Ensuring and sustaining the commercial quality of fresh fruit and vegetables - experiences of Hungary -

Dr. Lajos Németh (MRD)
National supervisor of fruit and vegetables inspection

International Workshop on Commercial Quality Standards for Fresh Fruit and Vegetables for Countries of South East, Central and East Europe

Dubrovnik, Croatia
17th – 21st October 2011, Hotel Lero
Overview

- **Difficulties** of establishing an inspection service
- **History**
- **Present situation**
  - Legislation
  - Figures
  - Risk analysis
  - Fees and fines
- **Simplification**
- **Future**
How to consider fruits and vegetables?

Rules from general

Products

Food products

Food products of plant origin

Fruit and vegetables

fresh or processed

General rules (commercial, etc.)

Food regulation (safety, labelling, etc.)

Phytosanitary measures

Common market regulations
• Community aid
• Marketing standards

Difficulties

International workshop, Dubrovnik, 2011.
Aspects of quality

Total quality

Process quality + Produce quality

Food safety (it has to be guaranteed!)
Marketing quality (it has to be inspected!)

legislation, standards
Basis of quality

The need of the consumer

Inspection

Producer + Processor + Trader

Science + Technology
Factors taken into consideration

- Eaten part - variability (root, leaf, fruit, blossom)
- Unequal production of the regions
- Very different volume of deliveries of operators
- Huge possible difference between the subsequent years
- Seasonality,
- Possibility in EU enlargement,
- Similar needs of the non-EU members,
- Changing list of products subject to standards
- Financial possibilities,
- And the influence of all these parameters on the feasibility

Difficulties
## Step by step development

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Application for recognition by the EU</td>
</tr>
<tr>
<td>1994</td>
<td>Introducing the compulsory export inspection for consignments delivered to EU member states</td>
</tr>
<tr>
<td>1996</td>
<td>Answering EU questionnaires</td>
</tr>
<tr>
<td>2000</td>
<td>Introducing compulsory import and domestic inspections</td>
</tr>
<tr>
<td>2001</td>
<td>Approval of inspection by the EU</td>
</tr>
<tr>
<td>2003</td>
<td>Compulsory export inspection to all directions</td>
</tr>
<tr>
<td>2005</td>
<td>Reorganization of the inspection service into the institutional frame of the plant protection</td>
</tr>
<tr>
<td>2007</td>
<td>Concentration of tasks in the Agricultural Office</td>
</tr>
<tr>
<td>2011</td>
<td>Reorganization in government offices</td>
</tr>
</tbody>
</table>

### History

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Present situation

• The ‘Fruit and Vegetables Quality Inspection Service’ is operating in the institutional frame of the plant protection administration organised in the Agricultural Office.
Sharing of tasks

- Governing and supervision
- Co-ordination
- Inspection

Present Legislation

International workshop, Dubrovnik, 2011.
The quality inspection service is organized on three levels

National supervisor
at MRD
Department of Food-chain Control

Co-ordination Centre for Quality Inspection of Fruit and Vegetables at Agricultural Office

Fruit and vegetables inspectors at County Government Offices
Present situation - Staff

• Co-ordination Centre – 6 persons
• Inspectors:
  • 185 trained inspector (also plant heath or other)
  • 76 everyday practice
Hungarian legislation

Decree of the Minister of Agriculture and Regional Development No. 82/2004. (V. 11.) FVM on inspection of fruit and vegetables

- Defines operation of the Fruit and Vegetables Inspection Service in order to fulfil requirements set by Community legislation
- Special features:
  - Inspections at all stages to be performed with the same proceeding practice
  - Qualification of inspectors
  - Lays down rules of the functioning and of the national inspection
  - Consignments to and from MS also inspected (but in case of a great number of conformities decreasing percentage of inspections)
  - Possibility to issue certificates for domestic market
Hungarian legislation

Decree No. 82/2004. (V. 11.) MARD on inspection of fruit and vegetables

- Tasks of the Coordination Centre:
  - reconsiders appeals against the first level decisions;
  - helps to provide technical and IT developments;
  - works out official forms used in the course of the inspection;
  - works out and operates GIS evaluation of monitoring;
  - follows changes of international standards;
  - organizes training courses for inspectors;
  - establishes and maintains direct connections with foreign inspection authorities (notification of non-conformity);
  - records foreign complaints and observations of non-conformity
  - makes proposal for the frequency of inspections;
  - evaluates the findings of inspections regarding the import lots;
  - makes suggestions regarding the assignment of places of inspection;
  - prepares annual report on inspection experiences;
F&V inspection database

Present Figures

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Figures

Fruit and vegetable lots inspected on domestic market, at import and export stage (including shipments to and from EU) (2004-2010)

Present Figures
Data for the year 2010

Inspected lots:

- Export: 2,918
- Import: 25,294
- Internal market: 10,096
- Safety checks of import: 416
- Other samplings (i.e., residue, heavy metals, radiology, microbiology): 2,810
## Factors of the risk assessment and their explanation

<table>
<thead>
<tr>
<th>Position in the marketing chain</th>
<th>Evaluation of the last inspection event</th>
<th>Bonus based on results of the last inspections</th>
<th>Evaluation based on the marketed volume</th>
<th>Evaluation based on area covered</th>
<th>Evaluation of the quality assurance system</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Position in the marketing chain</td>
<td>S2 Evaluation of the last inspection event</td>
<td>S3 Bonus based on results of the last inspections</td>
<td>S4 Evaluation based on the marketed volume</td>
<td>S5 Evaluation based on area covered</td>
<td>S6 Evaluation of the quality assurance system</td>
</tr>
<tr>
<td>4 Shops also selling f&amp;v (E)</td>
<td>4 No action has been taken</td>
<td>4 Produce conform to the standard at the last 3 inspections</td>
<td>4 Some marketed produce in small quantity</td>
<td>4 Local level</td>
<td>4 Employs staff regularly educated in this field</td>
</tr>
<tr>
<td>3 F&amp;v shops (D)</td>
<td>3 NC regards labelling</td>
<td>3 Produce conform to the standard at the last 2 inspections</td>
<td>3 Some produce</td>
<td>3 City level</td>
<td>3 Applies elements of quality assurance system</td>
</tr>
<tr>
<td>2 Supermarkets with central distribution (C)</td>
<td>2 Action: downgrading</td>
<td>2 Produce conform to the last inspection</td>
<td>2 Several products, marketed continuously in small volume</td>
<td>2 County or capital level</td>
<td>2 The operator takes part actively in the correction of the NC</td>
</tr>
<tr>
<td>1 Hypermarkets (B)</td>
<td>1 Action: produce outgraded</td>
<td>1 No action has been taken at the last inspection</td>
<td>1 One product marketed in great volume</td>
<td>1 Country level</td>
<td>1 Lacks information regarding quality requirements</td>
</tr>
<tr>
<td>0 Wholesalers, PO’s (A)</td>
<td>0 Action: more products have been found out of grade</td>
<td>0 Consumer’s reclaim since the last inspection</td>
<td>0 Several products marketed continuously in great volume</td>
<td>0 International level</td>
<td>0 Relation to quality issues has to be improved</td>
</tr>
</tbody>
</table>

### Present Risk analysis

\[
R = 100 - (0.13 \times S_1 \times S_2 \times S_3 \times (S_4 + S_5 + S_6))
\]
Calculation of the risk

\[ R = 100 - (0.13 \times S_1 \times S_2 \times S_3 \times (S_4 + S_5 + S_6)) \]

Frequency of inspection is calculated based on the value of the Risk factor whereas S is safety.

<table>
<thead>
<tr>
<th>Value of R</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>R=0-40</td>
<td>18 month</td>
</tr>
<tr>
<td>R=41-60</td>
<td>12 month</td>
</tr>
<tr>
<td>R=61-80</td>
<td>6 month</td>
</tr>
<tr>
<td>R=81-99</td>
<td>3 month</td>
</tr>
<tr>
<td>R=100</td>
<td>Stays on the list of operators to be inspected</td>
</tr>
</tbody>
</table>

Present
Risk analysis

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Fees

• Fees are applicable at:
  • Export inspection (including issuance of the conformity certificate)
  • Import inspection (including issuance of the conformity certificate)
  • In case of non-conformity in domestic inspection (when fine is imposed)
  • In domestic inspection done on request
Fines

• Shall be imposed in case of non-conformity of the product on domestic market
• It is ruled in the food law (3 cases):
  – Food safety problem
  – Quality problem
  – Labelling problem
Single market and its implementation

• COUNCIL REGULATION (EC) No 1234/2007 of 22 October 2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation)

TITLE II

RULES CONCERNING MARKETING AND PRODUCTION

CHAPTER I

Marketing standards and conditions for the production

Marketing standards
Article 113

Simplification

International workshop, Dubrovnik, 2011.
Single market and its implementation


Simplification

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Single market and its implementation

- Covers all F&V products (some exception)
- Introduces the general marketing standard
- Nr of Specific Marketing Standards decreased
- Still compulsory at all marketing stages
- Control:
  - Export, import
    - Specific marketing standards according to the lot
  - Internal market
    - The general according to the risk assessment
- No inspection of products for industrial processing
- Approved third countries

Simplification

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Single market and its implementation

Main elements of the General Marketing Standard:
1. Minimum quality requirements
2. Minimum maturity requirements
3. Tolerance
4. Marking of origin of produce
## Single market and its implementation

### Specific Marketing Standards

<table>
<thead>
<tr>
<th>Product</th>
<th>Standards</th>
</tr>
</thead>
</table>
| apples            | citrus fruit 
|                   | (lemons, mandarins, oranges)                                      |
| kiwifruit         | lettuces, curled-leaved endives 
|                   | and broad-leaved (batavian) endives                              |
| peaches and nectarines | sweet peppers                                             |
| pears             | table grapes                                                     |
| strawberries      | tomatoes                                                         |

**Simplification**

International workshop, Dubrovnik, 2011.
### UN/ECE Standards
#### Fresh fruits

<table>
<thead>
<tr>
<th>Annonas FFV-47</th>
<th>Citrus fruit FFV-14</th>
<th>Pears FFV-51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples FFV-50</td>
<td>Fresh figs FFV-17</td>
<td>Plums FFV-29</td>
</tr>
<tr>
<td>Apricots FFV-02</td>
<td>Kiwifruit FFV-46</td>
<td>Strawberries FFV-35</td>
</tr>
<tr>
<td>Avocados FFV-42</td>
<td>Mangoes FFV-45</td>
<td>Table grapes FFV-19</td>
</tr>
<tr>
<td>Berry fruits FFV-57</td>
<td>Melons FFV-23</td>
<td>Watermelons FFV-37</td>
</tr>
<tr>
<td>Cherries FFV-13</td>
<td>Peaches and nectarines FFV-26</td>
<td></td>
</tr>
</tbody>
</table>

**Simplification**

International workshop, Dubrovnik, 2011.
### UN/ECE Standards

#### Vegetables

<table>
<thead>
<tr>
<th>Artichokes</th>
<th>Ceps</th>
<th>Fennel</th>
<th>Potatoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-03</td>
<td>FFV-54</td>
<td>FFV-16</td>
<td>FFV-52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Asparagus</th>
<th>Chanterelles</th>
<th>Garlic</th>
<th>Rhubarb</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-04</td>
<td>FFV-55</td>
<td>FFV-18</td>
<td>FFV-40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aubergines</th>
<th>Chicory</th>
<th>Headed Cabbages</th>
<th>Ribbed celery</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-5</td>
<td>FFV-38</td>
<td>FFV-09</td>
<td>FFV-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beans</th>
<th>Chinese cabbages</th>
<th>Leafy vegetables</th>
<th>Root and tubercle vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-06</td>
<td>FFV-44</td>
<td>FFV-58</td>
<td>FFV-59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Broccoli</th>
<th>Courgettes</th>
<th>Leeks</th>
<th>Shallots</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-48</td>
<td>FFV-41</td>
<td>FFV-21</td>
<td>FFV-56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brussels sprouts</th>
<th>Cucumber</th>
<th>Lettuce and endives</th>
<th>Sweet peppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-08</td>
<td>FFV-15</td>
<td>FFV-22</td>
<td>FFV-28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carrots</th>
<th>Cultivated mushrooms</th>
<th>Onion</th>
<th>Tomatoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-10</td>
<td>FFV-24</td>
<td>FFV-25</td>
<td>FFV-36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cauliflowers</th>
<th>Edible sweet chestnuts</th>
<th>Peas</th>
<th>Truffles</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFV-11</td>
<td>FFV-39</td>
<td>FFV-27</td>
<td>FFV-53</td>
</tr>
</tbody>
</table>

**Simplification**

International workshop, Dubrovnik, 2011.
<table>
<thead>
<tr>
<th>Almond, inshell DDP-18</th>
<th>Dates DDP-08</th>
<th>Macadamia nuts, inshell DDP-22</th>
<th>Prunes DDP-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almond kernels, blanched DDP-21</td>
<td>Figs, dried DDP-14</td>
<td>Peaches, dried DDP-20</td>
<td>Sweet almonds, unshelled DDP-05</td>
</tr>
<tr>
<td>Almond kernels DDP-06</td>
<td>Grapes, dried DDP-11</td>
<td>Pears, dried DDP-23</td>
<td>Tomatoes, dried DDP-19</td>
</tr>
<tr>
<td>Apples, dried DDP-16</td>
<td>Hazelnut kernels DDP-04</td>
<td>Pine nuts, decorticated, peeled DDP-12</td>
<td>Walnut kernels DDP-02</td>
</tr>
<tr>
<td>Apricots, dried DDP-15</td>
<td>Hazelnuts, inshell DDP-03</td>
<td>Pistachio kernels and peeled pistachio kernels DDP-10</td>
<td>Walnuts, inshell DDP-01</td>
</tr>
<tr>
<td>Cashew kernels DDP-17</td>
<td>Macadamia kernels DDP-23</td>
<td>Pistachio nuts, inshell DDP-09</td>
<td></td>
</tr>
</tbody>
</table>
## Comparison of standards and the general standard

<table>
<thead>
<tr>
<th>Product</th>
<th>Category</th>
<th>General marketing standard</th>
<th>Provisions of UNECE standards in Class II.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peas</td>
<td>Classification:</td>
<td>-</td>
<td>√ (+class I.)</td>
</tr>
<tr>
<td></td>
<td>Tolerance:</td>
<td>10% + 2 %</td>
<td>10% + 2 %</td>
</tr>
<tr>
<td></td>
<td>Minimum size:</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sizing:</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cherries</td>
<td>Classification:</td>
<td>-</td>
<td>√ (+Extra, class I.)</td>
</tr>
<tr>
<td></td>
<td>Tolerance:</td>
<td>10% + 2 %</td>
<td>10% + 4 %</td>
</tr>
<tr>
<td></td>
<td>Minimum size:</td>
<td>-</td>
<td>17 mm+</td>
</tr>
<tr>
<td></td>
<td>Sizing:</td>
<td>-</td>
<td>Uniformity in size is not compulsory</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Simplification**

International workshop, Dubrovnik, 2011.
## Comparison of standards and the general standard

<table>
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</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Classification:</td>
<td>-</td>
<td>√ (+Extra, class I.)</td>
</tr>
<tr>
<td></td>
<td>Tolerance:</td>
<td>10%+2%</td>
<td>10%+2%</td>
</tr>
<tr>
<td></td>
<td>Minimum size: Length</td>
<td>-</td>
<td>Short 12-17 cm Long &gt;12 cm Tips&lt; 12 cm Not bounded: white and violet: 12-22 cm Violet and green: 12-27 cm Difference: bounded: 5 cm</td>
</tr>
<tr>
<td></td>
<td>Diameter:</td>
<td>-</td>
<td>White and violet: 8 mm Violet and green: 3 mm</td>
</tr>
<tr>
<td></td>
<td>Sizing:</td>
<td>-</td>
<td>According to length or diameter</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
<td>-</td>
<td>Max length for white and violet: 22 cm For violet/green: 27 cm</td>
</tr>
</tbody>
</table>
Future
Rules and practice

Food regulation
(Main aim is consumer protection)

Horizontal

Special rules of f & v
(Main aim is market regulation)

Vertical

Globalised commerce

Globalised inspection

Future

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Future

Rules and practice

Common market  ↔  Domestic market

Products covered by standards  ↔  Products not covered by standards
(national standards ??)

Fresh f & v  ↔  Ready to cook f&v
Strengthening uniform application of Community rules

- More, but simple standards

Results:
- Equal inspection pressure would facilitate trade and
- At the same time more effective protection of consumers’ interest
Do producer and consumer to be aware of all the sciences?

Future

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3D-Integration in fruit and vegetables inspection

Aspects of quality

Import inspection
Export inspection
Domestic inspection
Level of inspection

technology
phytosanitary
residues
marketing quality
standards
heavy metal residues
mycotoxins
variety

Grapes
citrus
Bananas
Avocado
Artichokes
Apple

Level of inspection

Future

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Challenges

- Which inspection areas should be included?
- Which products should be included?
- What kind of certification should we use?
- How to overcome the problems due to different institutional structure of the different member countries?

Future
A feasible system can be imagined only if

- It means no technical barrier to trade.
- It is accepted by all parties.
- It is open and voluntary.
- It gives long enough time to introduce.
- It is cost effective.
- It is cheaper for the operators.
- It informs the consumer (unlike most of the private standards).
- It presents added value.

Future
Advantages

• Based on sender country certification.
• All participants are known.
• Less administrative burden.
• Cost effective.
• Better traceability.
• Would be less ban.
• Taking sample could be before packaging.
• Certificate is given to the country aimed.
• More than just integrated plant protection/plant production.

Future
Disadvantages

• It is very hard to realise.
• Only gradually could be introduce.
Or just pure pleasure?

Simplification
Thank you for your attention!