EuroCrop – research needs to improve EU potato crop competitiveness

Dr Mike Storey
R&D Director
Potato Council
Climate change & energy costs

Hot weather pushes up price of fruit and veg

The price of some vegetables has risen by more than a third because of last summer’s heatwave, it emerged yesterday.

The dry summer and wet weather affected the elderly, who are the biggest consumers of fresh produce.

The price of onions, which were selling at 60p a kilo which was up by 17 per cent on the price at this time last year, was the highest.

Looking at this year’s salad crops, the increase for tomatoes was out at 11 per cent, or 4pf a kilo.

For National Statistics. The price of a dozen medium eggs is up 20p to 46p.

The price holidays are particularly steep because UK producers can’t make up by imports from overseas.

Britain’s energy crisis: Twisting in the wind

Fuel bills are soaring due to our increasing reliance on imported gas. Wind power should be part of the answer but realising the government’s grand plans could end up costing the average customer an extra £400 a year.

Heatwave means we are running out of veg

By Sean Poulter

Consumer Affairs correspondent
CHIPS ‘CAN INCREASE THE RISK OF BREAST CANCER’

Frying can raise the risk of cancer

Soaking potatoes ‘cuts cancer risk’

Fussy eater is killed by diet of chips and toast

Acrylamide & health
EU proposals threaten crop yields

By William Surman

OVER the past 12 months the world population has swelled by 70 million and global food stocks have plummeted. Farmers have been unable to...
Sustainability indicators
• What is EuroCrop?
• Developing a common vision for R&D for future competitiveness of Arable Crops in the EU
• “Scoping exercise - Horizon scanning” to 2015
• Why need to do it? – resilient research chain to meet future scenarios
  Legislation changes e.g. pesticides
  Input costs e.g. energy and fertiliser
• Who needs to know? – EU / Member States/ research institutions/ industry
Two interactive levels

Political/economic – EU & Global level

Understanding the Arable Crop System

- What is going to change?
- Evaluation of system strengths & weaknesses
- Identification of drivers & future challenges
- Building scenarios
- Rank alternatives

Scientific level

- Analysis of present research facing drivers & challenges
- How to fill the gap?
- Description of deliverables

Two interactive levels
crop chains and x-sector
The Competitive Environment for Arable Crops

- EU outlets and demand
- Social & economic
  - citizens demands
  - consumer needs
- EU agro-industry
- Environment
  - soil degradation
  - water availability
  - climate change
- Crop chains
- Global markets & trade
  - world food/non-food supply
  - energy
  - currency
- WTO
- Policies & regulations
  - CAP reform
  - EU enlargement
- Rural issues
  - land use
  - demographics
- Competitiveness in 2015
  - costs
  - yield
  - innovation
Crop chain analysis

Crop/value chains

cereals

minor cereals

oilseeds

sugar beet

fibre crops

potatoes

grain legumes

maize
A cross-cutting approach

Crop/value chains

- Agriculture production systems
- Farm economics and production costs
- Markets and outlets
- Quality and safety of products
- Environmental impacts
- Socio-economic issues
Two key drivers identified for 2015

- Continued demand for fresh potatoes and processed potato products
- Sustainable competitive potato production
<table>
<thead>
<tr>
<th>Drivers</th>
<th>Challenges</th>
<th>Themes</th>
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<tr>
<td><strong>Sustainable competitive potato production</strong></td>
<td><strong>Meeting crop specifications</strong></td>
<td>• Crop protection challenges</td>
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<td>• Marketable yields</td>
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<td>• Impact on the environment</td>
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<td>• Innovation in crop production</td>
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<td>• Citizens’ demands - Assurance</td>
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<td>• Public &amp; private research issues</td>
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<tr>
<td><strong>Price</strong></td>
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<td>• Production costs (seed, chemicals, nutrients)</td>
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<td>• Storage</td>
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<tr>
<td></td>
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<td>• Water, waste, transport, energy</td>
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<td>• Crop chain dynamics</td>
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<td>• Whole crop utilisation</td>
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<td><strong>Food</strong></td>
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<td>• Quality &amp; safety</td>
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<td>• Processing industries</td>
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<td>• Outlets, distribution</td>
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<td>• Competitor products &amp; actors</td>
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<td><strong>Seed</strong></td>
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<td>• Quality standards</td>
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<td>• Phytosanitary regulations</td>
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<td><strong>Industrial</strong></td>
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<td>• Starch, alternative products, bioenergy</td>
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<td>Research need</td>
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## Challenge, research and outputs

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<td>Improve utilisation of potato in processed products</td>
<td>Improved understanding of functionality of potato as a raw material</td>
<td>• Produce processed products &amp; convenience foods with improved taste and texture</td>
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<td>• Exploit new cooking /processing technologies in 2015</td>
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<td>• Develop potato-based products with improved nutritional benefits</td>
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<td>To identify and exploit compounds in potato for non-food uses</td>
<td>Evaluate phytochemical diversity in potato &amp; related spp to exploit the chemicals for non-food uses</td>
<td>• Phytochemicals for use in industrial processes – new market opportunities</td>
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### Photos from SCRI

- **Blackleg disease**
- **Pectobacterium**
- **Potato Cyst Nematode**
- **Phytophthora infestans**
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| Sustainable production | Evolutionary potential of pests & pathogen populations                              | Mapping & interpretation of the genetic diversity of key potato pests / pathogens across EU | • EU-wide information exchange to promote best practice for control  
• Ability to anticipate changes in pest / pathogen population distributions |
Scenarios 2015

EU SCENARIOS

• Competitive productive agri-business
• Europe of regions - subsidiarity
• High environmental performance – Green Europe
• Challenge of climate change
Genotype x Environment x Management

Input constraints energy / pesticides

DSS improved management - yield

Drought resistance CO2 response

Climate Change

Green Europe

EU regions

Diversification Local economy Organics

Productive agribusiness
Deployment of cost effective Marker Assisted Breeding

Improved drought resistance

Improved disease resistance

EU regions

Novel uses local consumers/business needs

Climate Change

Improved drought resistance

Scenarios NOT mutually exclusive

Adoption new cv’s with novel market characteristics

Productive agribusiness

Green Europe
Key technologies - Utility

Exploit genomics and related technologies – potato & pathogens

Development and deployment of commercially viable Marker Assisted Breeding

Realise potential of GM e.g. through gene stacking, multiple trait modification

Appropriate robust sustainability indicators for policy makers and public - measuring and comparing impacts to improve resource use efficiency
What does it mean?

- Direction for EU research support for potatoes – part of AC system
- Identifies strategic science skill to remain competitive
- GB well placed internationally – e.g. SCRI
- Germplasm collections crucially important resource
- Need to engage internationally in joint initiatives – scale of programmes and levels of funding
- GM issues higher on the EU agenda - need to prepare and engage in renewed debate
Acknowledgements

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