



American Spice Trade Association

# California Dehydrated Onion & Garlic *Traceability Model*

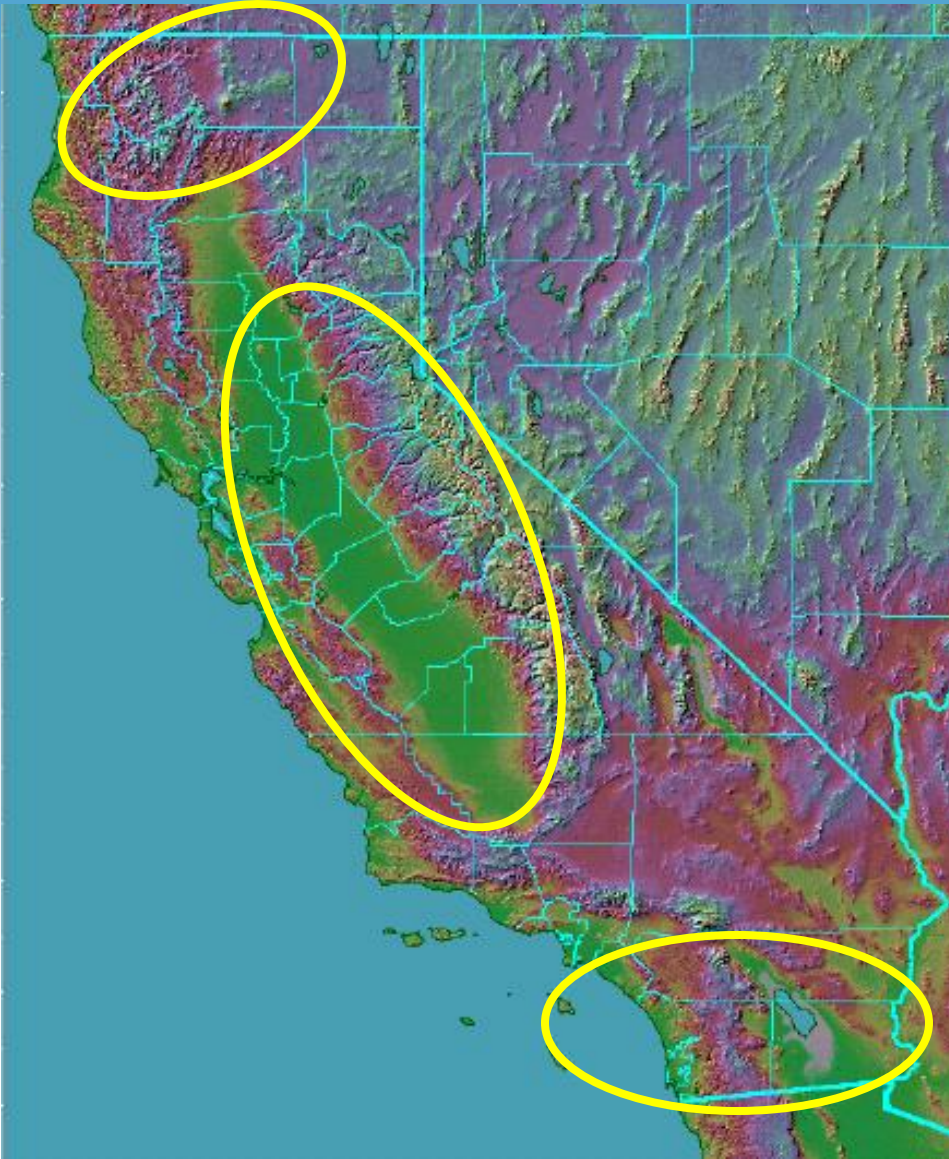
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# California Dehy Garlic & Onion

- Field/Grower Identification
- Planting, Cultivation & Harvest
- Delivery to Plant & Receipt
- Process Tracing
- Quality Data
- Warehousing/Storage
- Shipment/Distribution
- Product Tracing Records
- Why?

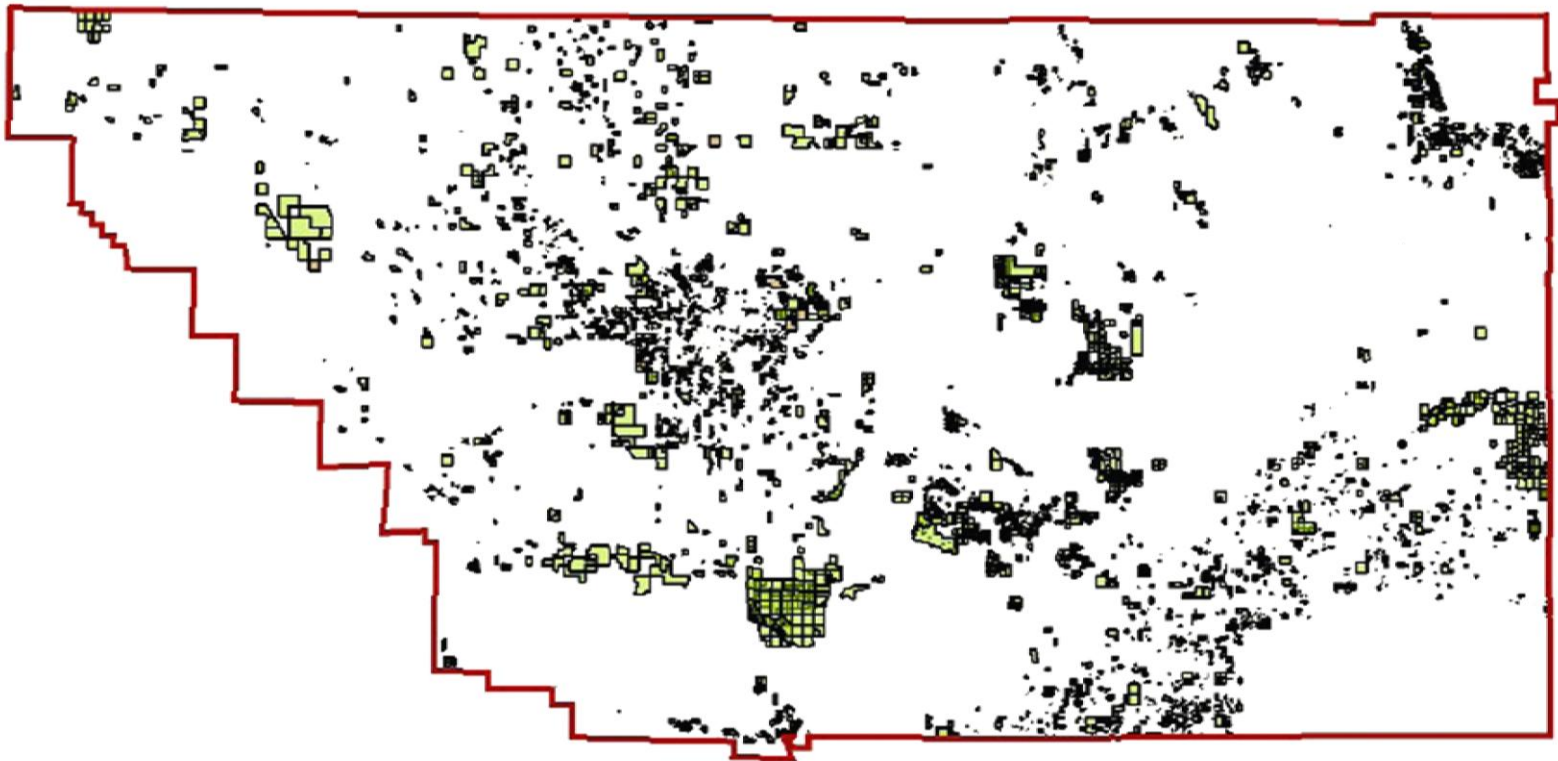
# Field/Grower Identification



Fields located from  
the southern desert to  
the central San  
Joaquin Valley to  
near the northern  
California/Oregon

# Field/Grower Identification

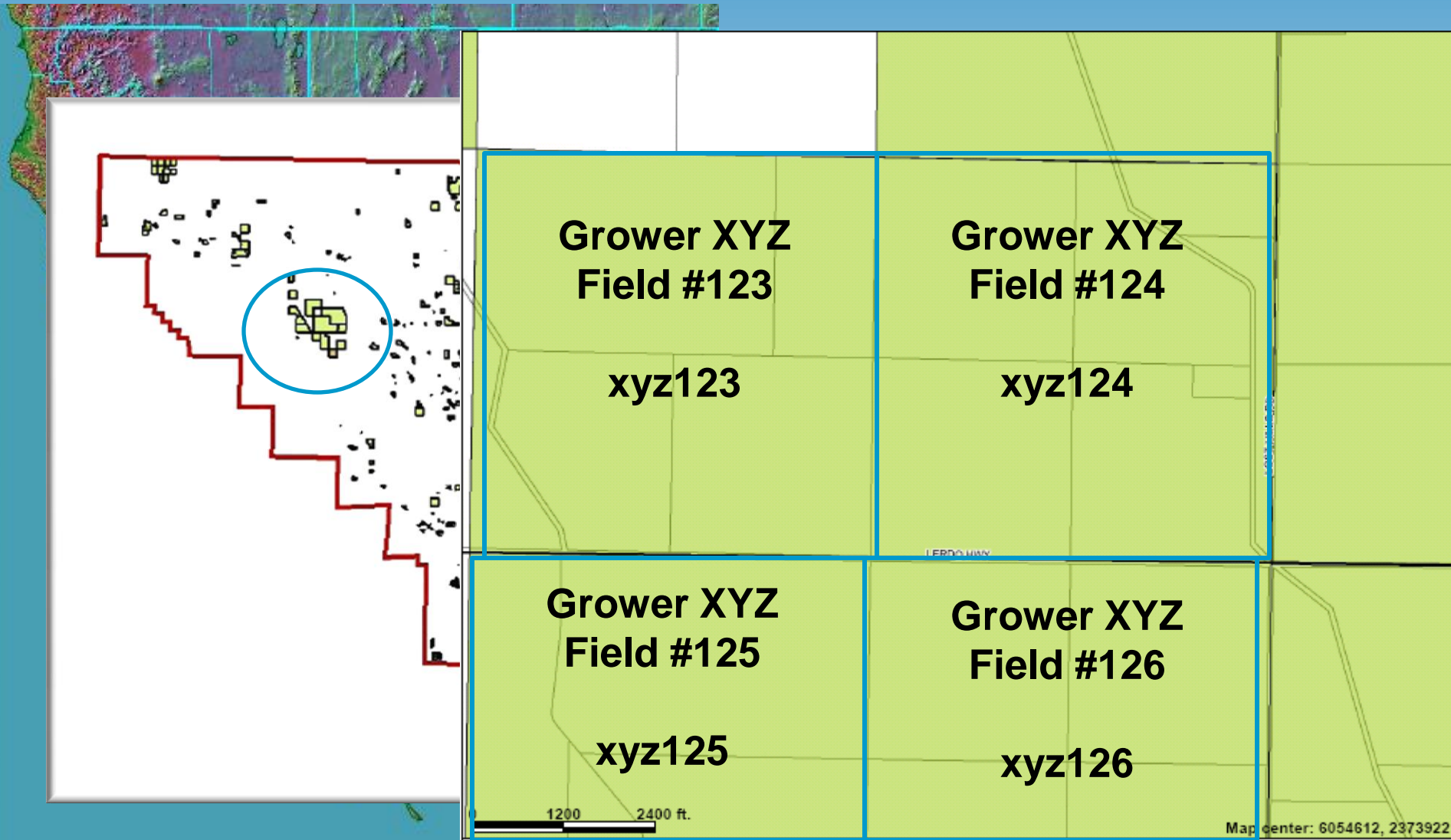
Each county has detailed maps available that lay out the land into section or plots. For example, Kern county, California is shown below.





# Field/Grower Identification

Detailed maps of each growing region identify each field by grower name and unique field numbers to quickly identify where raw material was grown.



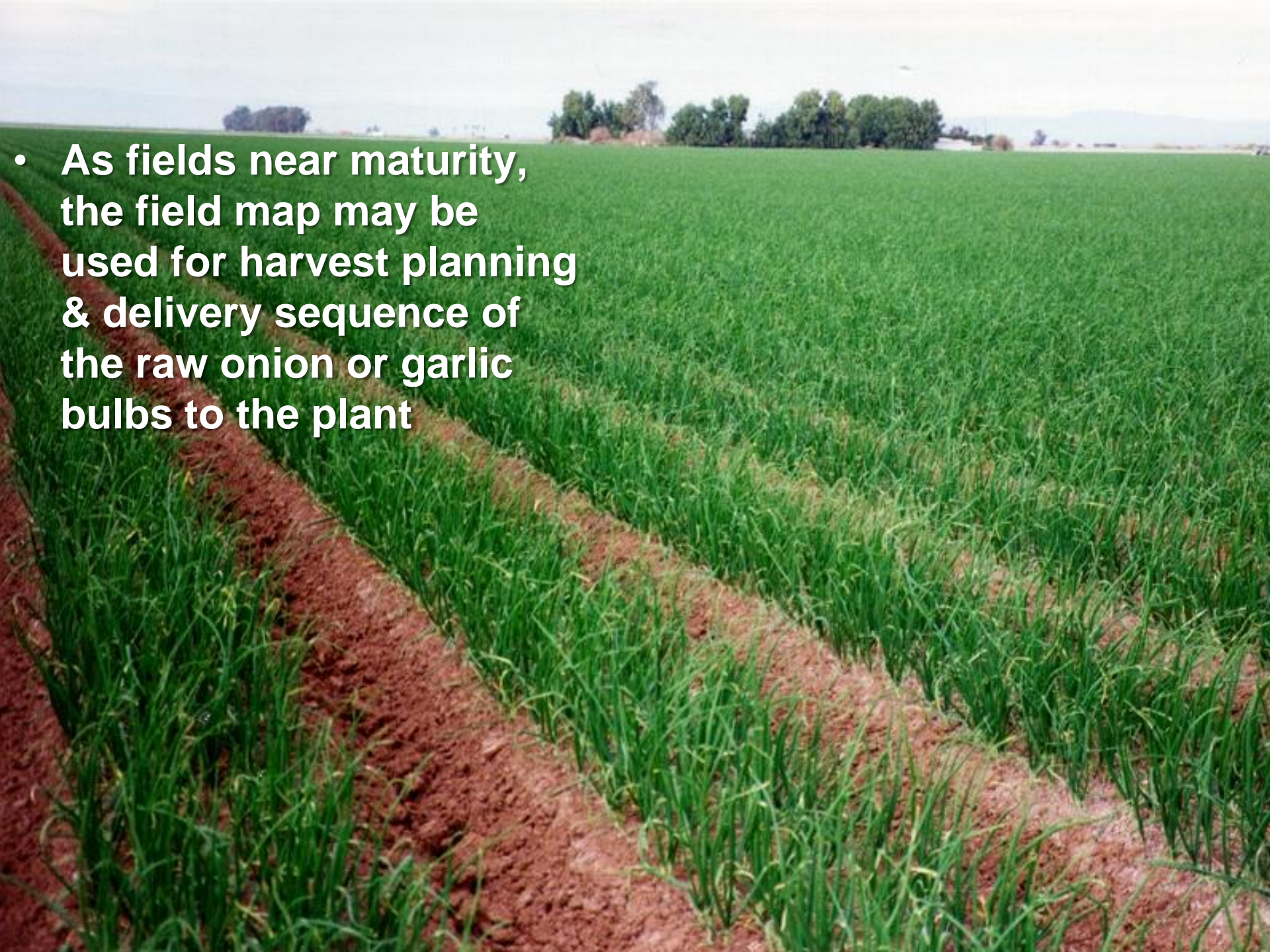
# Planting & Cultivation

- Varieties and Seeds are developed in our AG Research Labs
- During planting and cultivation, detailed records are maintained, linked to the grower and field number
  - Seed Variety
  - Cultivation Practices
  - Pesticides & Herbicides
  - Crop Status
  - Yield Estimates





- **As fields near maturity, the field map may be used for harvest planning & delivery sequence of the raw onion or garlic bulbs to the plant**





# Harvest

- Once the field is mature, the crop is harvested & loaded into trailers for delivery to the plant
- Each load is identified by the bill of lading number, trailer number, and unique grower/ field number





# Delivery

- Upon arrival at plant, after passing security check, every shipment is weighed, sampled, & tested
- Some shipments temporarily stored till ready to process
- Every shipment is recorded into the database
  - Bill of Lading Number
  - Grower /Field Number
  - Sample Test Results
  - Date/Time of Receipt

# Process Tracing

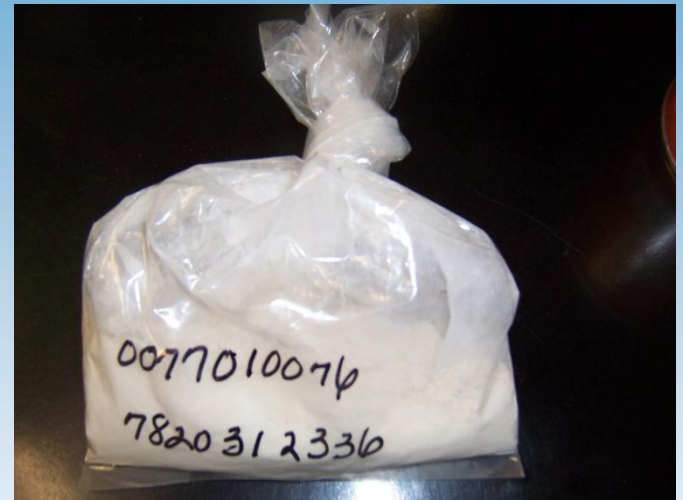
- Raw garlic and onion is run directly through the system in a continuous process – washed, sliced, dried, milled/sized and packaged into bulk storage containers
- Each lot is assigned a unique number
- Each pallet has a unique barcode label
- Barcode is applied to each bulk container as it is filled & scanned to record it as part of the lot
- Lot info in database includes
  - Manufacturing order #
  - Date & Time
  - Processing line
  - Product #
  - Pallet #'s / barcodes
  - Product
  - Samples & Test Data





# Quality Data

- Samples taken from each lot
- Each sample identified by lot number
- Manufacturing Order defines what product is to be made per product code
- Each product code is defined in database
  - Testing requirements
  - Specifications
- Test data traceable to the lot



# Warehouse/Storage

- Product delivered from process to WH
- Each unit/barcode scanned into database
- Specific storage location assigned
- WH tags printed & applied
- Database stores bulk lot#, status, pallet #, location #, date, time of each movement
- Product held until testing completed & lot released for use
- Lots selected for shipment per customer specifications
- Warehouse team gets specific list by location/lot to pick for each order/item
- Each lot/pallet/barcode scanned into database to track movement from warehouse row to shipping dock location





# Shipment/Distribution

- At shipping dock, product and trailer is inspected & results recorded for shipping order #
- Lots are scanned as they are loaded into trailers for shipment
- Loading diagram map is drawn to record location in truck for each product
- Shipping Order number, bill of lading, lot numbers and pallet #, recorded into database for shipment by scanning barcodes
- Labels applied to each container and/or pallet to identify shipping order #, customer PO #, date of mfr or best use by date; customer product number, shipment address, etc.

# Product Tracing Records

- Field Maps by Grower and Field Number
- Cultivation Records
- Harvest & Delivery
- Plant Receipt
- Processing Info
- Quality Testing Data
- Warehouse Storage
- Shipment Info
- Customer Info



# Why?

- Needed for prompt identification of affected product in the event of a recall or product quality issue
- Management tool to promptly identify the impact of pending issues/changes
  - Future regulatory changes
  - Product supply shortages
- Expedites root cause investigations into quality & food safety issues
- Useful for linking quality trends by grower, region for planning & improving future crops