Mat Kersten

- **Specialist quality – affairs fruit and vegetables:**
  - **national overview quality inspections;**
  - **training of inspectors;**
  - **high- lighting quality –issues (risk-analyses)**

Objectives: uniformity in performance of inspections, especially interpretations of the EU-standards.

Involved in Twinning training projects and UN-ECE workshops abroad

KCB founded in 1924
Since 1997 accreditation ISO 17020

Tasks of the KCB (in order of the Ministry of Agriculture)

- **Supervision on regulations on quality of fresh fruits and vegetables:**
  - > **Import and export inspections, monitoring produce for the internal (EU) market, and issuing export certificates**
- **Fytosanitary inspections:**
  - > **import and export inspections and issuing fytosanitary certificates:**

Inspectors fitting out

- company car
- PDA
- laptop in case of a management job
- reference material like a book with pictures
- knife and other small equipment
- several equipment for measuring
- weight scale (6, 16 or 32 kg)
- refractometer
- penetrometer
- magnifying glass
- box for al the materials
- mobile phone
- industrial clothing
- each own KCB E-mail adress

STRAWBERRIES

Fragaria L

Mat Kersten,
Specialist Quality Affairs KCB Holland

The standard applies fruit growing from Fragaria L to be supplied fresh to the consumer. Strawberries for industrial processing being excluded

Strasberries (interbreed strawberry x raspberry)

Not covered

Strawberries and other fruit

Position of strawberries in the worldwide fruitproduction:
(excluded watermelons 100 billion kg)

Worldwide production of all kinds of fruit 500 billion kg

- Bananas	14 %	*)
- Table grapes	13 %	*)
- Apples	12 %	*)
- Oranges	12 %	*)
- Other citrus	9 %	*)
- Strawberries	1 %	

*) source FAO

STRAWBERRY PRODUCTION IN THE EU

Production in 2005

Spain	300 million kg
Italy	150
Germany	145
Poland	185
France	50
UK	50
Belgium	60
Netherlands	40

source FAO stat

STRAWBERRY PRODUCTION WORLDWIDE

Production in 2005 (3,6 billion kg) in order of amount:

US	1050	million kg
Spain	300	
Russian Federation	210	
South Korea	200	
Japan	190	
Poland	185	
Turkey	160	
Italy	150	
Germany	150	
Mexico	130	
Maroc	120	
Egypt	100	
Belgium, Netherlands, UK, France	50	

source FAOstat

Production in Holland

- 2300 ha field grown
- 230 ha greenhouses

Production in 51 miljoen kg

Export in US dollar incl. re-export

Top 10

Spain	450 million
US	235
Belgium	130
Netherlands	115
France	90
Mexico	80
Italy	55
Germany	30
Maroc	27
Poland	15

source VN Comtrade / LEI

Nursery garden

After storage in frozen conditions, the plants are growing on fields in small buckets with peat, before they go in bigger buckets or peat bales for production

METHODS

- In greenhouses
- In tunnels
- Field grown

Greenhouses

Greenhouses

In buckets

Peat bales

Open air on tables and covered if needed

Field grown on small heightens and covered with tunnels

Field grown on small heightens uncovered

Field grown none protection straw keeps the fruits free from soil

Blossom, in contradistinction with other fruit, a lot of pestels

Fruit development

Presentation

Packing station

Minimum requirements

- intact
- clean, practical free from foreign matter
- fresh appearance, but not washed
- practical free from pests and damaged caused by pests
- with calyx
- free from abnormal external moisture
- satisfactory development and maturity
- They must be picked carefully

Major defects

- Rotting fruit
- Heavy cracks at the shoulders
- Bruises who are wet
- Fruit from broken stalks
- Unripe

For majors we accept 3 %

Minor defects

- Slight traces of soil
- Misshapen
- Discoloration
- Slight (dry) bruises
- White colouration
- Without calyx (tolerances) but only in case the fruit is not damaged
- Very slight cracks at the shoulders

Requirements for class Extra

- Must show excellent fruit
- Free from traces of soil
- A bright skin, depend of the variety

Requirements for class I

The fruits must show:

- A colouring and shape that belongs to the variety

Class I

Allowed is:

- Slight misshapen
- White colouring till 10% of the surface
- Very slightly bruises
- Very slightly traces of soil

Class II

Allowed is :

- misshapen
- White colour till 20% of the surface
- Slightly bruises, but dry
- Traces of soil
- Small cracks at the shoulders

Sizing

Minimum size

- Class Extra: 25 mm
- Class I en II: 18 mm

Allowed in class I

- Slight misshapen

Allowed in class I

- Slight misshapen

Allowed in class I

- Slight misshapen

Allowed in class I

- Slight misshapen

Allowed in class I

- Slight misshapen

Allowed in classI

- Slight misshapen

Allowed for class I

- Without calyx inside the 10% tolerance, the fruit flesh may not be damaged

Allowed for class I

- White nose

Allowed in Class I

- White nose

Allowed in Class I

- White shoulders

Allowed in Class I

- Red calyx, natural view sign of ripeness

Allowed in Class II

- Green white colour

Allowed in Class II

- bruises

Allowed in Class II

- bruises

Allowed in Class II

- Shape and bruises

Allowed in Class II

- misshapen

Allowed in class II

misshapen

Allowed in Class II

- misshapen

Allowed in class II

- Discoloration only a small part of the calyx

Allowed in class II

cracks

Allowed in class II

- Black nose

Not allowed

- Open fruit

Not allowed

- Damaged fruit

Not allowed

- damaged

Not allowed

- Hail damage

Not allowed

- Rotting fruit

Not allowed

- soiling

Not allowed

- soil

Not allowed

- Fruits from broken stalks

Tolerances

- Class Extra:

5% of product which satisfy class II. Inside these tolerances, 2% of the fruits may be damaged

Tolerances

- Class I:

  10% of product which satisfy class II. Inside these tolerances, 2% of the fruits may be damaged

Tolerances

- Class II:

  10% of product not satisfying class II, with exception of rotting fruit or other defects rendering fruit unfit for consumption. Inside these tolerances, 2% of the fruits may be damaged

Labelling

- Name and adress of the packer or dispatcher
- Name of the product in case of closed package
- Country of origine
- Class

Name of the variety is not obligatory

Thank you for your attention!

Questions?