Winter Lettuce Production: Yuma, Arizona

Kurt D. Nolte
University of Arizona
Yuma County...

- 3rd largest urban center within Arizona
- 225,000 acres, Colorado River irrigated (7 irrigation districts)
- Noted for having rich, deep and fertile river bottom soils
- 350 day growing season, sunshine 95% of the time
- In 2009, Ag production totaled $3.2 billion, ~1/3 of the entire state
- Winter Leafy Green Epicenter: Over 90% of
- Fresh produce: 23 coolers, 9 salad plants
- Fruit: 2 date and 3 citrus packing facilities
Yuma County Leafy Greens

- Arizona is the second leading producer of lettuce in the U.S.
- Majority of produce grown in AZ is farmed in Yuma County
- Commonly Referred to as the Winter Salad Bowl

Yuma Leafy Green Production

- Iceberg lettuce remains the leader 50,000 acres
- Romaine ranks 2nd at 45,000 acres
- Leaf type lettuces: 30,000 acres
- Baby leaf varieties: 25,000 acres
- Spinach takes another 9,000 to 10,000 acres
~ 7% of Yuma County Agriculture is Certified Organic
Lettuce linked to E. coli outbreak 'possibly' grown in Yuma area

BY JOYCE LOBECK - SUN STAFF WRITER

May 07, 2010 4:54 PM

There's a "possibility" that romaine lettuce linked to a widespread E. coli outbreak could have come from the Yuma area, acknowledged a local agriculture agent.

"A potential location has been identified in Yuma," Kurt Nolte, Yuma County Cooperative Extension director and agriculture agent, said Friday.

However, as of late Friday afternoon, the Food and Drug and Administration had not confirmed that the lettuce was grown here, he said. "The investigation is ongoing."
Arizona Leafy Green Marketing Agreement

California and Arizona are the only 2 states where leafy greens are grown under a unparalleled collection of guidelines.
Arizona Leafy Green Marketing Agreement

California and Arizona are the only 2 states where leafy greens are grown under a unparalleled collection of guidelines

The Arizona program is funded by a $\frac{1}{3}$ cent per carton assessment
California and Arizona are the only 2 states where leafy greens are grown under a unparalleled collection of guidelines.

The Arizona program is funded by a \( \frac{1}{3} \) cent per carton assessment.

The LGMA will likely become the production model for leafy green growers in the US.
Significant Progress

- Irrigation water metrics
- Animal intrusion metrics
- Compost risk assessment and management
- Reliable and inexpensive rapid methods of microbial assessments
- Traceability
- Behavioral Change
- Overall risk evaluation
Chief Lettuce Types

Head, Iceberg

Leaf

Romaine

Baby
Post Harvest Quality Assessment:

• Core Length
• Core Width
• Head Diameter
• Density
Head Lettuce Internal Density Score

1 Very Dense
3 Dense
5 Average
7 Slight Gaps
9 Large Gaps
Yuma County Vegetable Production

Critical Steps:

• Ground Preparation (laser leveling, listing)
• Planting
• Irrigation
• Thinning
• Pest Control
• Fertilization (side dressing)
• Furrow Irrigation
• Harvest
• Shipping
• Preparation For Following Crop
Laser Leveling
Listing (Bed Preparation)
Planting
Yuma Delivery of Irrigation Water: Some Ditches Concrete Lined, Some Not
Sprinkler Irrigation
E. coli Applied by Different Irrigation Systems – 1 day after irrigation with bacteria ($\sim 10^{6-8}$)
Germination
At Any Point During Growth, The Plants Are Protected From Pests
Head Lettuce at “Cup” stage
Ready for Side Dressing
Georeferenced soil textural variability is readily detected.
Packing Wheels Assist In Water Flow
Before Packing Wheel

After Packing Wheel
Furrow Irrigation
Cooling, Distribution
“Baby Leaf” Varieties
Preparation For Next Crop
Desert Durum Wheat