

FACT SHEET

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Guide for HARVESTING, HANDLING AND DRYING PEANUTS

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HARVESTING

Time To Harvest

Harvest when most of the peanuts are mature. This may be indicated by darkened veins and browning on the inside of the pods. At the same time, the seed coats should be light pink in color and papery thin. Peanuts that are left to mature properly will be easier to dry without damage as well as dry faster. A good guide for determining time to harvest is when approximately 75 percent of the peanuts are mature. Immature peanuts are difficult to dry properly since they are the first to go "off flavor." They usually shrivel and, consequently, lower the quality of the sound, mature peanuts in the same lot.

To determine when peanuts are ready to harvest, be sure to collect an adequate number of samples from the field.

Harvesting Operations

Dig deep enough to prevent cutting the pegs. **Digging, shaking, and windrowing** in one operation will reduce costs and peanut losses. If digging is done as a separate operation, follow with equipment to shake and windrow the peanuts, handling the plants as gently as possible. A second shaking operation can be used to reduce the amount of sand and to hasten field curing.

The inverted windrow has some merit under some of the conditions observed in various research

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projects. It permits more air to circulate around the peanut pod and permits the moisture content to drop more quickly after showers. It is important to get peanuts to field dry as quickly as possible after showered upon or where heavy dew occurs.

Generally speaking, the higher the moisture content at combining, the greater the mechanical damage to the peanut pod and kernel. If peanuts are to be artificially dried, begin when the moisture content of the kernels is reduced to .25 percent or less (preferably 20 percent or less). If artificial drying is not planned, peanuts should contain less than 15 percent kernel moisture when combined. Measure moisture content with a moisture tester.

Adjust combines regularly to give more picking action when the vines are tough and to reduce picking action when the vines are dry in order to obtain high picking efficiency and minimize mechanical damage to the hulls. Do not operate the cylinders and picking units above the manufacturer's recommended speed.

HANDLING

Handling and Conveying

The problems involved in handling and conveying peanuts become more critical as the drying process progresses. Equipment for conveying and handling should be of such types and operated at capacities that will prevent damage to the peanuts. The use of solid belt conveyors to move threshed peanuts has proved to be best for avoiding excessive shelling and cracking.

Cleaning farmers' stock before artificial drying removes foreign material (sand and plant parts) and should permit a more uniform distribution of air through the peanuts during the drying process.

DRYING

Artificial Drying

When peanuts with excess moisture are combined, drying should be completed by circulating air through them. Undue delay in starting air movement through peanuts having more than 16 percent moisture content likely will result in heat and mold damage.

The rate at which peanuts are dried and their final moisture content are important considerations in the drying process. If peanuts are dried too rapidly, their milling quality will be reduced; and if peanuts are exposed to excessively high tem-

peratures, off flavor may occur. The rate used by the experienced operator with good drying equipment can materially affect the grade.

Procedures

Place peanuts in drying bins as quickly as possible after combining. Spread and level the peanuts in the bins or trailers.

Airflow

An adequate air flow, uniformly distributed, is important to dry peanuts properly. The following is recommended:

Initial Peanut Moisture Content	Minimum Airflow cfm per cu. ft.
30% or above	18 to 20
20% to 25%	16
15% to 20%	12½
15% or below	10



Inverted windrows of peanuts ready for threshing.

THE EFFECT OF TEMPERATURE ON RELATIVE HUMIDITY

Relative Humidity of Heated Air in Percent
Under the Following Conditions

Outside Temperature	Temperature Rise	Relative Humidity of Natural Air			
		100%	90%	80%	70%
50°	5	83	75	66	58
	10	69	62	55	49
	15	58	53	47	40
60°	5	84	77	67	58
	10	70	63	57	49
	15	60	54	48	42
70°	5	84	77	68	59
	10	71	64	57	50
	15	61	54	49	42
80°	5	85	76	68	59
	10	72	66	58	50
	15	62	56	50	43

To assure adequate fan capacity for all depths, select a fan unit that will supply air for the anticipated maximum depth and maximum moisture content of peanuts.

Equipment dealers and others who select fans for curing peanuts require information on the total air volume and the static pressure requirements. Static pressure is a measure of the resistance that the air distribution system and peanuts offer the airflow. It is designated in inches of water. Static pressure against which fans must operate to supply air at various rates can be obtained upon request from your Extension agricultural engineer and other technical sources.

Use of Supplemental Heat

The proper use of heat is one of the most important factors to assure high quality artificially

dried peanuts. If peanuts are dried too rapidly, their milling quality will be reduced (*i.e.*, skin slippage and splits), and if peanuts are exposed to a temperature above 95 degrees F., off flavor may occur.

The moisture content to which peanuts will dry is determined by the relative humidity of the air passing through them. Air at 60 percent relative humidity will dry the kernels of Spanish peanuts down to 8 percent moisture if drying is continued over an extended period. To prevent over-drying, add only enough heat to the drying air to reduce the relative humidity to a minimum of 55 percent.

For these reasons, never use more than 15 degrees temperature rise or a temperature above 95 degrees F. The temperature rise required to satisfy these conditions is shown in the following table.

Summary of Drying Procedure

Control temperature to protect the quality. Set high limit thermostats at 95 degrees. Do not allow humidity to go below 55 percent if possible. Not more than 15 degree temperature rise is advisable. Heat may be adjusted manually as shown in table.

Do not allow peanuts to over dry. Peanuts normally will continue to lose moisture after the heat is cut off. It is therefore recommended that the drying operation be stopped when the kernel moisture is reduced to 10 percent. Check moisture again before unloading the bin or trailer. Never assume peanuts to be dry; check with moisture meter for accuracy.

GUIDES FOR MAINTAINING PEANUT QUALITY

1. Allow peanuts to mature before digging
2. Remove excess soil when digging
3. Leave in windrow until moisture content is below 25 percent (if possible)
4. Adjust combine for vine toughness
5. Operate combine cylinder at recommended speed
6. Clean peanuts, if possible, prior to artificial drying
7. Fill bins, wagons, or trailers to uniform depths
8. Provide for an adequate drying rate by limiting depths in dryer based on initial moisture
9. Control temperature by automatic controls or manual adjustment of heat input to protect quality
10. Provide an air distribution system that will provide uniform air flow through the peanuts
11. Do not overdry peanuts
12. Avoid mashing, breaking, and mixing with grains or other foreign material
13. Elevators, bins and equipment should be kept clean and properly maintained