



# Contract Cultivation and Closed Circuit Cultivation CCC<sup>®</sup>

Jaakko Laurinen

Development Manager, Raisioagro Ltd.

# Raisio – contract cultivation

*"Farmers choose Raisio as a reliable fore-runner in contract cultivation as a preferred partner in grain and oilseed marketing"*

## 1. Cultivation contract

- Malting barley, milling wheat and rye, food oats, feed grains, rapeseed, camelina, pure oats etc.

## 2. Services

- Advisory service
- Extranet, grain analysis, weather, haulage, magazine etc.
- CCC®

## 3. Production inputs

- Seeds, fertilizers, pesticides etc

About 2 500 contract farmers



# Raisio contract cultivation procedure



**Cultivation contract between Raisio and farmer**



**Tilling, sowing and fertilisation according to environmental regulations and Raisio advisory service**



**Crop protection according to regulations and Raisio advisory service**



**TRACEABILITY**



**Transport directly from farms to factory**



**Drying and storage on farm**



**Harvesting after 100-120 days from sowing**



# Contract cultivation ensures traceability



## 1 Cultivation contract

- Variety base
- Basic terms
- RED terms
- Book-keeping\*
- Farm audits if needed



## 2 Cultivation on the fields

- Advisory service\*
- Field inspections when needed
- R&D\*



## 3 Drying and storage (farm)

- Heat drying
- Storage according to the quality
- Pre-sampling if needed

- \*Book-keeping
- Farmer data
- Farmers assurance for meeting RED terms
- Cultivation data



- \*Advisory service
- GAP-guide
- Cultivation guide, programs
- Telephone help-desk
- Extranet, SMS-alerts, E-mails
- Magazine, brochures etc..
- Seminars, field days
- Weather service
- Environment index and carbon footprint

- \*R&D
- Farm level trials
- Plot trials
- Projects



## 6 Storage - processing

- Monitoring and analysis
- Technical quality
- Undesirable substance
- Book-keeping: RED terms



## 5 Intake

- Identification (contract id.)
- Analysis
- Technical quality
- Undesirable substances



## 4 Transport

- Directly from farms
- Drivers training
- Truck audit



# Directly from farm to Raisio

1. Direct contracts
  2. Direct information flow
  3. Direct transport of grain and oilseed
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# Closed Circuit Cultivation CCC®

Good crop is the best way to protect the environment!

Productive inputs

- Money €
- Nitrogen N
- Phosphorus P
- Sodium K
- Seeds
- Pesticides
- Lime CaCO<sub>3</sub>
- Energy kJ

Cultivation practices

- Soil structure
- Heat
- Water
- Sun light

Efficiency indices\*

CarbonPlus

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, €

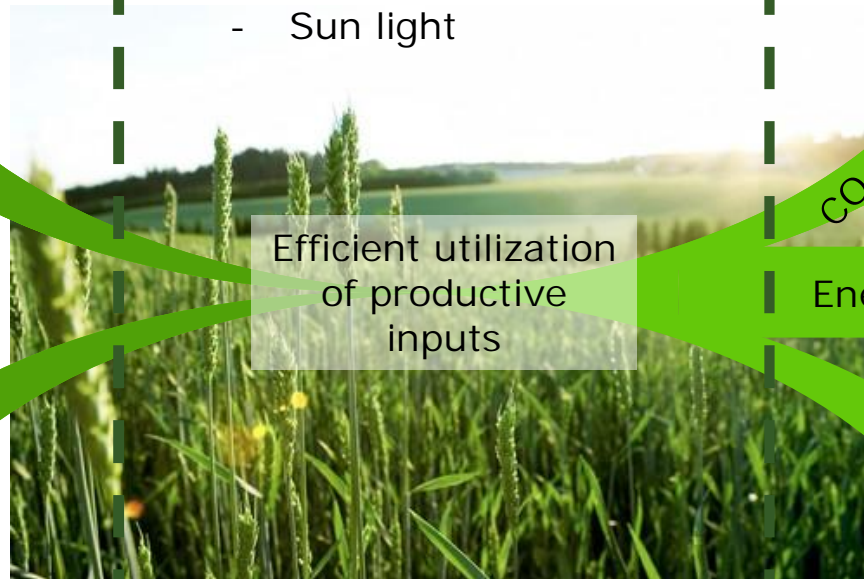
Energy kJ, €

EcoPlus

NO<sub>3</sub>, PO<sub>4</sub>, €

WaterPlus

Efficient utilization  
of productive  
inputs

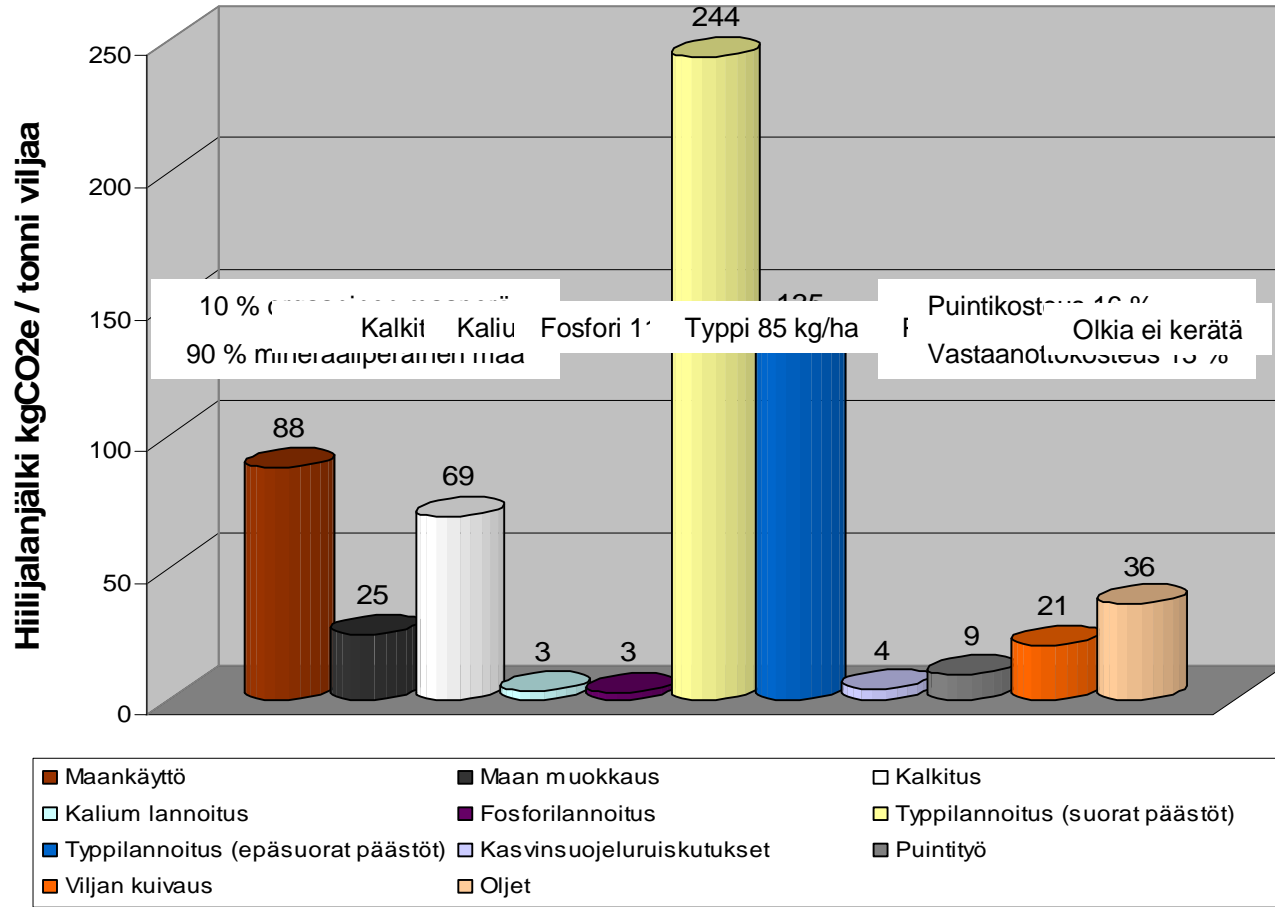


\* In proportion to grain yield

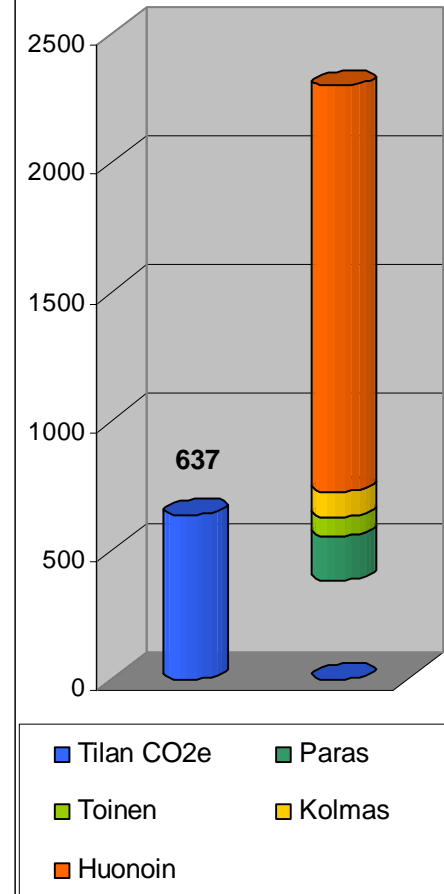
# CarbonPlus à Carbon Footprint of Cultivation



## Hiilijalanjäljen muodostuminen viljan viljelyssä Mallasohra, sato 4200 kg/ha



## HIILIPLUS



# Examples of carbon footprints according to Raisio contract cultivation data

Takes pesticides into account. Grain transport to factory not included

- Oats: 631 kgCO<sub>2</sub>eq / ton oats. Yield level 4852 kg/ha year 2008.
  - Wheat: 737 kg CO<sub>2</sub>eq / ton wheat. Yield level 4226 kg/ha year 2008 (sis. kevät ja syysvehnän tiedot).
  - Rye: 745 kgCO<sub>2</sub>eq / ton rye. Yield level 4244 kg/ha year 2008.
  - Barley: 637 kgCO<sub>2</sub>eq / ton barley. Yield level 4258 kg/ha years 2004-2008.
  
  - Yield level makes difference on merkitystä:
    - Barleys carbon footprint with yield level 6500 kg would be 452 kgCO<sub>2</sub>eq / ton barley.
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