Crops KT Department

To transfer sustainable science based advice to maximise farmer profits and support the wider crops sector.

Crops KT Specialist Team

Michael Hennessy (Head of Department)

Specialists - Mark Plunkett, Shay Phelan, Ciaran Collins

Joint Program (Malt barley) – Eoin Lyons

EIP Project – Jimmy Staples,
Research Programme Structure

- 4 Programmes
  - Food
  - Animal and Grassland
  - Crops, Environment and Land Use
    - Crops KT Department
  - Rural Economy And Development

Advisory Service
300 advisors
The Department

- 4 FTE in Department
  - Special projects
    - Industry
    - EIP – Grass weeds
    - Masters students (Cd)
  - Intensive support for 16 FTE B&T Tillage advisers
Department Focus

- To transfer sustainable science based advice to maximise farmer profits and support the wider crops sector

- Leadership in the area for the wider organisation (Approx. 250 FTE advisors/teachers)
  - Support KT activities for all crops
  - Develop relevant messages

- The wider industry
  - Providing information/catalysis for change
  - Developing joint industry initiatives
Integrating Research and Knowledge Transfer

Researchers create new knowledge

Specialists mould this knowledge into information for farmers

Stakeholders participate in programme reviews

Advisers work with farmers to implement the new technology
Overview of the Programme

Crops KT Department

Support of other Advisors in:
- Grassland
- SUD, schemes, soils

Research Projects
- Design &
- KT element

Industry
- Programmes
- Training

Schemes and Legalisation

Crop Agronomy
- Strategies, Research, IST

Soil Nutrient

Financial analysis
- Budgets, benchmarking, etc.

Courses
- IPM, Nutrient, Energy

Policy Support

Agriculture and Food Development Authority
140,000 Farmers

Advisory model - operational version of Teagasc AKIS

45,000 Clients

12,000 Discussion Group members

Research Farm
Oak Park

BETTER farms
Tillage – 3
Demo farms
ECT 10
Malt Barley (JP) 6
Farming in Ireland

- Total land area
  - 6.9 million hectares

- Total agricultural area
  - 4.4 million hectares
  - 80% grassland
  - 8% arable

- Forestry
  - 745,000 hectares
Land use
total area 4.4 m hectares

- Silage and hay: 80.8%
- Rough grazing: 11.0%
- Cereals: 6.6%
- Fodder crops: 0.7%
- Combinable break crops: 0.5%
- Other crops: 0.1%
- Veg and hort: 0.3%
Irish Climate

How Often Does it Rain?
The general impression is that it rains quite a lot of the time in Ireland, but two out of three hourly observations will not report an measurable rainfall.
Cropping 2018
total area 307,000 ha

- winter wheat 18%
- spring wheat 1%
- winter barley 19%
- spring barley 40%
- winter oats 3%
- spring oats 3%
- Beans and peas 3%
- oilseed rape 2%
- potatoes 3%
- maize 5%
- fodder beet 3%
- potatoes 3%
- maize 5%
- fodder beet 3%
Disease control essential in Irish Crop Production

- High yields but...
  - Extremely high disease pressure
  - Up to 50% yield reductions
Wheat area 2016

- Russian Federation
- India
- China
- United States of America
- Australia
- Kazakhstan
- Canada
- France
- Argentina
- Germany
- Denmark
- Ireland
- Belgium
- New Zealand
Wheat Yield 2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Yield t/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>9.0</td>
</tr>
<tr>
<td>Germany</td>
<td>7.3</td>
</tr>
<tr>
<td>Denmark</td>
<td>7.0</td>
</tr>
<tr>
<td>Belgium</td>
<td>6.9</td>
</tr>
<tr>
<td>China</td>
<td>6.6</td>
</tr>
<tr>
<td>France</td>
<td>6.3</td>
</tr>
<tr>
<td>United States of America</td>
<td>5.7</td>
</tr>
<tr>
<td>Argentina</td>
<td>5.4</td>
</tr>
<tr>
<td>Canada</td>
<td>5.1</td>
</tr>
<tr>
<td>India</td>
<td>4.8</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>4.5</td>
</tr>
<tr>
<td>Australia</td>
<td>3.9</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Barley area 2016

- Russian Federation
- India
- China
- United States of America
- Australia
- Kazakhstan
- Canada
- France
- Argentina
- Germany
- Denmark
- Ireland
- Belgium
- New Zealand
Barley yield 2016

Yield T/ha

Ireland
New Zealand
Germany
Belgium
Denmark
France
China
United States of America
Argentina
Canada
India
Russian Federation
Australia
Kazakhstan
Arable production in Ireland

- High yield
- High costs
  - Structure
  - Disease pressure
- Continued reliance on CPP – sustainable?
- Need improved genetic material
- BUT - No native cereal breeding
Programme Key Activities

- In-service training – technical and financial
- Industry Training
  - Key industry publications: Crop Report
- Industry Joint Programmes
  - Malting Barley
- BETTER Farm projects
- National events and competitions
- Membership of internal and external working groups
- Development of decision support tools – manual and computer/online
- Research - KT activities of projects
  - Horizon 2020, Stimulus and Core funded projects
- Social Media, YouTube, videos, etc
- Publications
Adding Value

Agronomy and IPM

Scheme Support

Financial & Cost Control

Winter Crop Walks
Teagasc invites all interested in the tillage sector to a nationwide series of winter crop walks. Meet the local Teagasc Tillage adviser and get the latest updates from Teagasc specialists.

Topic covered will include:
- Winter Barley Advice
- Fertiliser advice for Winter Crops
- Fungicide Advice for Winter Crops
- Greening crops and practical issues

Wed, 11 Feb - DAFM Farm, Ballykenser, Termon, Co. Cork
Teagasc, Oak Park, Carlow
Fri, 13 Feb - Teagasc, Kildangan College, Piltown, Co. Kilkenny
Anthony & Beres Eirinis, West Carrog, Naul, Co. Dublin
Mon, 16 Feb - John Fortune, Knowlghan, Crossnah, Co Westmead
All walks begin at 11 a.m. | All welcome
For more information visit www.teagasc.ie/events or call your local Teagasc office

Solving: Greening questions
- How to approach EFA?
- Establish if farmer needs EFA (>15Ha)
  - If so, how much?
Example of KT approach
SUD and Integrated Pest Management

- Teagasc SUD Working Group
- In-service training for Teagasc staff (webinar, etc.)
- CPE scheme for 360 Teagasc staff developed
- Specific large events
- Major focus at local event (1500 attendees)
- Newsletter: focus and specific insert
- Co-ordinated an past education data base (14,000 people)
- Crop Report – large section
- IASIS Continuous Professional Development
- Teagasc/UCD Diploma in IPM-Course development/delivery
- Member of EPA Drinking Water working group
- Activities in MCPA and other major risks to water
Example of KT/industry initiative

Aims
- Import substation
- Increase area by 30% in Ireland

Industry
- Joint approach between IFA, Bord Bia and Teagasc
- Monitor Farm/crops
- Oak Park research

Results
- Increased area by 50%
- Increased growers by 25%
- Retail demand increased for Irish product
Winter Wheat Returns 2017

**Av. Net Margin Crop:- Winter Wheat**

- Average: €650
- Top 1/3: €750

**Crop:- Winter Wheat**

<table>
<thead>
<tr>
<th><strong>Parameter</strong></th>
<th><strong>Average</strong></th>
<th><strong>top 1/3</strong></th>
<th><strong>Top v Average</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total No. hectares</td>
<td>5324</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>No. Of Farms</td>
<td>154</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Tillage Adj. Ha</td>
<td>35</td>
<td>28</td>
<td>-6</td>
</tr>
<tr>
<td>Yield t/Ha</td>
<td>10.4</td>
<td>11.2</td>
<td>+0.72</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop Sales €/tonne</td>
<td>€163</td>
<td>€164</td>
<td>+1</td>
</tr>
<tr>
<td>Gross Output /ha</td>
<td>€1,891</td>
<td>€2,084</td>
<td>+193</td>
</tr>
<tr>
<td>of which is straw/ha</td>
<td>€187</td>
<td>€250</td>
<td>+63</td>
</tr>
<tr>
<td>Material Costs/ha</td>
<td>€678</td>
<td>€677</td>
<td>-0</td>
</tr>
<tr>
<td>Total Machinery Costs/ha</td>
<td>€253</td>
<td>€238</td>
<td>-16</td>
</tr>
<tr>
<td>of which are contractor/ha</td>
<td>€137</td>
<td>€35</td>
<td>-103</td>
</tr>
<tr>
<td>Other Variable Costs/ha</td>
<td>€56</td>
<td>€51</td>
<td>-5</td>
</tr>
<tr>
<td>Gross Margin / Ha</td>
<td>€904</td>
<td>€1,117</td>
<td>+214</td>
</tr>
<tr>
<td>Total F. Costs / Ha</td>
<td>€399</td>
<td>€431</td>
<td>+32</td>
</tr>
<tr>
<td>Net Margin/ha</td>
<td>€504</td>
<td>€688</td>
<td>+182</td>
</tr>
<tr>
<td>Net Margin (inc DP) /ha</td>
<td>€506</td>
<td>€688</td>
<td>+182</td>
</tr>
<tr>
<td><strong>Key Figures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Costs €/ton</td>
<td>€133</td>
<td>€125</td>
<td>-8</td>
</tr>
<tr>
<td>Av. Lan Lease Costs/ha</td>
<td>€164</td>
<td>€171</td>
<td>+7</td>
</tr>
</tbody>
</table>
## Winter Barley Returns 2017

<table>
<thead>
<tr>
<th>Crop: Winter Barley</th>
<th>Average</th>
<th>top 1/3</th>
<th>Top v Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total No. hectares</td>
<td>6145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. Of Farms</td>
<td>225</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Tillage Adj. Ha</td>
<td>27</td>
<td>33</td>
<td>+ 5</td>
</tr>
<tr>
<td>Yield t/ha</td>
<td>9.3</td>
<td>9.5</td>
<td>+ 0.23</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop Sales €/tonne</td>
<td>€ 156</td>
<td>€ 162</td>
<td>+ 6</td>
</tr>
<tr>
<td>Gross Output /ha</td>
<td>€ 1,737</td>
<td>€ 1,878</td>
<td>+ 142</td>
</tr>
<tr>
<td>of which is straw/ha</td>
<td>€ 288</td>
<td>€ 338</td>
<td>+ 51</td>
</tr>
<tr>
<td>Material Costs/ha</td>
<td>€ 599</td>
<td>€ 580</td>
<td>- 19</td>
</tr>
<tr>
<td>Total Machinery Costs/ha</td>
<td>€ 284</td>
<td>€ 242</td>
<td>- 42</td>
</tr>
<tr>
<td>of which are contractor/ha</td>
<td>€ 143</td>
<td>€ 50</td>
<td>- 93</td>
</tr>
<tr>
<td>Other Variable Costs/ha</td>
<td>€ 24</td>
<td>€ 14</td>
<td>- 10</td>
</tr>
<tr>
<td>Gross Margin / Ha</td>
<td>€ 829</td>
<td>€ 1,041</td>
<td>+ 212</td>
</tr>
<tr>
<td>Total F. Costs / Ha</td>
<td>€ 384</td>
<td>€ 391</td>
<td>+ 7</td>
</tr>
<tr>
<td>Net Margin/ha</td>
<td>€ 445</td>
<td>€ 650</td>
<td>+ 205</td>
</tr>
<tr>
<td>Net Margin (inc DP) /ha</td>
<td>€ 462</td>
<td>€ 675</td>
<td>+ 213</td>
</tr>
<tr>
<td><strong>Key Figures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Costs €/ton</td>
<td>€ 139</td>
<td>€ 129</td>
<td>- 10</td>
</tr>
<tr>
<td>Av. Lan Lease Costs/ha</td>
<td>€ 171</td>
<td>€ 166</td>
<td>- 5</td>
</tr>
</tbody>
</table>

**Av. Net Margin Crop: Winter Barley**

**Av. Variable Costs Crop: Winter Barley**

- Lime: 28%
- Insecticide: 1%
- Growth Reg.: 5%
- Herbicide: 2%
- Seed: 9%
- Av. Land lease: 11%
- Fungicide: 16%
- Machinery: 27%
### Spring Feed Barley Returns 2017

<table>
<thead>
<tr>
<th>Crop: Spring Feed Barley</th>
<th>Average</th>
<th>Top 1/3</th>
<th>Top v Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total No. hectares</td>
<td>5053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. Of Farms</td>
<td>180</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Tillage Adj. Ha</td>
<td>28</td>
<td>34</td>
<td>+ 6</td>
</tr>
<tr>
<td>Yield t/Ha</td>
<td>7.8</td>
<td>8.3</td>
<td>+ 0.50</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop Sales €/tonne</td>
<td>€ 153</td>
<td>€ 158</td>
<td>+ 5</td>
</tr>
<tr>
<td>Gross Output /ha</td>
<td>€ 1,406</td>
<td>€ 1,580</td>
<td>+ 174</td>
</tr>
<tr>
<td>of which is straw/ha</td>
<td>€ 215</td>
<td>€ 270</td>
<td>+ 55</td>
</tr>
<tr>
<td>Material Costs/ha</td>
<td>€ 477</td>
<td>€ 462</td>
<td>- 16</td>
</tr>
<tr>
<td>Total Machinery Costs/ha</td>
<td>€ 256</td>
<td>€ 227</td>
<td>- 29</td>
</tr>
<tr>
<td>of which are contractor/ha</td>
<td>€ 127</td>
<td>€ 58</td>
<td>- 69</td>
</tr>
<tr>
<td>Other Variable Costs/ha</td>
<td>€ 15</td>
<td>€ 4</td>
<td>- 11</td>
</tr>
<tr>
<td><strong>Gross Margin / Ha</strong></td>
<td>€ 657</td>
<td>€ 887</td>
<td>+ 229</td>
</tr>
<tr>
<td><strong>Total F. Costs / Ha</strong></td>
<td>€ 357</td>
<td>€ 353</td>
<td>- 4</td>
</tr>
<tr>
<td><strong>Net Margin/ha</strong></td>
<td>€ 300</td>
<td>€ 534</td>
<td>+ 234</td>
</tr>
<tr>
<td><strong>Net Margin (inc DP) /ha</strong></td>
<td>€ 304</td>
<td>€ 543</td>
<td>+ 239</td>
</tr>
</tbody>
</table>

#### Key Figures
- Total Costs €/ton: € 142, € 126, - 16
- Av. Lan Lease Costs/ha: € 180, € 185, + 5

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![Graph showing Av. Net Margin and Av. Variable Costs for Spring Feed Barley](image)
Average income by system - per farm and per labour unit

*Source: Teagasc, National Farm Survey*
Thank You!

Questions?