean the seed to the degree of purity required by buyers. The contract is also the basis for establishing the price guarantee, as there is no publicly quoted market price for sesame.

Q: What kind of optional units are permitted?

A: The language in the Basic Provisions that applies for cotton, wheat or sorghum applies to sesame seed. In addition, optional units are permitted by type, and the two types in the pilot are white sesame and black sesame. The vast majority of production during the pilot is expected to be white sesame.

Q: What price is used to set the insurance guarantee?

A: There is no publicly quoted cash or futures price for sesame, unlike for corn and many other crops. The contract price, in cents per pound, is used to determine the guarantee, subject to the price election percentage chosen by the producer. For example, if the contract price is 25 cents per pound and the producer elects to cover 80 percent of that, the price election would be 20 cents.

Q: How is your insurable acreage determined?

A: If you have an acreage contract, it is the lesser of planted acreage or the maximum acreage covered under the contract. So if the contract is for 400 acres, plus or minus 10%, the maximum under the contract is 440 acres. If you have a production contract, it is the lesser of planted acres or the production specified in the contract divided by your approved yield.

Q: If you have contracts to grow sesame for two different companies, are those separate units?

A: Not necessarily. A basic unit is still all the insured acreage the grower plants to sesame in the county. The rules about units spelled out in the Basic Provisions for the Combo mult-peril insurance policy apply, and may permit the two contracts to be treated as separate units.

Q: Can sesame be included in a whole farm or enterprise unit?

A: No.

Q: What happens if you have contracts with two different contract prices?

A: First, if there are multiple contract prices within the same unit, each is considered a separate price election that is multiplied by the relevant production guarantee. In calculating any indemnity, the highest contract price is first applied to any production to count, followed in decreasing order by the other contract prices.

Q: What happens in a replanting situation?

A: The grower is required to replant if it is before the final planting date and it is practical to replant. Sesame is a quick-maturing crop – with about 140 days from planting to harvest – so there is normally plenty of time to make a crop. There is no replanting payment because replanting costs are low. Seed for replanting is typically available at a reduced price that amounts to only $5-10 per acre.

Q: Do late planting or prevented planting provisions apply to sesame?

A: No.

Q: What are the main differences between insurance for sesame and insurance for cotton, wheat and milo?

A: There are three main differences. First, you have to have a contract with a processor. Second, the guarantee is based on the contract price. Finally, the insured crop is not the field run commodity as it comes out of the field. It is "clean dry sesame seed". One way that the sesame plant is like cotton is that it is indeterminate. Since sesame has a long reproductive phase, it has the ability to recover from early damage through regrowth.

Q: What are the key insurance program dates?

A: Sales closing is January 31 in southern Texas and March 15 in the pilot counties further north. The final planting date varies between June 15 and June 30. The date for end of insurance is December 10.

Q: Some appraisal methods are used before flower termination and some after. How do you decide when flower termination has occurred?

A: Flower termination is defined as when 90% of plants no longer have any open flowers. Before flower termination you can use the stand reduction or plant damage methods. After flower termination, you use the capsule count or harvested production methods,

Q: When should the adjuster appraise any damage?

A: Before flower termination the adjuster must wait ten days in order to see which plants have survived and the degree of any recovery. After flower termination, appraisals can be done immediately.

Q: With the plant damage method, how do you calculate the expected yield?

A: There are three components. First you account for stand reduction. (If there are 39 or more undamaged plants remaining in a 1/1000th acre sample, you can expect to make your approved yield.) Second, you account for defoliation, following the rules in the LASH. The third component is determining the percent of main stem growing points that are damaged. With these three factors, the tables and appraisal worksheet generate production to count.

Q: How does the capsule count method work?

A: The method is tedious but accurate. The adjuster counts all the mature capsules in the sample row length. (Capsules at the top may have immature seed that is recognizable because it is brownish and flat). Average seed weight per capsule depends on the plant genotype and is provided in appendix Table F in the LASH.

Q: What are the pluses and minuses of the harvested production method?

A: It is potentially the most accurate because it is based on actually harvesting the crop. On the downside, the harvested quantities from each sample area can be small in relation to the normal capacity of the equipment being used, the grower has to clean out the harvester between each sample area, and a laboratory test is required for each sample.

SECTION 8: AGENTS' AND ADJUSTERS' CERTIFICATION TEST

1. The insured crop is ________.
a. Field run sesame
b. Any sesame
c. Clean dry sesame seed as determined by a laboratory test

2. Which of the following is required in order for sesame to be insurable?
a. It must be a non-dehiscent variety adapted for mechanical harvesting
b. It must be grown under a contract with a processor
c. It cannot be planted where sesame was grown the prior year
d. It must be planted when soil temperature is above a specified threshold
e. The grower must use at least a specified number of pounds of seed per acre
f. All of the above

3. The maximum price election is ________.
a. RMA's published reference price
b. The market price on the sales closing date
c. The price in the grower's contract with a processor

4. Optional units are available by _____.
a. Practice
b. Type
c. Both of the above

5. Which of the following is available under the pilot program?
a. Prevented planting
b. Late planting
c. Replanting payments
d. None of the above

6. A grower's Actual Production History database can use his past yields of field-run sesame seed.
a. True
b. False

7. The end of the insurance period is ______.
a. November 10
b. December 10
c. January 10

d. None of the above

8. How many appraisal methods are permitted for sesame?

a. One c. Three

b. Two d. Four

9. What is the definition of flower termination?

a. When 80% of the plants have no visible flowers

b. When 90% of the plants have no visible flowers

c. When there are no mature plants with visible flowers

d. None of the above

10. When damage occurs prior to flower termination, the adjuster must wait how many days before conducting an appraisal?

a. One day

b. Three days

c. Ten days

d. Fourteen days

11. Which appraisal method should not be used after flower termination?

a. Harvested production method

b. Capsule count method

c. Plant damage method

12. Which of the following can affect the calculation of production to count?

a. Whether the sesame is single-stem or branched

b. Whether the sesame is the single capsule form or triple capsule

c. The growth stage at which plant damage occurs

d. All of the above

13. For the capsule count method, you count ________.

a. Only the capsules with mature seed

b. All capsules on the main stem and branches

14. For the harvested production method, each representative sample area must be _______.

a. At least 100 square feet

b. At least 1,000 square feet

c. At least 10 feet wide and the length of the field

d. None of the above

15. In calculating any indemnity, if there are multiple processor contracts with varying prices, you ________.

a. Treat each contract as a separate unit

b. Use a weighted average of the contract prices

c. Start with the highest base contract price and work down

8.1 Sesame Certification Test Answers

1. c
2. f
3. c
4. c
5. d
6. b
7. b
8. d
9. b
10 c
11. c
12. d
13. a
14. c
15. c