

TRIPLE/S DYNAMICS  
PROCESS EVALUATION

[REDACTED]

BY: [REDACTED]

SALES REPRESENTATIVE: [REDACTED]

LAB SAMPLE NUMBER: 80-52

SUBJECT: Removal of Trash From Popcorn by Screening for  
[REDACTED]

BACKGROUND: Four 50-lb. bags of uncleaned popcorn were received from [REDACTED] for cleaning. The objective of the test was to clean the popcorn by removing the trash, i.e. sticks, cob, and field corn, and to remove fines and undersized kernels.

SUMMARY: It is possible to achieve by screening a popcorn product that is approximately 98% clean popcorn at a feed rate of 5082 lbs/hr/ft of width.

PROCEDURE: The sample of uncleaned popcorn was first screened on the 1' x 3' Texas Shaker equipped with a 5/16"Ø screen for three passes for a total of nine feet of travel. The feed rate to the screen was approximately 5082 lbs/hr/ft of width. The overs and throughs were collected and weighed after each three foot pass. The -5/16"Ø fraction was then passed over 9 feet of 3/16"Ø screen. Again the overs and throughs were collected and weighed.

Two representative samples of the -5/16"Ø +3/16"Ø fraction were collected and hand-picked to remove the trash. Both the clean, hand-picked sample and the trash sample were weighed to determine the percent of trash in the sample.

RESULTS AND

DISCUSSION: The results of the screenings are presented in Table 1.

Table 1 - Cumulative Percent of Overs and Throughs Collected Off the 1' x 3' Texas Shaker From Popcorn Screened on 5/16"Ø and 3/16"Ø Screens

(Continued...)

Table 1 - Continued

<u>Fraction</u>	<u>3 Feet</u>	<u>6 Feet</u>	<u>9 Feet</u>
+5/16"ø	19.62%	8.99%	6.27%
-5/16"ø	80.38%	91.01%	93.73%
-5/16"ø +3/16"ø			99.13%
-3/16"ø			0.87%

The results of the screenings show that the +5/16"ø fraction consisted primarily of sticks, cob, field corn, and oversize popcorn. The -3/16"ø fraction consisted of fines and undersized popcorn.

Two representative samples of the -5/16"ø +3/16"ø fraction were collected and hand picked. The results of this are:

Sample #1 (-5/16"ø +3/16"ø)

<u>Fraction</u>	<u>Weight</u>	<u>Percent</u>
Clean Popcorn	646.8 gms	98.22%
Trash	11.7 gms	1.78%

Sample #2 (-5/16"ø +3/16"ø)

<u>Fraction</u>	<u>Weight</u>	<u>Percent</u>
Clean Popcorn	602.4 gms	98.38%
Trash	9.9 gms	1.62%

The trash picked out of the clean popcorn sample consisted mainly of broken or cracked pieces of popcorn.

The popcorn samples have been returned to [REDACTED] for further evaluation.

[REDACTED]