

# Allergens & Controls in the Supply Chain.

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# Overview

- Basic Facts & Information
- Peanut Allergen in Cumin
- Points of Contamination & Risk Assessment
- Processing
- Testing – Actual Results
- Recommendation



# BASIC FACTS : FARM MATRIX

Product / Limit	Peanuts < 5 ppm	Wheat < 20ppm	Crop Rotation	Neighbouring Field
Celery	X	Y	Y	Y
Chilly	Y	Y	Y	Y
Coriander	X	Y	Y	Y
Cumin	Y	Y	Y	Y
Fennel	Y	Y	Y	Y
Fenugreek	X	Y	Y	Y
Garlic (India)	X	Y	Y	Y
Ginger	X	Y	Y	Y
Onions	Y	X	Y	Y
Turmeric	X	Y	Y	Y



# Peanuts – basic facts

- Peanut plants need **1.5 – 2 inches of water per week** during kernel development.
- Mainly from Rain Fed Sources . If not then irrigation is needed.
- The Peanut is a very good Nitrogen Fixing plant which absorbs Nitrogen from the air and provide enrichment & nutrition to the plant & soil.
- Peanut Board





# Peanuts.

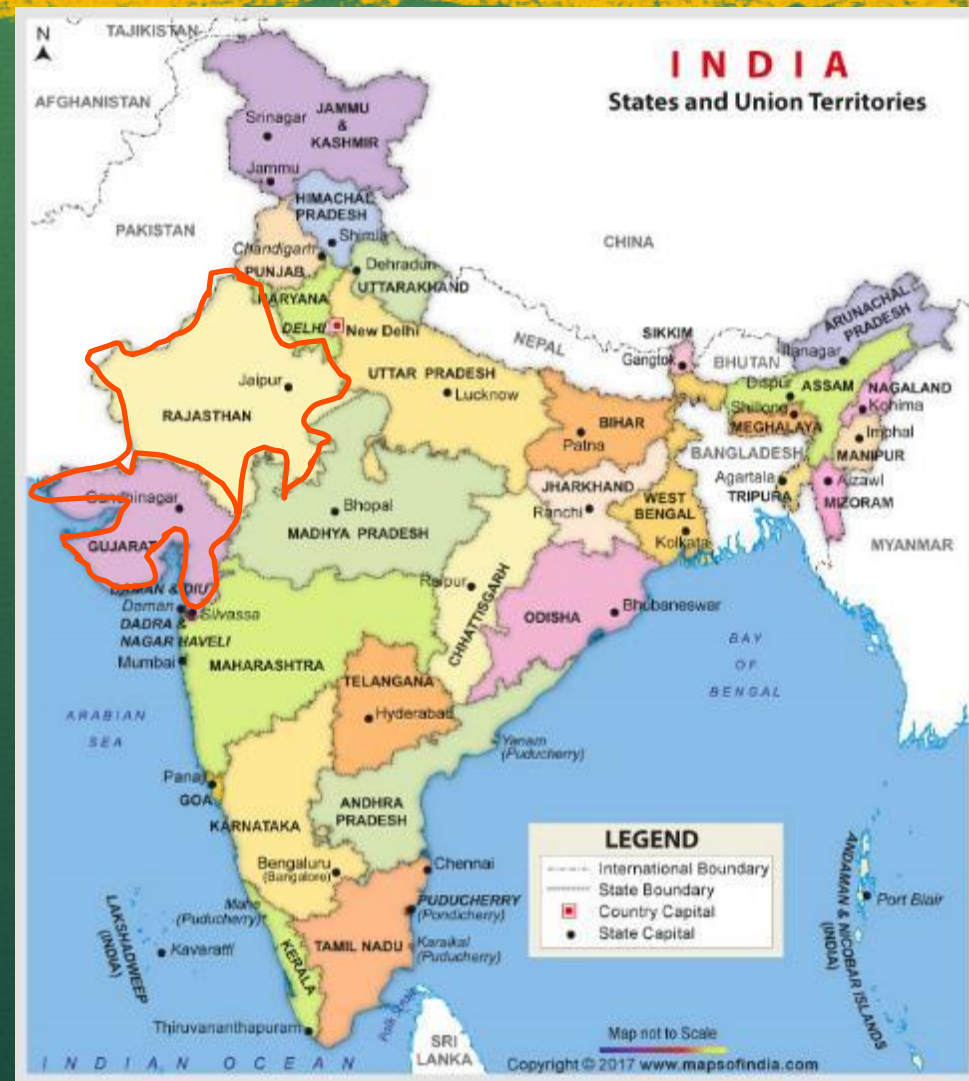
- Gujarat and Rajasthan – accounts for more than 60% of Indian Peanut production
- 75% grown in the Monsoon Crop ( July-October )
- 25% grown in the Summer crop ( March – May )

Cumin Seeds are sown in Oct – Nov and harvested in Feb – March.



# Gujarat & Rajasthan

- Gujarat and Rajasthan – grow 60% of India's production.
- North Gujarat & Rajasthan grows Peanuts in the monsoon crop and cash crops in the winter period.
- **Due to hotter temperatures in the summer, North Gujarat and Rajasthan don't grow peanuts in the summer seasons.**





# Cumin Seeds

- Planted between October – Nov & Harvested Feb – March depending on the length of the winter.
- A crop that requires less irrigation. 3 – 4 irrigations over 4 months.
- Main states of planting are Gujarat & Rajasthan.





# Peanut trail in a Cumin Field





# Cross Contamination

- **Field Level contamination**
  - Farmer - trail seeds, re-used bags – Medium Risk
- **Market Level contamination**
  - Terminal Markets – High Risk
    - Multi Commodity arrivals

## POST MARKET CONTAMINATION

- Trader Level – High Risk
- Mid – Processor – High Risk
- Final Processor / Exporter
  - **MUST** Manage this risk & comply with FSMA



# Cumin @ Swani

- Material is sourced from a both Rajasthan and Gujarat areas.
- Our Backward Integration & Organic Programs have farmers who grow Peanuts prior to growing Cumin on the same land for Nitrogen fixation in the soil.
- Audited for Allergen pertaining to Peanuts since a few years by MNC's from USA, Canada & Europe.





# What we do?

Starting point is min 99.5% Sortex clean quality material

- No sales are done below 99.5% clean material
- No Milling is done of material that is below 99.5% clean material.





# Cutting Edge OR Cutting Corners





## Cleaning Process : Separation By Size





# Separation by Aspiration & Weight





# Cleaning by Seed Shape & Weight

## Indent Cylinders



## Gravity Tables





# Cleaning via Multi Colour and shape Sortex.





Further Value added processes like Milling, Roasting or Sterilizing cannot remove Allergens.





## Steam Sterilizing





# Results ??

DATE	PRODUCT	Lab	TESTING METHOD	RESULTS
30/12/14	Cumin Seed Whole Organic	External	Peanut Allergen-ELISA (R-BIOPHARM RIDASCREEN)-	<2.5 ppm
09/02/15	Cumin Seed Whole (ETO)	Internal	Peanut Allergen-Single Step Lateral Flow Immunochromatographic assay	<5 ppm
12/09/16	Cumin Seed Whole Organic (SS)	Internal	Peanut Allergen-Single Step Lateral Flow Immunochromatographic assay	< 5 ppm
10/02/17	Cumin Seed Ground (ETO)	Internal	Peanut Allergen-Single Step Lateral Flow Immunochromatographic assay	< 5 ppm

# Results...

117 Shipments made by Swani, have been tested over the last 2 years by one US based customer.

- All 117 analysis have cleared for Peanut Allergen < 5PPM
- Cumin was in Whole & Ground form
- Cumin was from both Conventional & Organic.
- All Cumin Seeds were min 99.5% Sortex clean





Eurofins WEJ Contaminants · Neuländer Kamp 1 · D-21079 Hamburg

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Person in charge Mrs S. Maß - 2902  
Client support Mrs S. Maß - 2902

Report date 01.03.2017  
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Analytical report: AR-17-JC-034816-01



Sample Code 706-2017-00642977

Reference	CUMIN SEED WHOLE INCONVERSION FARMER NAME : VILLAGE : DISTRICT : FARM CODE : RJ/15/TT/JS/04/03B
Client Sample Code	
Number	1
Amount	458 g
Reception temperature	room temperature
Ordered by	Ms. Rekha Hadkar
Submitted by	Ms. Rekha Hadkar
Sender	DHL
Reception date time	21.02.2017
Packaging	plastic bag, sealed
Start/end of analyses	22.02.2017 / 01.03.2017

## TEST RESULTS

### Molecularbiological Analysis

JJ610 Detection of peanut  
Method: Neogen Test-Combination 902048Q, PV 01194, ELISA  
Subcontracted to a Eurofins laboratory accredited for this test.  
Peanut

<1 \* mg/kg

\* = Below indicated quantification level

Result +/- expanded measurement uncertainty (95%; k=2)

Signature

Analytical Service Manager (Silke Maß)

Backward  
Integrated  
Farmer  
Report

Cumin  
Grown after  
Peanuts on  
the same  
field.



# Recommendations.

- Ensure your supplier & his operations team understands the seriousness of FSMA.
- Advisable not to use un-cleaned material for export or milling.
- Ensure Separation & REMOVAL of admixtures / allergens / cross contaminants in the cleaning process prior to Milling / Sterilizing & Export.





# Thank You

