CFA and Fresh Produce
26/1/13 BHTA

Kaarin Goodburn
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www.chilledfood.org
• CFA aims, approach and members
• Key fresh produce issues
• CFA’s fresh produce-related aims
  – what do we want?
• CFA’s fresh produce-related activities
  – what have we done?
• Guidance available
Chilled Food Association

• What is our Mission?
  – To promote and defend the reputation, value and sustainability of the professional chilled food industry through the development and communication of standards of excellence in the production and distribution of chilled food

  Protect the market by protecting consumers

• Who are we?
  – Represent professional manufacturers supplying UK market
Membership*

Full Members

• Hain Daniels
• G’s Fresh
• Greencore plc
• Kerry Foods Ltd
• Samworth Brothers
• Moy Park Ltd
• Natures Way Foods
• Northern Foods Ltd**
• Pasta Reale Ltd
• Pork Farms Ltd
• Rowan Foods
• Soleco
• S&A Foods Ltd
• Vitacress Salads Ltd
• Young’s Seafoods Ltd (Findus Group)

Associate Members

• Dawn Fresh Foods
• Dearne Valley Foods
• WS Bentley Ltd

CFA represents 75% of the UK’s £10,306m retail chilled prepared food market

* At 22/1/13
** Became part of 2 Sisters Food Group April 2011
Our Overall Strategy

• To promote our standards and sector to regulatory bodies, policymakers and other stakeholders
• For CFA Members to promote CFA standards throughout their supply base
• To catalyse action on issues broader than the chilled food sector alone
• To attract members who
  – Are professional chilled food manufacturers and chilled component/raw material suppliers – demonstrable competence
    – Meet CFA Guidelines standards
    – Are certificated to appropriate technical standards
  – Minimum £20m chilled turnover
Our Overarching Priorities

1. **Lobbying for**
   - appropriate **risk-based regulation** and **Government policy**
   - equitable **enforcement**
   - wider uptake & recognition of **best practice** inc public procurement

2. **Building knowledge**
   - providing **training** tools supporting common enforcement
   - providing **support** to Members
   - **research** funding, promotion, monitoring, reporting

3. **Strengthening supply chain security**
   - up to the minute **alerts and intelligence**
   - **incident** resolution and impact minimisation
   - systems & trade issues feedback inc to HMG to minimise recurrence potential
CFA Key Partnerships

UK Government
Food Standards Agency
Defra
Environment Agency
Wrap
Department of Energy & Climate Change

Trade, Professions, Researchers
DT
Design and Technology Association
Science Council
Improve
HSE
STEMNET
Institute of Food Research

International
British Nutrition Foundation
Chartered Institute of Environmental Health
Royal Environmental Health Institute of Scotland
FAO
EFSA
European Food Safety Authority
British Retail Consortium
Technology Strategy Board
What Are Chilled Foods?
UK Chilled Prepared Food

- Dressed salads
- Leafy salads
- Prepared Vegetables
- Prepared fruit
- Stir fry kits
- Sandwiches
- Sandwich fillings
- Quiche/flans
- Pizza
- Recipe dishes/kits
- Meal Accompaniments
  - Sushi
  - Filled fresh Pasta
  - Soups (some RTE)
  - Sauces (some RTE)
  - Dips
  - Dressings
  - Desserts

Items in green include ready to eat variants
UK Chilled Food: The Most Dynamic Market?

<table>
<thead>
<tr>
<th>Year</th>
<th>Market (£m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>550</td>
</tr>
<tr>
<td>1999</td>
<td>4,550</td>
</tr>
<tr>
<td>2005</td>
<td>7,357</td>
</tr>
<tr>
<td>2011</td>
<td>9,755</td>
</tr>
<tr>
<td>2012</td>
<td>10,306</td>
</tr>
</tbody>
</table>

• ~19x market value growth since 1989 & growing 4.5% p.a.
• Unpreserved - hygiene and safety critical, assured by unrivalled standards and systems
• Seasonal raw materials: Pan-global sources, UK standards
• Integrated supply chains
• Short shelf life
• Significant NPD – 12,000 SKUs, 30-50% churn annually
• Retailer brands dominate - manufacturer brands more prevalent in prepared produce

Source: TNS/Kantar WorldPanel, CFA: www.chilledfood.org/market
UK Chilled Prep Leafy Salads Market

<table>
<thead>
<tr>
<th>Year</th>
<th>Value £m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>180</td>
</tr>
<tr>
<td>2000</td>
<td>221</td>
</tr>
<tr>
<td>2001</td>
<td>260</td>
</tr>
<tr>
<td>2002</td>
<td>400</td>
</tr>
<tr>
<td>2003</td>
<td>470</td>
</tr>
<tr>
<td>2004</td>
<td>442</td>
</tr>
<tr>
<td>2005</td>
<td>454</td>
</tr>
<tr>
<td>2007</td>
<td>519</td>
</tr>
<tr>
<td>2008</td>
<td>538</td>
</tr>
<tr>
<td>2009</td>
<td>715</td>
</tr>
<tr>
<td>2010</td>
<td>774</td>
</tr>
<tr>
<td>2011</td>
<td>820</td>
</tr>
<tr>
<td>2012</td>
<td>866</td>
</tr>
</tbody>
</table>

- 67% market value growth since 2007, 480% since 1999
- Still growing at >5% p.a.

Protect the market by protecting consumers

Source: TNS/Kantar WorldPanel, CFA: [www.chilledfood.org/market](http://www.chilledfood.org/market)
# Key Pathogens with respect to Fresh Produce

## SALMONELLA
- **Found in:** raw foods, poultry, eggs...
- **Targets:** all age groups, especially immunocompromised

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Fever, headache, vomiting, abdominal pain, diarrhea</td>
</tr>
<tr>
<td>Onset time</td>
<td>12-48 hrs</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>1-21 days</td>
</tr>
<tr>
<td>Destroyed</td>
<td>70°C for 2 mins</td>
</tr>
<tr>
<td>Long-term effects (sequelae)</td>
<td>Reactive arthritis, ulcerative colitis, aortic aneurism</td>
</tr>
<tr>
<td>Regulatory limit</td>
<td>Absence in 25g (pre-cut fruit &amp; veg) (EC 2073/2005)</td>
</tr>
</tbody>
</table>

## TOXIGENIC E. COLI (VTEC/STEC)
- **Found in:** sewage/manure, raw foods...
- **Targets:** all age groups

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>(Bloody) diarrhea, abdominal pain, nausea</td>
</tr>
<tr>
<td>Onset time</td>
<td>12-24 hrs</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>1-5 days</td>
</tr>
<tr>
<td>Destroyed</td>
<td>70°C for 2 mins</td>
</tr>
<tr>
<td>Sequelae</td>
<td>Kidney damage (HUS), ulcerative colitis</td>
</tr>
<tr>
<td>Regulatory limit</td>
<td>Absence in RTE foods (EC Gen Food Law 178/2002)</td>
</tr>
</tbody>
</table>
Fresh Produce Issues

• International food safety incidents
  – 1996 fatal *E. coli* O157 outbreaks:
    – Red leaf lettuce (Illinois) – 27 affected
    – Radish sprouts (Japan) – 9,000 affected

• No CCPs for raw ready to eat (RTE) produce!

  “a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level”

• How to control?
What makes produce ready to eat?

- Manufacturer’s/grower’s risk assessment & food design: HACCP plan
- Appropriate field controls
  - Minimise potential for contamination by zoonotic organisms
    - Control usage of organic waste in agriculture
      - No human-derived (sewage sludge)
      - Animal-derived (farmyard manures, abattoir waste) – no ‘raw’ FYM
    - Irrigation water quality: use low risk sources for high risk foods
  - Food handlers
    - CFA's Micro Guidance for Growers
- Hygienic preparation and packing
  - Prevent re-/cross-contamination
  - Washing - remove soil, exudate and associated organisms
  - CFA Best Practice Guidelines for the Production of Chilled Food
- Limited shelf life
  - Ensure peak quality and
  - Minimise opportunity for microbial growth
- Chilled distribution and sale
  - Minimise potential for microbial growth
- Contracts and audits
  - Commercial enforcement
Fresh Produce Issues

- CFA drove ECFF VTEC & Agriculture study (1996-1999)
  - Identified the chain of contamination and control points
  - Presented to the EC in 1999 and SCF in 2000 => SCF risk assessment
  - Urged FSA to act
    ⇒ FYM guidance... published 10 years later!

  - later taken up by UK major retailers
  - elements included in CODEX and FAO/WHO documents

- 11 years on... UK recalls/withdrawals mainly for Salmonella on imported herbs, seeds, leaf

BUT no room for complacency...
# UK-Reported Herb Issues

<table>
<thead>
<tr>
<th>Year</th>
<th>Vehicle</th>
<th>Reported by</th>
<th>Origin</th>
<th>Pathogen</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Lemon thyme</td>
<td>UK</td>
<td>Morocco</td>
<td>Salmonella</td>
<td>RASFF week 3</td>
</tr>
<tr>
<td>2011</td>
<td>Rocket</td>
<td>UK</td>
<td>Italy</td>
<td>Salmonella</td>
<td>RASFF week 25</td>
</tr>
<tr>
<td>2009</td>
<td>Fresh hairy basil</td>
<td>UK</td>
<td>Thailand</td>
<td>Salmonella</td>
<td>RASFF week 23</td>
</tr>
<tr>
<td>2008</td>
<td>Various herbs</td>
<td>UK</td>
<td>Thailand</td>
<td>Salmonella</td>
<td>Sweet basil (Ocimum basilicum), water spinach (Pomoea aquatica), horopa leaf, peppermint (Mentha cordifolia) and Mexican coriander (Eryngium foetidum). RASFF week 46</td>
</tr>
<tr>
<td>2008</td>
<td>Various fresh herbs</td>
<td>UK</td>
<td>Viet Nam</td>
<td>Salmonella</td>
<td>RASFF week 39</td>
</tr>
<tr>
<td>2007</td>
<td>Pre-packed fresh basil</td>
<td>UK, Denmark, Netherlands, (USA?)</td>
<td>Israel</td>
<td>Salmonella Senftenberg</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>Coriander</td>
<td>UK</td>
<td>?</td>
<td>Salmonella typhimurium</td>
<td></td>
</tr>
</tbody>
</table>
## Example Non-UK-Reported Herb Issues

<table>
<thead>
<tr>
<th>Year</th>
<th>Vehicle</th>
<th>Reported by</th>
<th>Origin</th>
<th>Pathogen</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Lemon grass, Fresh coriander</td>
<td>Denmark</td>
<td>Thailand</td>
<td>Salmonella infantis</td>
<td>RASFF week 47, 46</td>
</tr>
<tr>
<td>2012</td>
<td>Laurel leaves, oregano, basil</td>
<td>Norway</td>
<td>Turkey</td>
<td>Salmonella Amersfoort</td>
<td>RASFF week 39</td>
</tr>
<tr>
<td>2012</td>
<td>chilled rucoła</td>
<td>Slovenia</td>
<td>Italy</td>
<td>STEC</td>
<td>RASFF week 39</td>
</tr>
<tr>
<td>2012</td>
<td>Dried basil</td>
<td>Canada</td>
<td>Egypt</td>
<td>Salmonella</td>
<td>RASFF week 39</td>
</tr>
<tr>
<td>2012</td>
<td>Cilantro (coriander)</td>
<td>USA</td>
<td>USA</td>
<td>Salmonella</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Dried mint</td>
<td>Australia</td>
<td>Turkey</td>
<td>Salmonella</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Basil leaves (numerous reports), cockscomb mint, houttuynia, green mint, coriander</td>
<td>Norway</td>
<td>Viet Nam</td>
<td>E coli, Salmonella Javiana, Salmonella Virchow</td>
<td>RASFF weeks 16-18, 20</td>
</tr>
<tr>
<td>2012</td>
<td>Fresh peppermint</td>
<td>Norway</td>
<td>Malaysia</td>
<td>E coli</td>
<td>RASFF weeks 16-17</td>
</tr>
<tr>
<td>2012</td>
<td>Oregano</td>
<td>Italy</td>
<td>Turkey</td>
<td>Salmonella Enterica</td>
<td>RASFF week 6</td>
</tr>
<tr>
<td>2012</td>
<td>Fresh coriander</td>
<td>France</td>
<td>Thailand</td>
<td>Salmonella Jerusalem</td>
<td>RASFF week 6</td>
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<tr>
<td>2011</td>
<td>Fresh rosemary</td>
<td>Denmark</td>
<td>Uganda</td>
<td>Salmonella Newport</td>
<td>RASFF week 49</td>
</tr>
<tr>
<td>2011</td>
<td>Peppermint, coriander</td>
<td>Netherlands</td>
<td>Thailand</td>
<td>Salmonella</td>
<td>RASFF week 49</td>
</tr>
<tr>
<td>2011</td>
<td>Mint leaves</td>
<td>Denmark</td>
<td>Thailand</td>
<td>Salmonella</td>
<td>RASFF week 47</td>
</tr>
<tr>
<td>2011</td>
<td>Rucola salad</td>
<td>Denmark</td>
<td>Italy</td>
<td>Campylobacter</td>
<td>RASFF week 47</td>
</tr>
<tr>
<td></td>
<td>[7 more bacterial]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>Fresh basil</td>
<td>Netherlands</td>
<td>Israel</td>
<td>Shigella sonnei</td>
<td>RASFF week 45</td>
</tr>
<tr>
<td></td>
<td>[18 more bacterial]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>Fresh herbs?</td>
<td>Sweden</td>
<td>Sweden</td>
<td>Cryptosporidium parvum 30 cases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[7 more bacterial, 1 Cyclospora (USA)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>Fresh basil</td>
<td>Sweden</td>
<td>Sweden</td>
<td>Cryptosporidium</td>
<td>21 cases</td>
</tr>
<tr>
<td></td>
<td>[11 more bacterial]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Fresh basil</td>
<td>Canada</td>
<td>Canada/Latin America?</td>
<td>Cyclospora cayetanensis</td>
<td>Cases: &gt;40 Canada, ~300 USA</td>
</tr>
</tbody>
</table>
Fresh Produce Issues

• Most incidents due to breaches of basic hygiene controls in the field (e.g. non-composted manure use, animals in crops/crop storage areas, contaminated irrigation water, food handlers)
  – Identified by FSA Project B17007: http://preview.tinyurl.com/bexfqsdc

• HPA publicly stated (2007) that issues arising in the UK are primarily linked to wholesale and imported produce, which is not subject to the growing and handling controls implemented by the UK’s retail prep produce supply chain

⇒ Need to protect UK plc by protecting consumers
⇒ Requires full uptake of GAP by all growers of RTE crops
CFA Fresh Produce-related Aims

**Strategic**
- Wider uptake of science-based growing standards (Micro Guidance for Growers), highlighting sector differentiation
- Resolve any terminology issues
- Enhance Govt relationships & awareness of chilled sector’s standards
- Identify and engage with scientists researching into produce

**Technical and regulatory**
- Review key research reports & identify research partners
- Track & influence research arising from strategic documents
- Make input into development of non-/statutory requirements

**Incidents**
- Monitor & review causes, feed back into best practice, representation

**Communications**
- Make input into external communications on produce issues
CFA Produce Activities

• 1996
  – *E coli* O157 fatalities linked to contaminated produce
  – European Chilled Food Federation (ECFF) VTEC WG formed

• 1997
  – CFA research priorities identified - VTEC and Cryptosporidium

• 1998
  – ADAS Safe Sludge Matrix (not yet in UK law?)
  – CODEX prepared produce and beansprouts codes begins

• 1999
  – CFA Water Quality Management Guidance published
  – ECFF VTEC & Agriculture Report presented to
    → EC SCF 2002 produce risk assessment
CFA Produce Activities - WG

- **2000**
  - CFA Produce WG established
  - FSA FYM guidance activity began

- **2002**
  - CFA growing controls (MGG1) published
    - Field controls → AP (elements), retailers’ protocols
  - CODEX leafy vegetables + sprouted seeds

- **2004**
  - FSA sprouted seeds guidance meeting
  - Prepared produce site visits for senior FSA and HPA staff begin

- **2005**
  - CFA chlorinated washwater protocol agreed
  - CFA/Defra/IFR pathogen attachment research (AFM234, 2005-8)
  - PSD site visit
  - CFA research priorities taken up by Defra

- **2006**
  - Lobbying HPA & FSA begins for improved supply chain investigation in official outbreak/incident tracking
CFA Produce WG

• 2007
  – CFA Micro Guidance for Growers 2 (MGG2) published
  – FSA FYM guidance published
  – FSA reviews input: irrigation water and other hazards to produce
  – UN FAO/WHO micro risk prioritisation of fresh produce published

• 2008
  – CODEX code annex on leafy veg and herbs
  – UN FAO/WHO Leafy Veg & Herbs Expert Group report inc CFA points
  – Secured change in FSA’s advice to consumers
    – no longer recommends re-washing of pre-washed leaf
    – FSA publicly recognised efficacy of the chilled prep produce sector's standards

• 2009
  – CFA’s MGG2 principles further incorporated into AP protocols
  – Imperial College research – bacterial/plant traits & attachment
  – Fresh produce terminology developed
  – LACORS produce washing guidance
    – wash adjuncts not required to be labelled as additives by default
CFA Produce WG

• 2010
  – EFSA + ECDC recognise importance of GAP
  – FSA roadshows promoting GAP for smaller growers
  – CFA experimental attachment protocol developed
  – CFA washing protocol published
  – CFA decontamination efficacy assessment protocol published
  – CFA RTE vs Ready to Wash rationale for produce agreed

• 2011
  – CFA lobbied FSA to finalise stalled sprouting guidance
    (pre-O104 outbreak)
  – *E coli* O104: 50 dead, 4000 ill, 900 HUS
  – FSA project B17007: RTE fresh produce foodborne illness
    outbreaks and current UK fresh produce farming practices report
    published
CFA Produce WG

• 2012
  – CFA identified decontamination research partners
  – Lobbied FSA on Forward Evidence Plan research needs
  – FSA accepted CFA rationale for RTE produce
  – WRAP promoting digestate in agriculture
    – ACMSF shares CFA’s food safety concerns on RTE crops

• 2013
  – FSA Virus Conference
    – Research priorities
  – EU Veg-i-Trade project input
  – EFSA Opinion on public health risk posed by pathogens that may contaminate food of non-animal origin
  – CFA database: outbreaks/incidents potentially linked to produce
    – 1973 to date
Guidance Available

• **Fields**
  – CFA Microbiological Guidance for Growers
    – Finnish (2005)
  – CFA Pesticides Due Diligence guidance (2002)
    – *Free web-based risk assessment tool* [www.safeproduce.eu](http://www.safeproduce.eu)

• **Factory**
  – CFA Best Practice Guidelines for Production of Chilled Food (4th ed, 2006)
  – CFA Pathogen attachment to produce protocol (laboratory) (2010)
  – CFA Produce wash decontamination efficacy assessment protocol (2010)
  – CFA Produce washing protocol (when using chlorine) (2010)

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

www.chilledfood.org