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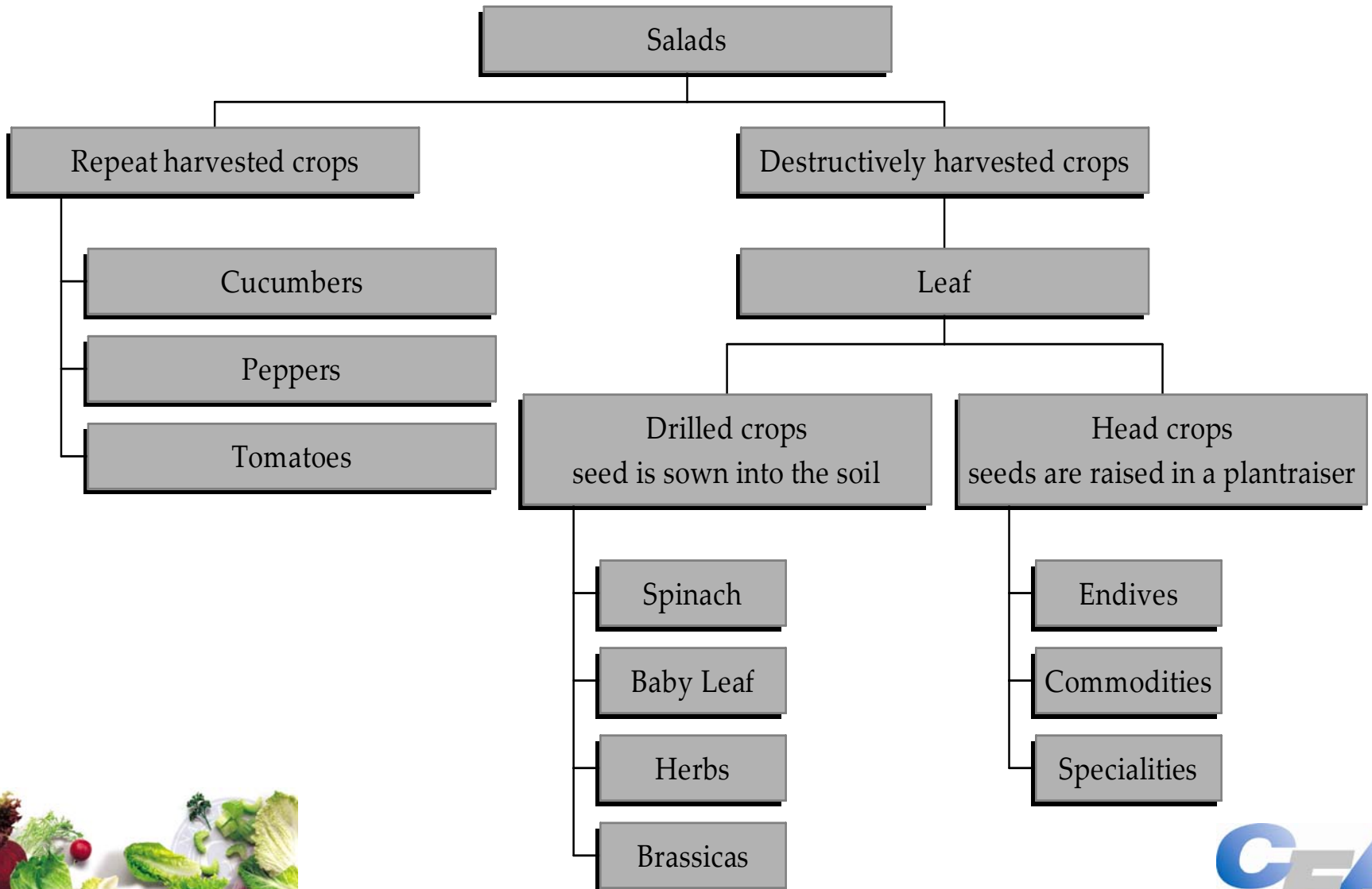
Chilled (produce) Supply Chains

For HPA 13/11/06

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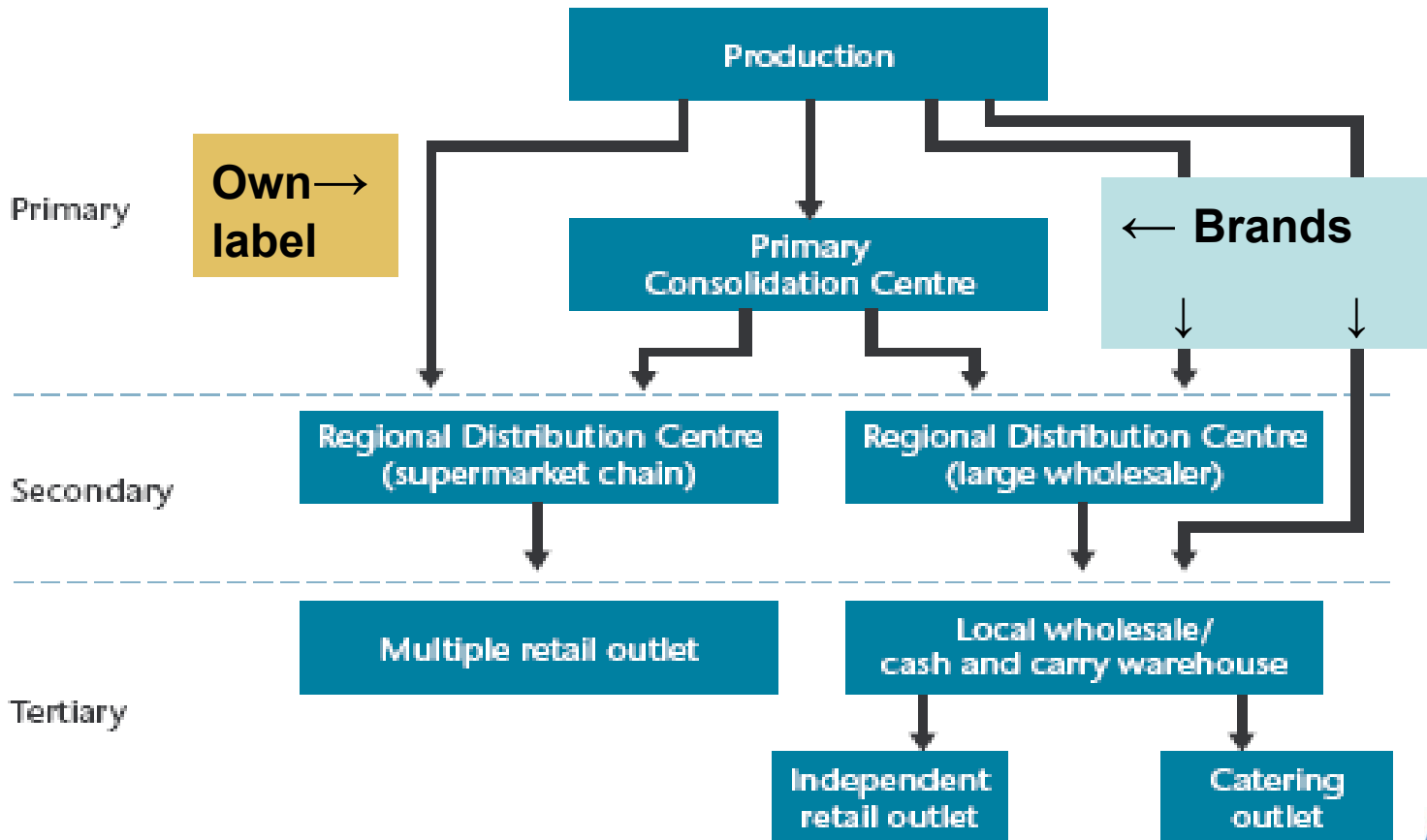


Crop Groups for Prepared Salads



The survey covered the *primary* distribution of food from factories to regional distribution centres (RDCs), either directly or via primary consolidation centres (PCCs), *secondary* distribution trips from RDCs to shops and *tertiary* distribution from wholesale depots to independent retailers and catering outlets (Figure 1).

Structure of food distribution channels



Retail Produce Supply Chains

Market	Retail	
	Major Multiple	Independent
Raw Material Source & Standards	<p><u>Whole</u>: Direct purchase from specified suppliers/dedicated growers with full traceability, Assured Produce etc</p>	<p><u>Whole</u>: Wholesaled –variable standards and traceability</p>
	<p><u>Prepared</u>: Manufacturers supplied direct by specified suppliers/dedicated growers with full traceability, Assured Produce etc</p>	<p><u>Prepared</u>: Some manufacturers supplying prepared produce/ products containing produce to major multiples have their own brands supplying independents, with the same standards as for major multiple supply</p>

Yellow highlight = CFA members

Wholesaled/Publicly Procured Produce

Market	Wholesaled	Publicly Procured
Raw Material Source and Standards	Markets, Cash and Carry	Schools, Hospitals, Prisons etc [In general bought on price]
	Various sources – variable standards and traceability	See Wholesaled – variable standards and traceability
	<u>Whole & Prepared</u> : Some manufacturers supplying major multiples have their own brands supplying wholesale, with the same standards as for major multiple supply	Small amount of direct purchase from growers – variable standards

Yellow highlight = CFA members

Foodservice Produce Supply Chains

<p>Market</p>	<p><u>Major chains</u></p>	<p><u>‘Entrepreneurs’</u> (e.g. non-chain take aways, cafes, restaurants, some franchises inc petrol & railway stations)</p>
<p>Raw Material Source and Standards</p>	<p><u>Whole & Prepared:</u> Specified suppliers with full traceability, Assured Produce etc</p>	<p>Majority wholesaled/spot purchased –variable standards and traceability</p>
		<p><u>Whole:</u> Small amount of direct purchase from growers – variable standards</p>
	<p><u>Whole & Prepared:</u> Some manufacturers supplying major multiples have their own brands supplying foodservice, with the same standards as for major multiple supply</p>	<p><u>Whole & Prepared:</u> Some purchased from major multiples</p>

Yellow highlight = CFA members



Salads Raw Material

Supplier Approval Procedures
into prepared for major UK
retailers

Audit Documentation

- **Supplier Code of Practice and Guideline Documents**
 - Available in English, Spanish, French, Italian
 - Detailed Audit Documentation
 - Same Technical Requirements for all suppliers - UK and Non UK



CFA Guidelines

- **4th edition CFA Best Practice Guidelines for the Production of Chilled Food (2006)**
- **Microbiological Guidance for Growers**
 - English language version (2002) – supported by major UK multiples
 - Spanish version (2004)
 - Finnish version (EVI) (2005)
- **Pesticides Due Diligence (2002)**
- **2nd edition Water Quality Management Guidance (2005)**
- **Guidance on the use & interpretation of micro testing (2005)**
- **CFA/BRC Guidance on the Practical Implementation of the EU Micro Criteria Regulations (2005)**

More than 30,000 copies distributed to date



Supplier Monitoring

- **Specified suppliers**
- All suppliers are monitored by sites against a range of commercial and technical criteria
 - Field practices
 - Irrigation water control
 - Microbial loading (*E. coli*)
 - Pesticide residue analysis
 - Contaminant levels
 - Quality criteria
 - etc

Leaf Production



- Cultivation
- Harvesting
- Leaf chilling
- Processing
- Despatch
- Distribution
- Shelf life



Cultivation

- **Seed selection and screening**
- **Harrowing**
- **Bed forming**
- **Drilling seeds into the seed bed**
- **Irrigation**
 - Source and quality
 - Method of application
 - Type and end use of crop



Harvesting

- **Hygiene**
 - People
 - Medical screening
 - Hygiene training
 - Equipment
 - Cutting whole head
 - Cutting or scything baby leaf
- **Weather conditions**
 - Minimise impact



Chill Controls

- **Remove field heat to minimise micro and biochemical activity**
 - E.g. chilling to 3°C in under 60 minutes
- **We adopt a “keep it cold – move it fast” philosophy**
 - E.g. measure degree hours from harvest to customer



Processing



- **Sorting**
 - Remove damaged produce
 - Remove extraneous matter
- **Trimming**
 - Removed damaged tissue
- **Manual inspection**
- **Mixing leaves**
- **Washing**
- **Bagging**



Post-Process Chain

- **Despatch and distribution to retail**
 - $<5^{\circ}\text{C}$
- **Retail storage**
 - $\leq 8^{\circ}\text{C}$ legally
- **Consumer storage**
- **Shelf life (bagged salads)**
 - UK: 4-7 days
 - USA: 18-21 days

CFA Produce WG

- **Growing controls**



- **Industry guidance**

- CFA Micro Guidance for Growers → Assured Produce
 - ADAS Safe Sludge Matrix (still awaiting UK law)
 - Retailers' protocols
 - 1999 ECFF VTEC WG Report → presented to EC SCF
2000 → 2001 EC SCF produce risk assessment

- **Input into FSA guidance**

- Sprouted seeds production control measures
 - Farmyard manure guidance for growers

- **Research – proactive and reactive**

CFA-funded Research

- **CFA/DEFRA/IFR pathogen attachment research**
 - **Commercial driver = safety (expanding markets)**
 - **Industry commitment**
 - **Potential exploitation**
 - **Business benefits**
 - **Chlorine usage reduction & environmental benefits & potential perceived consumer benefits**
 - **Reducing costly waste**
 - **Sound scientific approach**
 - **Timetable**



Our Positive Impact

- **Volumes of bagged leafy salads (1990+)**
 - UK: 2.6×10^9 packs
 - Worldwide: 1.8×10^{10} packs
- + ***other presentations of prepared produce***
- **Potentially prep leaf-related VTEC incidents**
 - USA 26 outbreaks (>900 cases) (lettuce + spinach) since 1993
 - Europe 2 outbreaks (>200 cases) (wholehead, Sweden)
 - UK 0 outbreaks





Leaf Sales Summer 2006

- From RETAIL sales 28/5-4/8/06 (8 wks)
 - Bagged leaf 60M packs = 180M servings
 - Wholehead 55M units = 265M servings
- **3 week period (average)**
 - Bagged: 24M bags, 70M servings
 - Wholehead: 20M units = 100M servings
 - TOTAL RETAILED: 48M units = 170M servings
 - FOODSERVICE: est 1/3 of retail vol: 35M servings
- **GRAND TOTAL ave 3 wk: 205M servings**
 - ~50:50 Retail:Wholesale (servings)



Conclusions



- **Over a decade of CFA proactive work**
 - Field controls established = critical to assuring safety
 - Best practice guidance in place
 - Attachment research underway
 - Incident alerts and resolution
 - Network of expertise internationally
- **CFA's strong industry ties - authoritative**
- **Government linkage - accessible**
 - FSA
 - DEFRA
 - HPA
 - PSD



***The centre of excellence for the
chilled food industry***

