

Purpose:

This document is intended to summarize the key features of the new sweetpotato pilot crop insurance product. This summary is based on program components that have been derived from data assessments and loss experience information.

Basis of the Guarantee: Field pack Production

The APH insurance plan will be the basis for determining the guarantee. The definition of yield will be the quantity of field pack production that meets the requirements of the U.S. No. 1 Grade with regard to size, as well as roots that would classify as U.S. No. 2 Grade on the basis of physical characteristics, plus those roots heavier than thirty-six ounces (commonly called Jumbos). Appearance and other quality attributes will not be considered. Field pack is the quantity that is recovered from the field and placed into a bin. This is the preferred basis because producers typically will harvest these roots, whereas the roots that do not qualify for this classification may or may not be recovered, depending on market prices.

Individual producer production history data will be used with long term NASS data in North Carolina for rating purposes to evaluate the risk inherent in field pack production for each county or region. In Louisiana, Type 15 data, which has been sorted to include only those producers who would qualify for the program under the proposed “gatekeeping” procedures and long term NASS data, will be used for rating purposes. The Louisiana Sweetpotato Association and the North Carolina Sweetpotato Commission have collected producer level data. Upon completion of the data collection process, information was transferred to Watts and Associates for evaluation. Louisiana has not provided sufficient data for rating purposes, but with the appropriate sorting measures in place, the Type 15 data has been deemed to be of sufficient quality to serve as a proxy for individual producer records.

Calendar of Implementation:

To meet the requirements imposed by the FCIC Board of Directors, the field pack production component of the Sweetpotato New Pilot Program must be initiated for the 2005 crop year. All developmental work must be drafted by June 15, 2004 and submitted to RMA by July 12, 2004 so that the proposal may be acted upon in accordance with FCIC procedures. If feasible, the storage component must be completed and prepared for pilot initiation in the 2006 crop year. It is planned that RMA and the Contractor will monitor and adjust the Sweetpotato New Pilot Program throughout the term of the pilot.

Unit of Exposure:

Field pack production will be measured per land acre.

Types:

Only sweetpotatoes of the Beauregard variety, planted for the purpose of harvesting for fresh market consumption, will be insurable. Sweetpotatoes planted for processing will not be insurable due to the small acreage of such sweetpotatoes. The majority of processed sweetpotatoes are culls, removed after the roots are in a storage facility or collected in separate bins apart from production, intended for sale into the fresh market at the time of harvest.

Coverage Levels:

In accordance with the Act, coverage levels from catastrophic (CAT) through 75% will be available. Due to issues related to the current Sweetpotato New Pilot Program, coverage levels above 75% will not be offered initially.

Practices:

Irrigated and non-irrigated practices will be insurable. Premium rates and reference yields will be the same for both practices (as is done in the current pilot). The 1997 Census of Agriculture identifies very limited sweetpotato acreage grown on irrigated land in the eastern and southeastern United States. There is insufficient irrigated sweetpotato acreage to justify separate classification for irrigated acreage.

Insurance Dates:

Sales closing, final planting, the calendar date for the end of the insurance period, and other dates will be the same as the present pilot. An additional date, the “maturity” date, before which appraisals may not take place, will be included as well. This maturity date will be used to reduce the instance of adjustment of a crop prior to the most appropriate assessment time period. Listening sessions have revealed that a date not less than 105 days after completion of planting is appropriate for the Louisiana, Central North Carolina, and Columbus/Horry pilot regions.

Initial Insurability Requirements:

Growing sweetpotatoes is more difficult than growing many other crops. In many cases, the crop insurance program limits the eligibility of persons to purchase the product until they have gained the prerequisite experience. This is especially true of vegetable crops. We propose that the new pilot will modify the existing provision to read, “The potential insured person must have grown sweetpotatoes for commercial sale in not less than three of the previous five years and must submit copies of acreage and production data for all years for which data is provided.” A copy of all relevant APH records is proposed to be sent to the verifier for every insured producer rather than following the normal APH random spot checks.

Eligible Land:

The RMA Regional Offices in Raleigh, North Carolina, Jackson, Mississippi, and Valdosta, GA are in the process of developing FCI-33 maps for the pilot regions. These designations will be used to identify lands poorly suited for production of sweetpotatoes. In addition, land identified as regulated or quarantined under Witchgrass eradication or weevil infestation will be subject to limits on insurability.

A current provision limits insured acreage to 110% of the highest number of insurable acres in any of the previous three crop years, which is in place in the current APH program. We propose this rule be extended into the Sweetpotato New Pilot Program.

Pilot Parishes/Counties:

The proposed pilot areas are broken into three distinct pilot regions. The contractor recommended two risk regions in the original submission, including central North Carolina and two concentrated areas forming one risk region in Louisiana. Upon review, the FCIC Board required the addition of a third risk region which includes Columbus County, North Carolina,

and Horry County, South Carolina. Therefore, the three risk regions are now Louisiana Pilot region, Central North Carolina Pilot region and Columbus/Horry Pilot Region. The regions contain select parishes/counties from states of Louisiana, North Carolina, and South Carolina. The Louisiana pilot region is made up of the proposed parishes of Acadia, Avoyelles, Evangeline, Franklin, Morehouse, Richland, St. Landry, and West Carroll. The Central North Carolina pilot region is made up of the counties of Cumberland, Duplin, Nash, Edgecombe, Greene, Harnett, Johnston, Lenoir, Sampson, Wake, Wayne, and Wilson. The Columbus/Horry pilot region is made up of Columbus County, North Carolina and Horry County, South Carolina.

The first two pilot regions were selected by the Contractor to be recommended for inclusion in the Sweetpotato New Pilot Program because they represent geographically contiguous dense production areas. Further, offering high levels of service is significantly more difficult and costly for insurance companies in widely dispersed parishes/counties. Geographic density of the recommended pilot counties will allow insurance companies to develop a concentrated critical mass of well trained and skilled personal with specific knowledge of sweetpotatoes in the pilot region. As a result, the producers who purchase the insurance are likely to receive more timely and accurate loss adjustment and more knowledgeable customer service. The insurance and reinsurance firms that offer these policies will benefit from more manageable administrative costs in the consolidated recommended pilot regions. The Contractor believes the geographically contiguous pilot regions will positively contribute to the success of the Sweetpotato New Pilot Program and its eventual expansion to other production areas throughout the United States. The third pilot region (Columbus/Horry) has been included at the direction of the FCIC Board of Directors.

Insured Causes of Loss:

The currently defined causes of insurable losses will be continued. In the Sweetpotato New Pilot Program, a differentiation of damage due to insurable causes and non-insurable causes will be utilized during the loss adjustment process. Losses to non-insured causes are not eligible for indemnification.

Additional Coverage:

Late planting and prevented planting coverage will not be offered, as is consistent with the present pilot. Only basic units will be insurable.

Pricing:

Consistent with the Act, the price election will represent an estimate of the expected market price for sweetpotatoes at the point in the marketing channel that is most consistent with the definition of the insured crop. The intent is to measure at a point of sale in the field. Estimated costs of transportation and other values added between the field and point of first delivery will not be considered as valid costs for the purpose of establishing the pricing.

Differential pricing for harvested and unharvested acreage will be examined. The unharvested price would be calculated by subtracting an estimated per unit harvest cost estimate from the pricing. This is done to reduce the insurance-based incentives that may encourage failure to harvest in a marginal production year. Pricing data from the Agricultural Marketing Service (AMS) has been determined to be the most appropriate basis for the calculations resulting in a

harvested basis field pack production pricing. Production expense budgets from Louisiana State University and North Carolina State University are used to determine estimated harvest costs. While the Louisiana pilot region will use the Louisiana prices, both the Central North Carolina and Columbus/Horry pilot regions will use the North Carolina prices.

Methods to Determine Transitional Yields:

The requirement that three years of production records be provided reduces the significance of the *t*-yield substantially. The “personal *t*-yield,” which is simply an average of the three available years of production, is proposed in the event a producer has fewer than four years of production history.

Loss Adjustment Procedures:

Sweetpotatoes are a perishable crop that must be promptly protected from the sun (prevent sunscald) and either sold green or cured immediately after harvest. Curing is necessary to heal the ends of the roots and any cuts or scrapes that occurred during harvest. Curing is conducted in a storage environment at higher temperatures and humidity than long-term storage. Thus, the present provision that, “You must not dispose of or sell the damaged crop, or store the crop, until after we have given you written consent to do so, or 15 days after the notice of damage, whichever is later,” does not conform to the manner in which this crop must be managed to minimize damage and maximize value to the producer. This provision will not be included in the new program.

Watts and Associates believes it must be mandatory that portions of each field remain unharvested whenever a notice of loss is filed. Appraisals of those unharvested portions and pre-harvest appraisals will be the basis for determining production loss. If the producer anticipates a loss of 50 to 100%, pre-harvest appraisal must take place. If the producer anticipates a loss between 25 and 50%, check strips may be used for adjustment.

The Sweetpotato New Pilot Program includes a procedure for differentiating losses to insured and uninsured perils. Losses to uninsured perils will not be indemnified. Determining the causes of loss requires a specialized skill set. All sweetpotato loss adjusters will be required to attend specialized training to accurately assess causes of loss.

Indemnity Calculations:

The basis of insurance is the APH production guarantee. Therefore, losses are payable only if the quantity produced (both harvested and appraised) is less than the trigger level. The trigger level is the APH yield multiplied by the coverage level percentage.

Actuarial and Underwriting Soundness of the Sweetpotato New Pilot Program:

Given the unique nature of sweetpotato harvesting methods, and after a review of all currently available alternatives (insurance plans), it was determined that the APH plan was the best insurance alternative to this crop. Numerous gate-keeping procedures have been developed to assist in generating a sound program from an actuarial and underwriting perspective. It should be noted that the intent of this development effort is to substantially increase the soundness of the program. The intent of the monitoring program attached to this contract is to allow RMA

and the Contractor to finalize the "tweaking" of the product to bring it into alignment with FCIC goals.

Concept Paper Supplement: Harvest through Pack Out Process

Due to the unique nature of the cropping processes in sweetpotatoes, particularly in harvest and storage, a more robust underwriting process is warranted. This supplement is intended to provide additional context for underwriting issues addressing harvest and storage.

Storage roots continue to grow until the leaves are killed by frost. Normally, harvest begins when most of the roots are in the U.S. No. 1 size class, as U.S. No. 1 sweetpotatoes command the highest price. The harvest season for sweetpotatoes runs from mid-September to as late as mid-November depending on the production region.

The primary harvest peril is an over abundance of moisture during or immediately prior to the harvest season. When the soil becomes saturated, conditions that promote rot are created. The damage is not generally obvious at the time of harvest or curing, but becomes apparent during storage. A second peril is a condition known as “hardcore,” a disorder where a whitish, hard area appears in the cooked sweetpotato occurring in roots chilled below 40°Fahrenheit overnight. Hardcore can be detected after several weeks of storage, but it is generally not discovered before the consumer makes use of the sweetpotatoes.

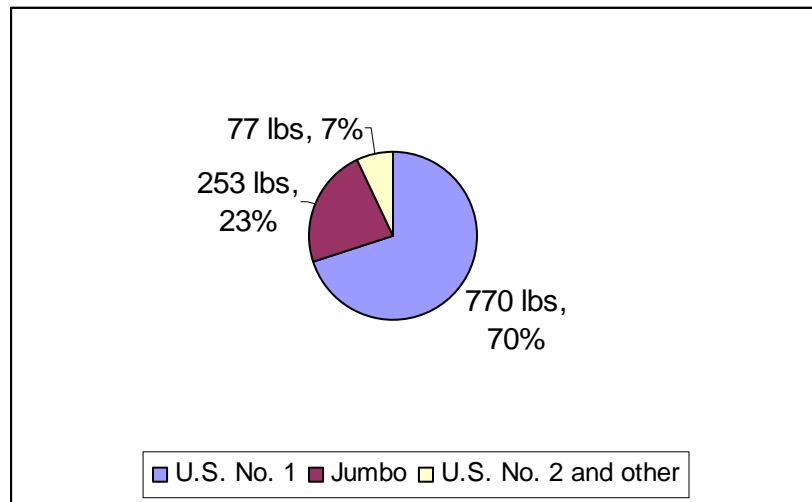
Sweetpotatoes are very susceptible to damage at harvest. Harvested roots left in the sun at temperatures above 90° Fahrenheit sunscald in 30 minutes. Scalded areas turn purplish-brown and are more susceptible to storage rots. Sweetpotato roots do not have a protective outer layer of cells like that of tubers and may become “skinned” easily. Any abrasion can lead to rot in storage. Skinned areas can become dark, sunken, and surrounded by a narrow brown border. These scars offer opportunities for storage rot pathogens such as *Fusarium* to enter the root. Curing roots after harvest allows the surface cells or “*periderm*” to reform, reducing subsequent storage damage.

In North Carolina, the leading sweetpotato production state, harvest is a labor-intensive process. Although there are instances of higher levels of technology in use, generally sweetpotato roots are turned up on top of the ground by a side angle disk plow and partially exposed to aid the crews of twenty to forty migrant laborers in picking and sorting.

In Louisiana, the second largest sweetpotato production state, harvest is a relatively highly mechanized process. Chain diggers or modified potato harvesters are used with crews of four to six laborers to sort and place the sweetpotatoes into bins. Due to the differences in labor requirements, harvest is far less costly in Louisiana than in North Carolina.

The sweetpotatoes that are sorted into bins for storage are called “field pack production.” These are a combination of sweetpotatoes that possess the external characteristics of U.S. No. 1, U.S. No. 2, and Jumbo sweetpotatoes. The ratio of each is variable from field to field and year to year, but will center around roughly 70% U.S. No. 1, 23% U.S. No. 2, and 7% Jumbo. In years where the market price is low, a larger percentage of the U.S. No. 2 roots will be left to rot in the field. Sweetpotatoes are generally transferred to 22 bushel, 1,100 pound, bulk containers after harvest. Although there are a large variety of other means of conveyance in use each year, the 22 bushel container is the industry standard. The graph below (Figure 1) illustrates the composition of a typical 1,100 pound bulk container by grade.

Figure 1. Typical Bin Composition by Type or Grade

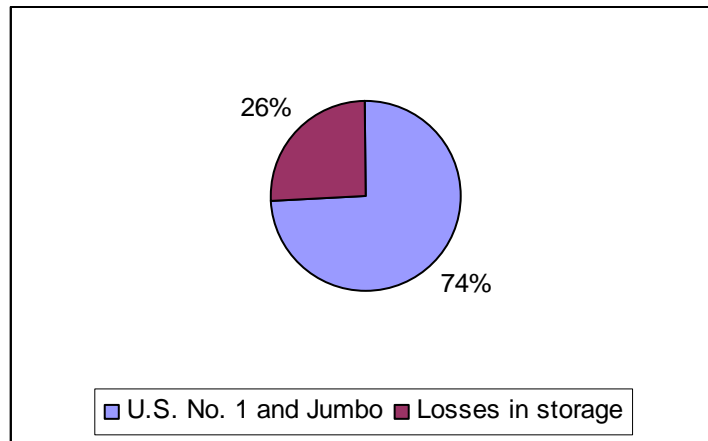


Source: Confidential regional pack in and pack out processing data set from packing houses in pilot states aggregated to protect privacy.

Most roots are cured immediately after harvest to improve flavor and storage life. Curing heals cuts, reduces decay, and reduces shrinkage in storage because it allows the “*periderm*” to thicken and reform. Curing should be started within 1 to 2 hours of harvest and continued for 4 to 7 days at 80 to 85° F and 90 to 95% relative humidity with ample ventilation for about 5 days.

Storage temperatures are very important. Long-term storage areas should be maintained at 55 to 60° F with 85% relative humidity and with sufficient venting to produce a total volume change of air at least once a day. Above 60° F, internal breakdown, shrinking, and sprouting can occur. Shrinkage occurs at 1 to 3% per month. Losses in total sweetpotato volume attributed to shrink, rot, removal of dirt, and sorting out inadvertently harvested substandard roots are significant. Losses will vary widely based on conditions at harvest, technology implemented within the storage facility, term of storage, and cultivar. Based on analysis of producer pack out data, losses typically make up 26% of the total sweetpotato volume harvested (Figure 2).

Figure 2. Storage Survivability



Source: Confidential regional pack in and pack out processing data set from packing houses in pilot states aggregated to protect privacy.

Sweetpotatoes packed out can be estimated by multiplying the composition of a 1,100 lb bin by a loss ratio. U.S. No. 1 make up 70% of the field pack production and 74% survive storage.

$1,100 \text{ lbs.} * 0.70 * 0.74 = \sim 569.8 \text{ lbs.}$

U.S. No. 2 make up 23% of field pack production and 74% survive storage.

$1,100 \text{ lbs.} * 0.23 * 0.74 = \sim 187.2 \text{ lbs.}$

Jumbo make up 7% of field pack production and 74% survive storage.

$1,100 \text{ lbs.} * 0.07 * 0.74 = \sim 57 \text{ lbs.}$

By industry convention, producers are typically paid based on the portion of the field pack production that is marketed into fresh consumption channels. U.S. No. 2's are nearly always either canned or discarded, leaving the U.S. No 1's and Jumbos to the fresh market. Generally, processors will salvage whatever value for the canning roots they are able to obtain from canners.