**Crowley Farm, Cork**
- Farming 392 ha (968ac)
- Divided into 4 farms (30Km)
- Land medium to heavy
- Main labour units
  - John & Denis (brother)
- Continuous w. wheat and w. barley with some s. barley

<table>
<thead>
<tr>
<th>Challenges 2009</th>
<th>Response 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain or increase yields with continuous cereals</td>
<td>- Winter &amp; Spring crops yields maintained</td>
</tr>
<tr>
<td>Take-all risk and decreasing soil N reserves</td>
<td>- Take-all a factor in 2011</td>
</tr>
<tr>
<td></td>
<td>- Exploring OSR for rotation to increase yields</td>
</tr>
<tr>
<td>Developing marketing strategy for dry grain</td>
<td>- Continuing to use forward selling strategy</td>
</tr>
<tr>
<td></td>
<td>- Expanded storage capacity in 2010</td>
</tr>
<tr>
<td>Achieving required winter sowings in a wet Autumn</td>
<td>- Last 3 seasons weather favourable</td>
</tr>
<tr>
<td></td>
<td>- OSR may spread workload</td>
</tr>
<tr>
<td></td>
<td>- Method of planting will be a factor</td>
</tr>
<tr>
<td>Reduce production costs</td>
<td>- Forward buys fertiliser (previous year)</td>
</tr>
<tr>
<td></td>
<td>- Plans Ag-chems well in advance</td>
</tr>
<tr>
<td></td>
<td>- Tailor inputs to fields/conditions</td>
</tr>
</tbody>
</table>
Winter Wheat Performance

**Yield t/ha**

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2010</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>2011</td>
<td>11</td>
<td>12</td>
</tr>
</tbody>
</table>

**Common Costs € per ton**

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>120</td>
<td>130</td>
</tr>
<tr>
<td>2010</td>
<td>130</td>
<td>140</td>
</tr>
<tr>
<td>2011</td>
<td>140</td>
<td>150</td>
</tr>
</tbody>
</table>

**Common Profit € per ha**

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>-200</td>
<td>-300</td>
</tr>
<tr>
<td>2010</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>2011</td>
<td>600</td>
<td>700</td>
</tr>
</tbody>
</table>

**Key Points**

- Yields static (continuous wheat)
- Common cost is static
- Common profits increased
  - Price and yield

**Common costs** exclude land rental, labour and interest
Spring Barley Performance

Yield t/ha

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>8.5</td>
<td>7.5</td>
</tr>
<tr>
<td>2010</td>
<td>7.5</td>
<td>6.5</td>
</tr>
<tr>
<td>2011</td>
<td>9.0</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Common Costs € per ton

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>130</td>
<td>120</td>
</tr>
<tr>
<td>2010</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>2011</td>
<td>140</td>
<td>140</td>
</tr>
</tbody>
</table>

Common Profit € per ha

<table>
<thead>
<tr>
<th>Year</th>
<th>Crowleys</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>-200</td>
<td>-200</td>
</tr>
<tr>
<td>2010</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>2011</td>
<td>1400</td>
<td>1400</td>
</tr>
</tbody>
</table>

Key Points

- Yield increasing
- Common cost -10%
- Common profits increased
  - Yield and price increased

Common costs exclude land rental, labour and interest
C footprints of crop systems are relatively low and are essentially driven by fertiliser inputs and yields. Irish emissions per unit product are 10% better than the European average - mainly due to higher yields.

Emission sources include:

- **Nitrous oxide** (N$_2$O) following fertiliser application & crop residue breakdown
- Manufacture of crop inputs & fuel usage during tillage operations
- Soil organic carbon loss results from ploughing and extended fallow periods.
Potential Solutions

- Increase N efficiency by targeted application of fertilisers
- Optimise herbicide/pesticide application to maximize yields
- Use of urease and N inhibitors in conjunction with urea
- Reduced soil disturbance (minimum tillage)
- Reduced fallow through promoting volunteer growth, winter crops or cover crops

Effect of fungicides

- 3 spray
- 2 spray
- No Fungicide

Reduced fallow

- Total C loss (t CO₂ h⁻¹)
- Fallow C loss (t CO₂ ha⁻¹)
An Examination of the Uptake of Financial Tools (Profit Monitor) by Tillage Farmers

Project aims
• Establish level of tool use
• Why are these tools in use?
• Farmers/advisers views of financial analysis
• Recommend changes

You can help!
• What are your costs?

Machinery Costs Program
• Tailored for Irish conditions
• Easy to fill out
• Comparable results
Injuries on Tillage Farms

- Machinery (44%) and Trips and Falls (26%) are the major associated factor.
- Non fatal Injuries on Tillage Farms result in 47 Days off Work
- Safety Behaviour the major preventative measure e.g. getting up/ down of tractor.
- Irish farmers have a very poor Health Profile – Do a Health MOT
- Prevent contact with Pesticides – use low pressures and wear PPE.

Tillage Farm Injuries
Teagasc NFS- 2012

- Buildings related, 10%
- Livestock, 20%
- Machinery, 44%
- Trips and Falls, 26%

Take Home Message
- Health is Wealth – 'Think Safety and Take Action'.
Manage Health and Safety

- Your Health and Safety is your most important resource.
- Applying active management to Health and Safety greatly reduces risk.
- Under the Safety, Health and Welfare at Work Act (2005) it is a legal requirement to complete and implement a Risk Assessment.
- Teagasc provide short training on completing the Risk Assessment document.
- Implement controls and practices on an on-going basis.

Take Home Message
- Complete or Revise Risk Assessment for your farm.
- Attend H&S Training
- Implement Control Measures on on-going basis
Reduce your Fuel Costs

Why Target Fuel?
- Significant production cost €85/ha ++
- Fuel price will remain high
- Irish production: fuel demanding
- High fuel cost = High machinery costs

Non-machine factors
- Crop grown
- Soil Type
- Field size + distance
- Weather

To reduce fuel, consider:
- Change system (up to 50% saving)
- Reduce depth and intensity
  - 175mm ploughing - save 30% fuel
  - Top-down draught vs power harrow
- Match machines within system
- Select fuel efficient machines
- Shed unnecessary weight
- Operate efficiently in field
  - Plan work carefully
  - Keep engine loaded for efficiency

Cultivation system + fuel use
Land: Distance and Costs

Factors: Block distance, size, crops. Base locations
Costs: Fuel, Labour, Depreciation, Repairs

Summary
- 22 blocks (300+ha)
- Up to 34km distance
- €66/ha extra cost
- €20,825 /yr extra
# O'Donoghue Farm, Meath/Dublin

- Farming 347 ha (850 ac)
- Various plots (up to 34 km)
  - Over 85% rented
- Land heavy to very heavy
- Main labour units
  - Joe & Colm & sons (part time)
- Predominant cropping
  - Winter wheat (140 ha),
  - Spring barley (132 ha)
  - Other (75 ha)

## Challenges 2009 vs. Response 2012

<table>
<thead>
<tr>
<th>Challenges 2009</th>
<th>Response 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce production costs</td>
<td>- Increased recording, planning and tailoring of inputs</td>
</tr>
<tr>
<td>Stable land bank</td>
<td>- Increased % long term and active with Share Farming (1/3 of total area)</td>
</tr>
<tr>
<td>Reduce establishment cost</td>
<td>- Aggressive monitoring of fuel usage</td>
</tr>
<tr>
<td>Planning for the next generation</td>
<td>- Separated financial commitments</td>
</tr>
<tr>
<td></td>
<td>- Specific responsibilities</td>
</tr>
<tr>
<td></td>
<td>- Exploring new opportunities</td>
</tr>
<tr>
<td>Machinery costs</td>
<td>- Adjusted cropping plan</td>
</tr>
</tbody>
</table>
Winter Wheat Performance

Yield t/ha

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2010</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>2011</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

Common Costs € per ton

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>170</td>
<td>160</td>
</tr>
<tr>
<td>2010</td>
<td>180</td>
<td>160</td>
</tr>
<tr>
<td>2011</td>
<td>190</td>
<td>180</td>
</tr>
</tbody>
</table>

Common Profit € per ha

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>All NFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>200</td>
<td>-100</td>
</tr>
<tr>
<td>2010</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td>2011</td>
<td>600</td>
<td>500</td>
</tr>
</tbody>
</table>

Key Points (Better Farm)

- Yields increasing year on year
- Common cost per ton - 13%
- Common profit + 60%

Common costs exclude land rental, labour and interest
Spring Barley Performance

Yield t/ha

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>6.5</td>
<td>6.0</td>
</tr>
<tr>
<td>2010</td>
<td>7.0</td>
<td>7.5</td>
</tr>
<tr>
<td>2011</td>
<td>7.5</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Common Costs € per ton

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>150</td>
<td>130</td>
</tr>
<tr>
<td>2010</td>
<td>130</td>
<td>110</td>
</tr>
<tr>
<td>2011</td>
<td>110</td>
<td>90</td>
</tr>
</tbody>
</table>

Common Profit € per ha

<table>
<thead>
<tr>
<th>Year</th>
<th>ODonoghues</th>
<th>NFS Top 1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>500</td>
<td>-100</td>
</tr>
<tr>
<td>2010</td>
<td>400</td>
<td>100</td>
</tr>
<tr>
<td>2011</td>
<td>300</td>
<td>200</td>
</tr>
</tbody>
</table>

Key Points

- High yields & increasing
- Common cost static
- Common profits +10%
- Yield and price

Common costs exclude land rental, labour and interest
1. Soil Fertility
   - Intensive soil testing
   - Planned N, P & K App.

2. Crop Rotation
   - Tailor nutrient app. to fields
   - Spring ‘v’ Winter crop req.

3. Fertiliser Advice
   - Soil fertility/target yields
   - Select suitable fertiliser
   - Application method/timing

4. Balance Nutrient supply
   - Check Lime/sulphur/trace elements
   - Max. return on all inputs
Soil Fertility Management

Soil P & K levels (%) 2009 and 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50</td>
<td>25</td>
<td>0</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>50</td>
<td>50</td>
<td>37.5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>12.5</td>
<td>50</td>
<td>37.5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>12.5</td>
<td>0</td>
<td>12.5</td>
<td></td>
</tr>
</tbody>
</table>

Fertiliser N:P:K Ratio

N P K
13 - 6 - 20
50 kg

N P K
11 - 9 - 22
50 kg

Farm P & K Balance (2010 – 2011)

- Phosphorus (P)
  - Applied 77 kg/ha
  - Removed 67 kg/ha
- Potassium (K)
  - Applied 173 kg/ha
  - Removed 196 kg/ha

Soil fertility changes very slowly
Fertiliser compounds are selected to supply the correct N, P & K balance

Soil P +0.3mg/L
Soil K - 5mg/L
Soil Fertility Management

Soil P & K levels (%) 2009 and 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>53</td>
<td>53</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>65</td>
<td>41</td>
<td>29</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Fertiliser N:P:K Ratio

N P K
10 - 10 - 20
50 kg

+ N P K
0 - 0 - 50
50 kg

Farm P & K Balance (2010 – 2011)

- Phosphorus (P)
  - Applied 74 kg/ha
  - Removed 75 kg/ha
- Potassium (K)
  - Applied 148 kg/ha
  - Removed 224 kg/ha

Soil fertility changes relatively fast
Soils will be re sampled at harvest and P & K applied to meet crop requirements
Soil Fertility Management (Mh)

Soil P & K levels (%) 2009 and 2011

<table>
<thead>
<tr>
<th>Soil Index</th>
<th>P &amp; K</th>
<th>2009</th>
<th>2011</th>
<th>2009</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>22</td>
<td>44</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>67</td>
<td>67</td>
<td>44</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Fertiliser N:P:K Ratio

N P K
10 - 8 - 25
50 kg

or

N P K
€€ - €€ - €€?
50 kg

Farm P & K Balance (2010 – 2011)

- Phosphorus (P)
  - Applied 44 kg/ha
  - Removed 64 kg/ha
- Potassium (K)
  - Applied 143 kg/ha
  - Removed 177 kg/ha

Soil fertility changes relatively slowly
Soils will be re sampled at harvest to check soil P & K levels
Pesticide Registration and Control Division

• Serving agriculture by:
  – Registering pesticides
  – Pesticide residue analysis
  – Inspection & Enforcement
  – Protecting the consumer
  – Promoting sustainable food production
Pesticide Registration and Control Division

• What’s in store for farmers:
  – Operator training
  – Sprayer testing
  – Integrated Pest Management
  – Buffer zones
  – Record keeping and planning
  – Inspection and enforcement of biocides
N for winter wheat

What is optimum N rate for high yielding crops?
- results to date indicate that allowed rates are sufficient for yield

Can fertiliser N efficiency be improved?
- initial results indicate that delaying first N until GS 30 gives higher yield per kg N input.

What is best way of splitting N?
- Little difference between splits tested
- Aim to have all N applied by flag leaf

Soil N supply
- Can it be better predicted?
Share Farming

Important Principals

- Business are equal & risk takers
- No rent or fixed payments
- Each can sell produce as he feels fit
- Each responsible for his own costs
- Each works out his own profit

How to set up an agreement?

- Both parties must agree on:
  - crop budgets & agreement term
  - sharing input/output
  - individual responsibilities
- Appoint facilitator
- Consult appropriate advisers
- Complete legal document
  - 7 main tables
- At year end - finalise accounts and review
Septoria Control

- SDHIs/Triazoles mixes now leaders in Septoria control
- Continued selection for reduced triazole sensitivity
- No SDHI resistance detected yet!
- Inclusion of multisite fungicides essential

Fungicide Performance 2011 – Leaf 1

- Opus Max
- Caramba
- Gleam
- Proline

- Aviator
- Adexar
- Seguris
Different septoria populations on all three farms

Trial  Aim
1. Timing: What does each timing contribute to yield?
2. T0’s: Differences between products at T0?
3. SDHIs: What product and at what timing, T1 or T2?
4. T3’s: Comparisons of the main T3 fungicides?
### Williamson Farm, Wexford
- Farming 145 ha (358ac)
- Small plots over (6 mile radius)
- Over 75% rented
- Land heavy
- Main labour units
  - Ken and George

<table>
<thead>
<tr>
<th>Challenges 2009</th>
<th>Response 2012</th>
</tr>
</thead>
</table>
| Convert more of area to winter cropping | - Has occurred on heavier land (60% of cropped area)  
- Break crops to keep 1st wheat area high |
| Convert from a two man system to a one man system (rotation, machinery & contracting business) | - Switch to winter crops eases spring workload, spreads harvest and risk  
- but not as much as desired! |
| Access to stable land base | - Actively exploring sharefarming |
| Opportunities in the future | - Oilseed Rape, increase wheat area |
Spring Barley Performance

**Yield (t/ha)**

- Williamsons
- NFS Top 1/3

2009: 5.5, 5.5
2010: 6.5, 6.5
2011: 8.5, 8.5

**Common Costs (€ per ton)**

- Williamsons
- NFS Top 1/3

2009: 140, 120
2010: 120, 120
2011: 160, 160

**Common Profit (€ per ha)**

- Williamsons
- NFS Top 1/3

2009: 0, -200
2010: 400, 400
2011: 800, 800

**Key Points**

- Yield increase – land suitability
- Common costs -22%
- Organised system

*Common costs* exclude land rental, labour and interest
Winter Wheat Performance

Key Points
- Yield increase – land suitability
- Cost awareness
- Only 1st wheats

Common costs exclude land rental, labour and interest