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River Ranch Fresh Foods

Chairman United Fresh Produce Association Food Safety
and Technology Council

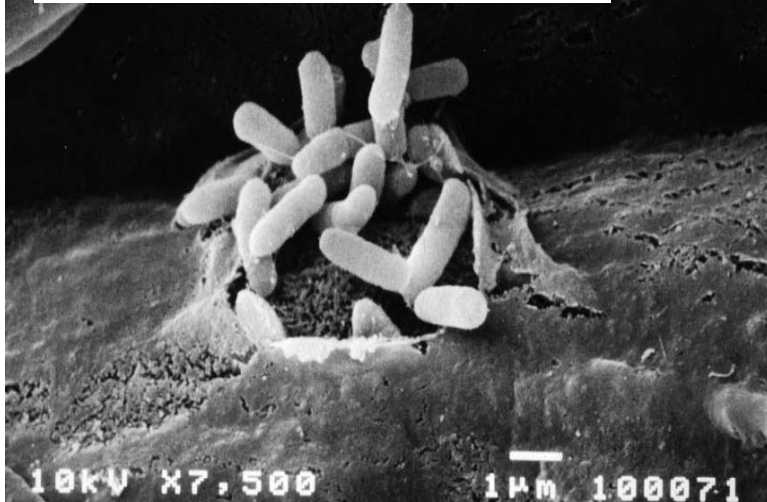
Chairman California Grower Shipper Association Food
Safety Committee

FOCUS FOR QUALITY AND FOOD SAFETY PROGRAMS



	DOING THE RIGHT THING	DOING THE WRONG THING
DOING IT RIGHT		
DOING IT WRONG		

Lettuce stomata



E. coli within a lettuce leaf stomate



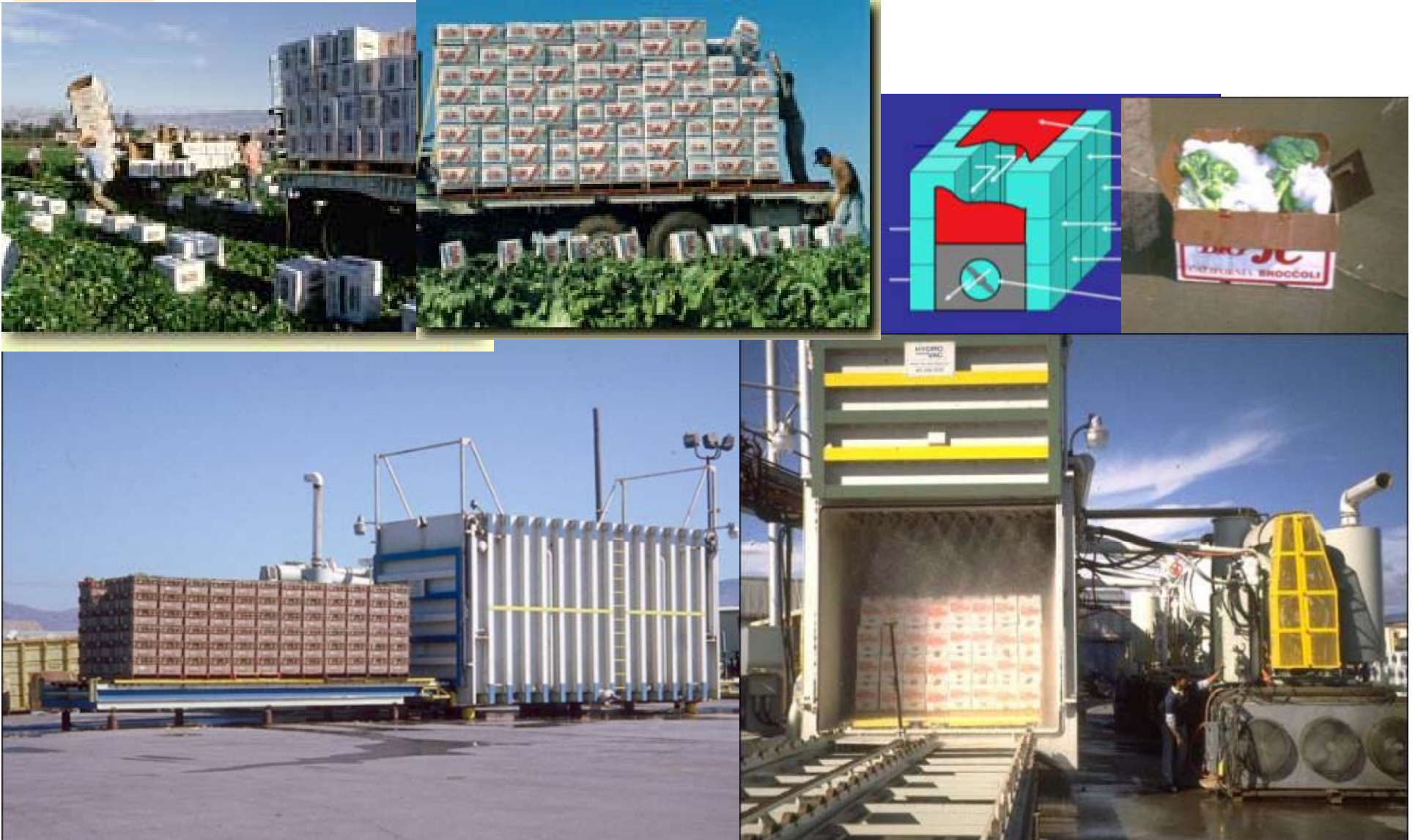
Production & Harvest

Practices: Harvest

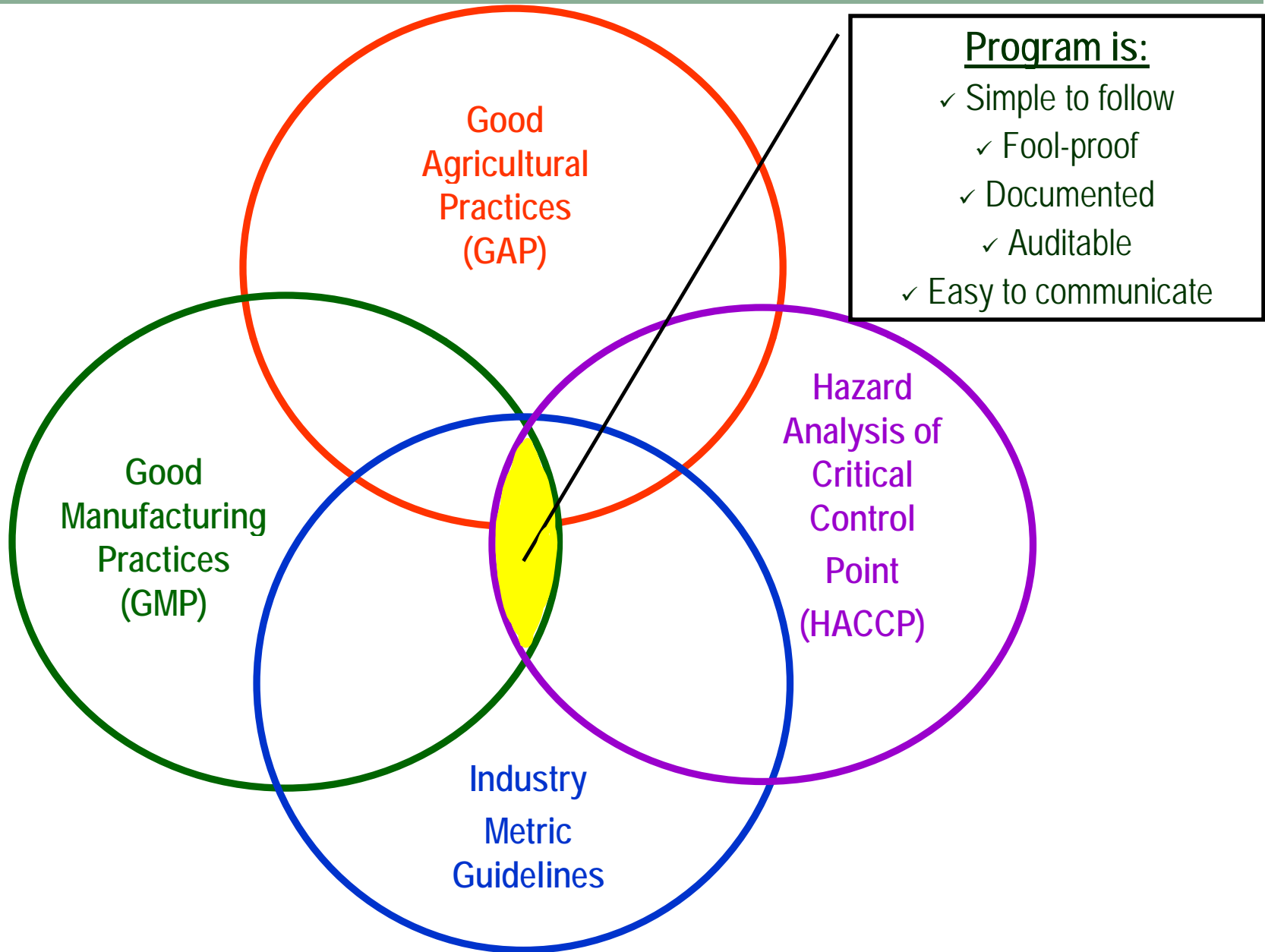
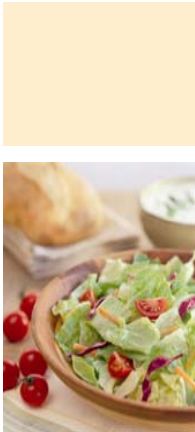


Postharvest Operations

Practices: Postharvest Cooling



Industry Food Safety Programs



The Lettuce & Leafy Greens Category

- Iceberg Lettuce
- Romaine Lettuce
- Green Leaf Lettuce
- Red Leaf Lettuce
- Butter Lettuce
- Baby Leaf Lettuce (i.e., immature lettuce or leafy greens)
- Escarole
- Endive
- Spring Mix
- Spinach
- Cabbage
- Kale
- Arugula
- Chard





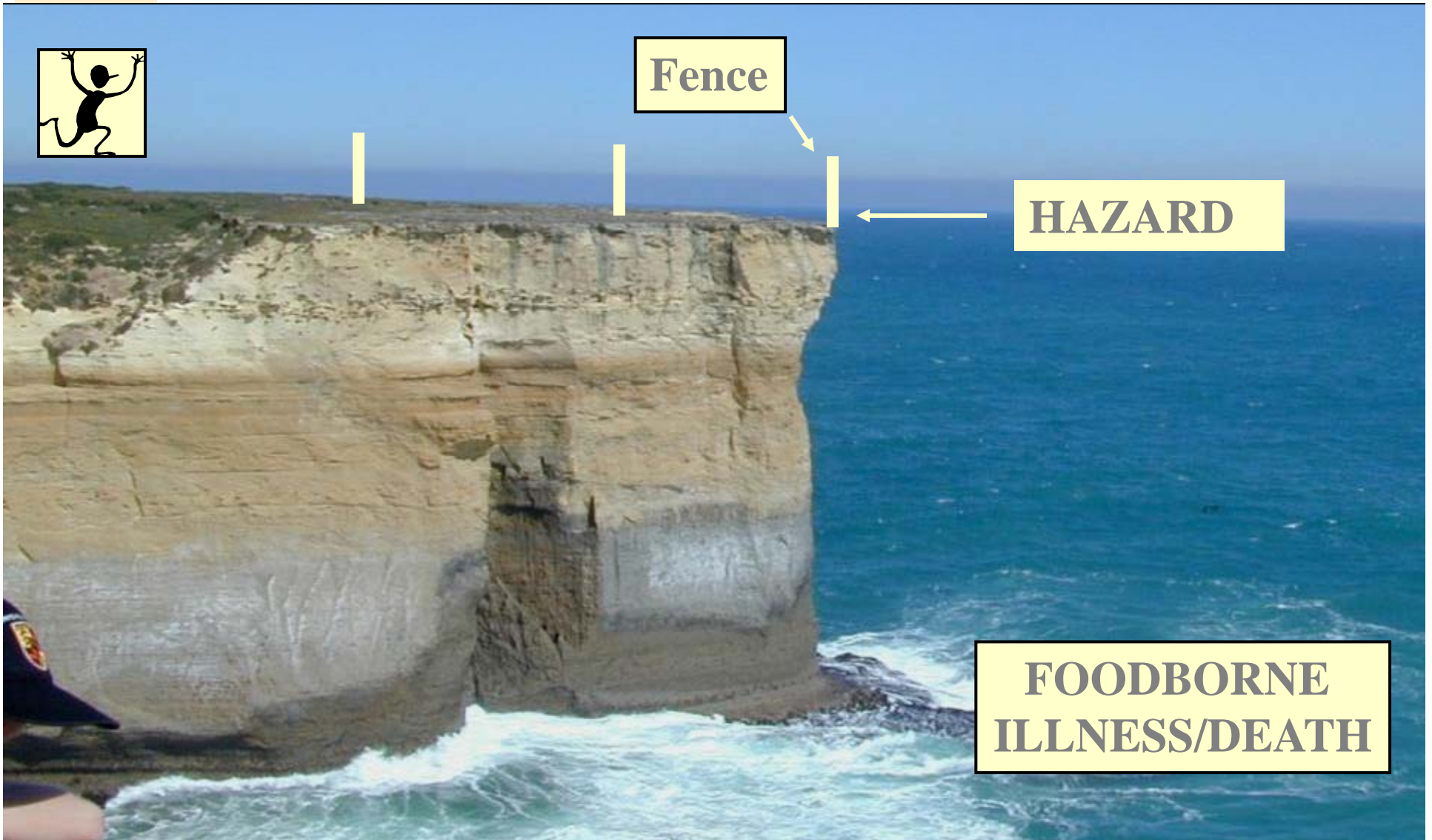
Food Safety Programs Control, Reduce or Eliminate Hazards



Fence

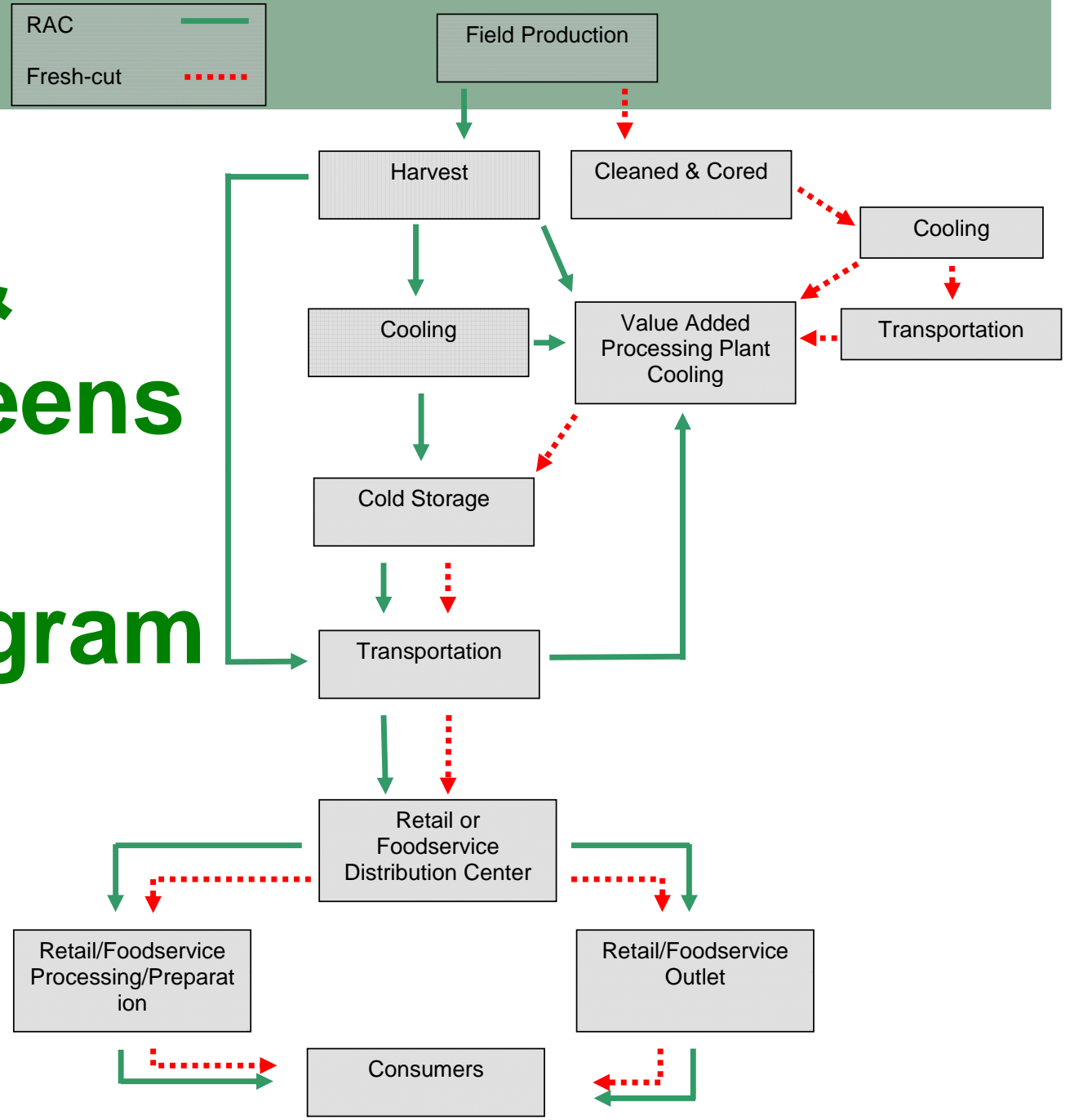
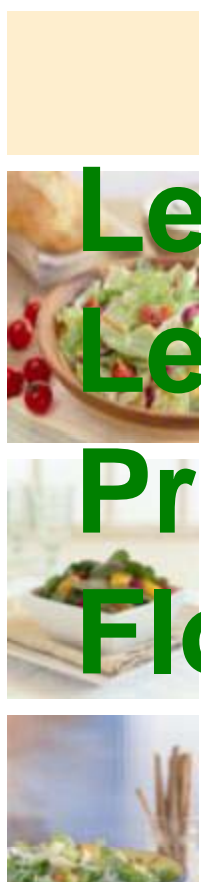
HAZARD

FOODBORNE
ILLNESS/DEATH




RAC ———
 Fresh-cut - - - -

Lettuce & Leafy Greens Product Flow Diagram



CHANGES IN LAST 3 YEARS

- 
- Food safety #1 concern
 - Industry issues no longer a single company
 - Customers demanding more
 - Pathogenic testing
 - Their specific audit
 - Proliferation of audits
 - California Leafy Green Marketing Agreement
 - Focus on risk management
 - Food safety budgets up 50 %
 - Better education and training programs
 - Hartnell College
 - Increased government involvement

	POSTHARVEST	QUALITY	CHEM. RESIDUES	FOOD SAFETY
20 YEARS AGO	25 %	30 %	35 %	10 %
15 YEARS AGO	25 %	40 %	25%	10 %
10 YEARS AGO	20 %	40 %	20 %	20 %
5 YEARS AGO	5 %	15 %	10 %	70 %



Good Agricultural Practices (GAP)
\$0.20 Increase –



Mandatory GAP Protocols	
1 Enhanced Trace-ability	1.64%
2 Raw Material Testing	14.71%
3 Buffer Zone compliance	63.91%
4 Audit Compliance	6.54%
5 Sanitation / Security / QA	13.20%
	100.00%



OSM

What are the sources of contamination?



FOCUS ON RISK ASSESSMENT THAT COULD LEAD TO CONTAMINATION

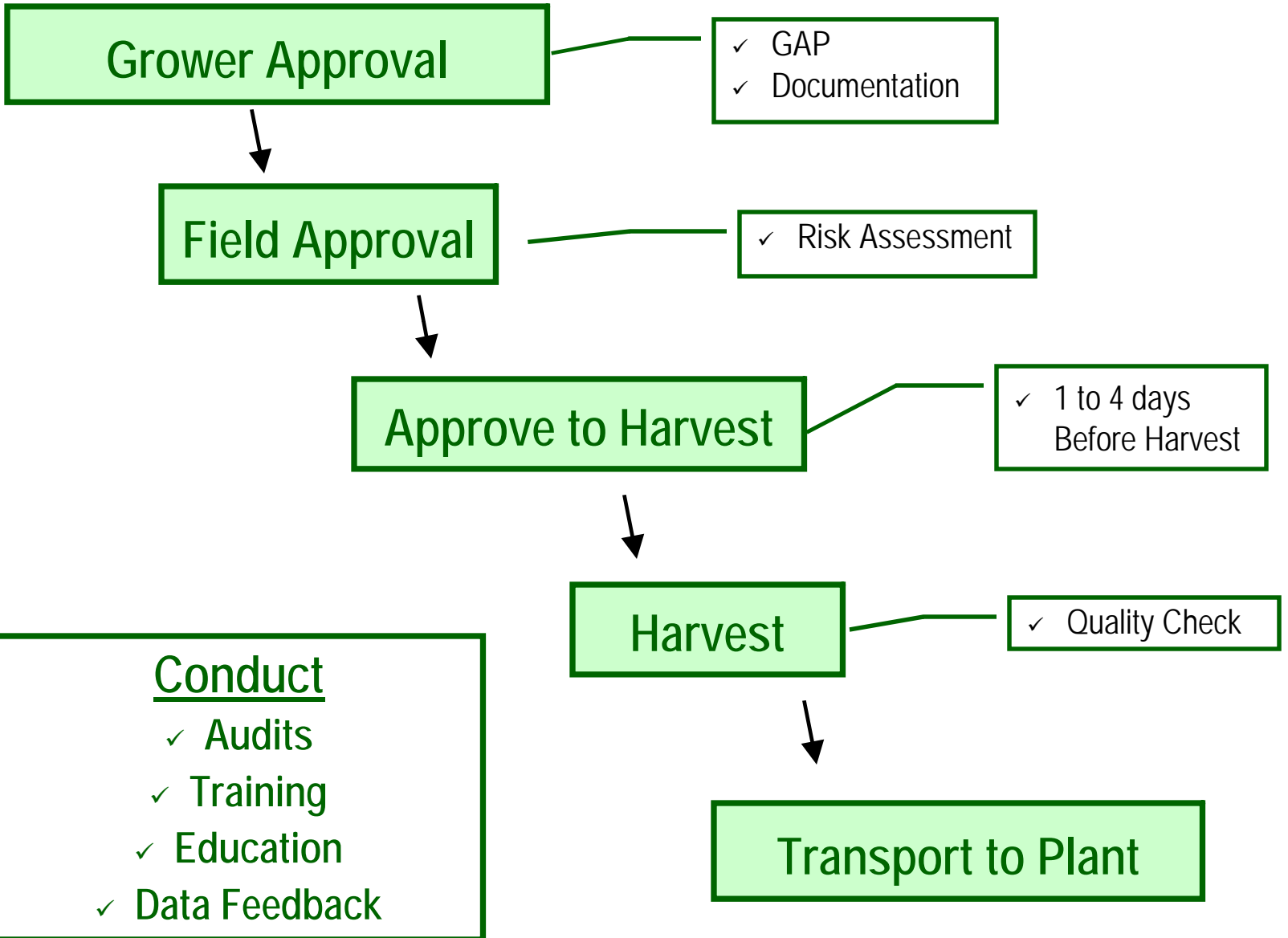
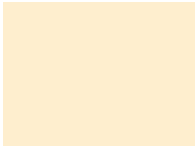


- Water Usage
 - Irrigation
 - Dust abatement
 - Postharvest applications
- Compost
 - Process
 - Handling
- Worker Hygiene
 - Clothing
 - Hand washing
 - Illness awareness
- Animal Intrusion



- Own their fields
- Contract
 - Paid price for the field
 - Paid price for pounds
- Spot purchases
 - Weather issues drive most of this

Field Program

















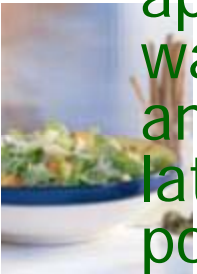
Contact with Soil

- Evaluate appropriate measures that reduce, control or eliminate the potential introduction of human pathogens through soil contact at the cut surface after harvest
- Avoid stacking soiled bins.



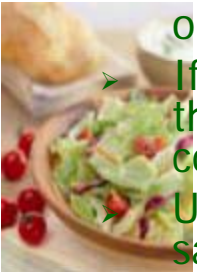
Worker Hygiene

- Use appropriate preventive measures outlined in GAPs such as training in appropriate and effective hand washing, glove use and replacement and mandatory use of sanitary field latrines to reduce, control or eliminate potential contamination.
- Prohibit eating, drinking or smoking in the field to reduce the potential for product contamination.

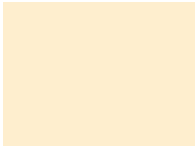


Machine Harvest

- Establish appropriate measures that reduce, control or eliminate the potential introduction of human pathogens at the cut surface during and after mechanical harvest operations.
- If re-circulated rinse or antioxidant solutions are used on the cut surface, ensure that they do not become a source of contamination.
- Use materials and construction that facilitate cleaning and sanitation of equipment contact surfaces.
- Establish the frequency of equipment cleaning and sanitation by development of Sanitation Standard Operating Procedures (SSOPs) and a sanitation schedule for machine harvest operations.
- Locate equipment cleaning and sanitizing operations away from product and other equipment to reduce the potential for cross contamination.
- Establish equipment storage and control procedures when not in use. Establish policies and sanitary design options that facilitate frequent and thorough cleaning and sanitizing of food contact surfaces.
- Develop and implement appropriate cleaning, sanitizing, storage and handling procedures of all food contact surfaces to reduce, control or eliminate the potential for microbial cross contamination



DATA TO CREATE A WARM FEELING



43	21	67	17	98	56
98	11	32	74	34	41
70	60	43	88	65	22
23	81	25	86	55	23
90	76	80	71	33	29

















PROCESSING OVERVIEW



- Incoming inspection
- Sorting
- Cut the product
- Wash in sanitized water
 - Chlorine
 - Peroxyacetic acid
- Dried
 - Spinners
 - Air Fans
- Bagged
 - Modified atmosphere
 - Iceberg, Romaine, Broccoli, Cauliflower, Green Leaf
 - Normal Atmosphere
 - Spinach, Spring Mix
- Shelf-life
 - 14 – 17 days







10711 ROMPBCCA - 0 PL06415 L490274+
ROMAINE C&C UNSEALED PB RR



EPCR01

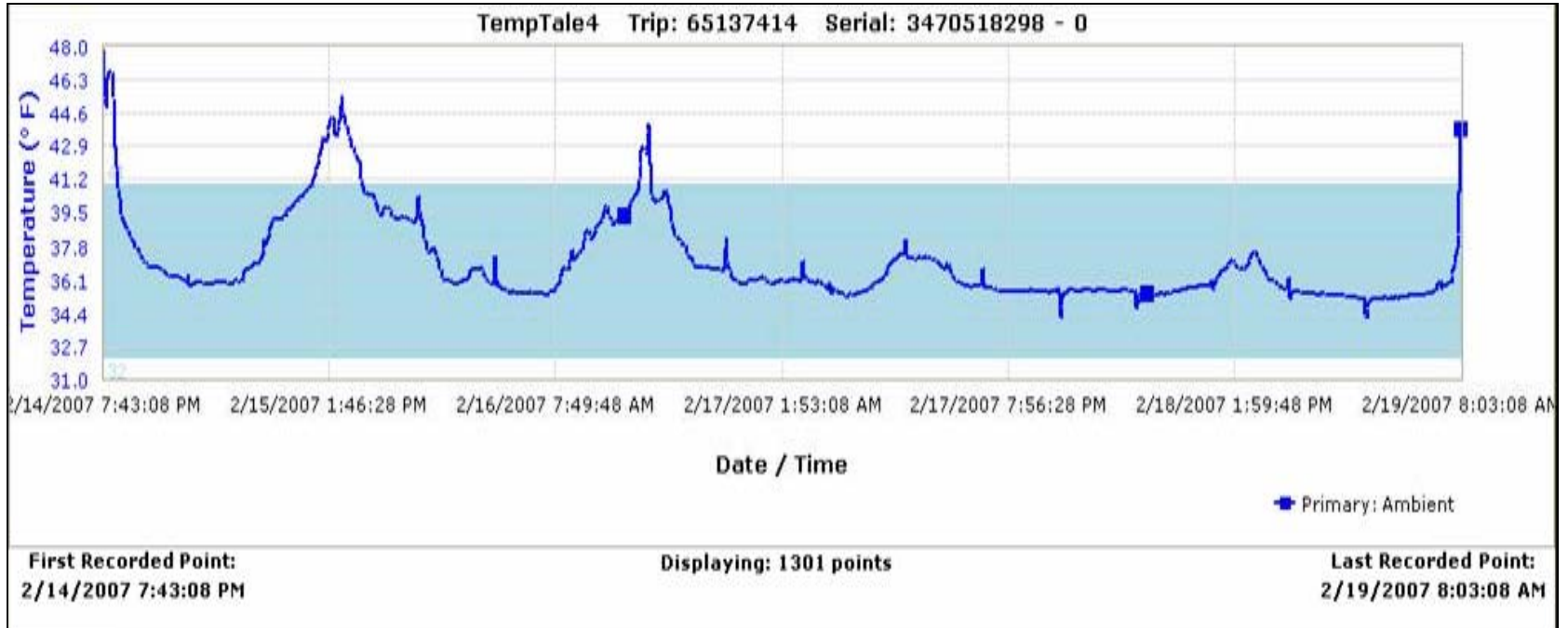
C2110894

RIVER RANCH-EPCR01 Crew: X TAMARACK 199

Time To Cut Time To Cool
2:36 PM 3:06 PM

C2110894 21 YELLOW 1





BUSINESS OF LOGISTICS

- CROP PRODUCTION
 - SPINACH CROP CYCLE 20 TO 35 DAYS
- CONTROL TIME FROM HARVEST TO COOLING
- INVENTORY CONTROLS
 - SUGAR SNAP PEAS
 - HARVEST TO OUR PLANT 2 TO 13 DAYS
- RUN TIMES
 - ALLERGEN COMPLICATIONS – LAST TO RUN
- STOP TIME FOR PROPER SANITATION
 - VA PLANT AND NOW FIELD
- CUSTOMER
 - LAST MINUTE ORDER CHANGES
 - PICK-UP SCHEDULES
- 17 DAY SHELF-LIFE
 - RETAILER WANTS 10 DAYS ONCE ARRIVES AT THE RETAIL STORE
- PRODUCT TESTING




Food Safety is Like Sex

- About everyone is in favor of it
- With practice you get better
- It is difficult to explain your entire approach to someone, but they generally get it
- And if something goes wrong you can blame someone else



IN SUMMARY – OUR FOCUS

- 
- Stopping consumer illnesses related to fresh produce
 - Process management
 - Satisfying our customers
 - Meeting government guidelines/regulations
 - Targeted research
 - Center for Produce Safety
 - Education and training
 - Utilizing industry associations to drive priorities

BEST STORY WE HAVE TODAY

