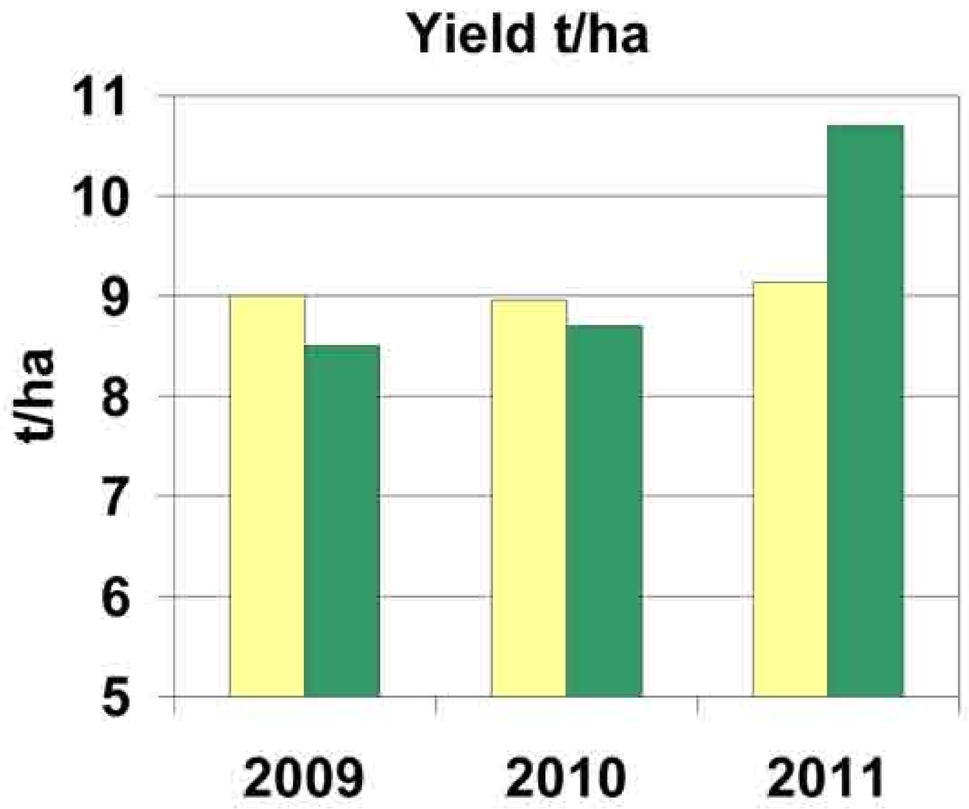
Teagasc Crops BETTER Farm

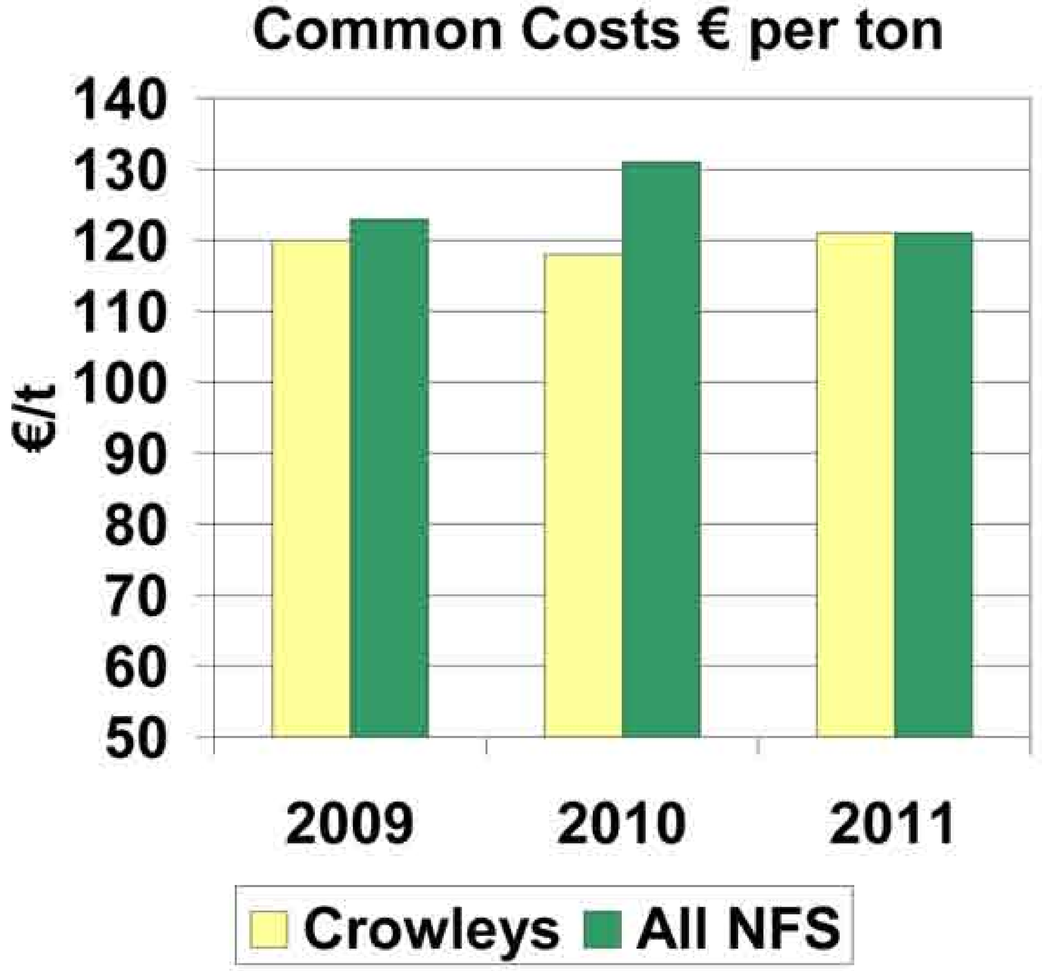
Crowley Farm, Cork

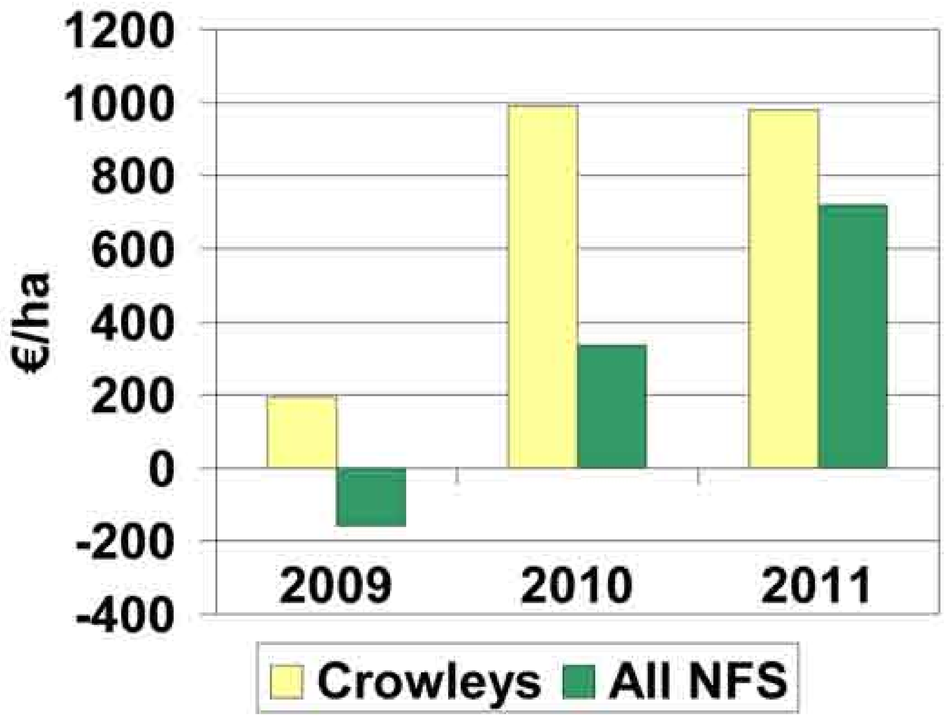
- Farming 392 ha (968ac)
- Divided into 4 farms (30Km)
- Land medium to heavy
- Main labour units
  - John & Denis (brother)
- Continuous w. wheat and w. barley with some s. barley

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

Winter Wheat Performance





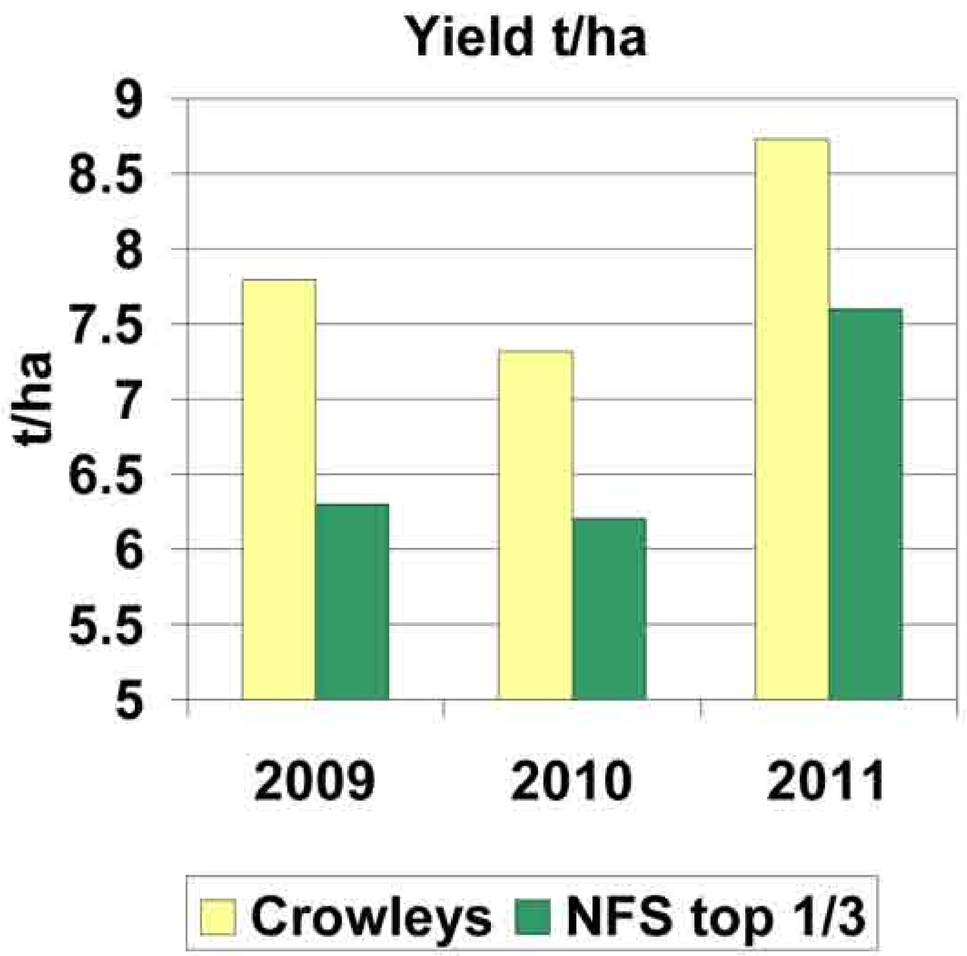


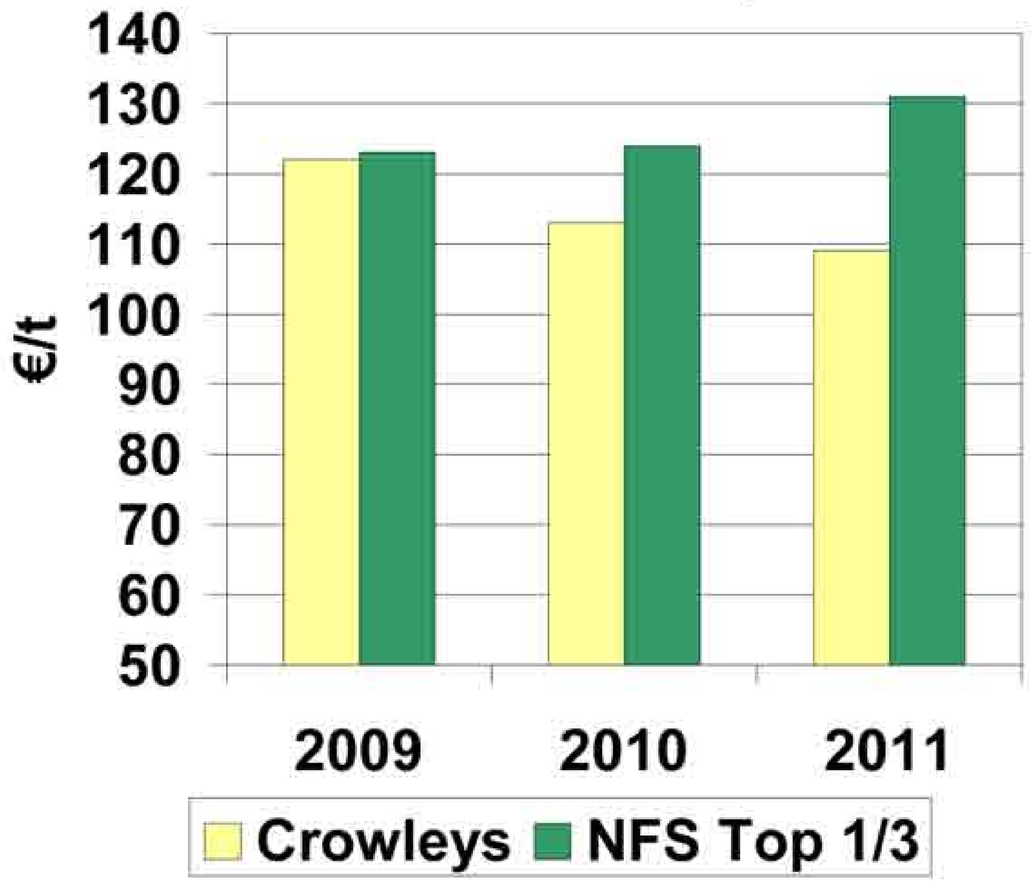
Key Points

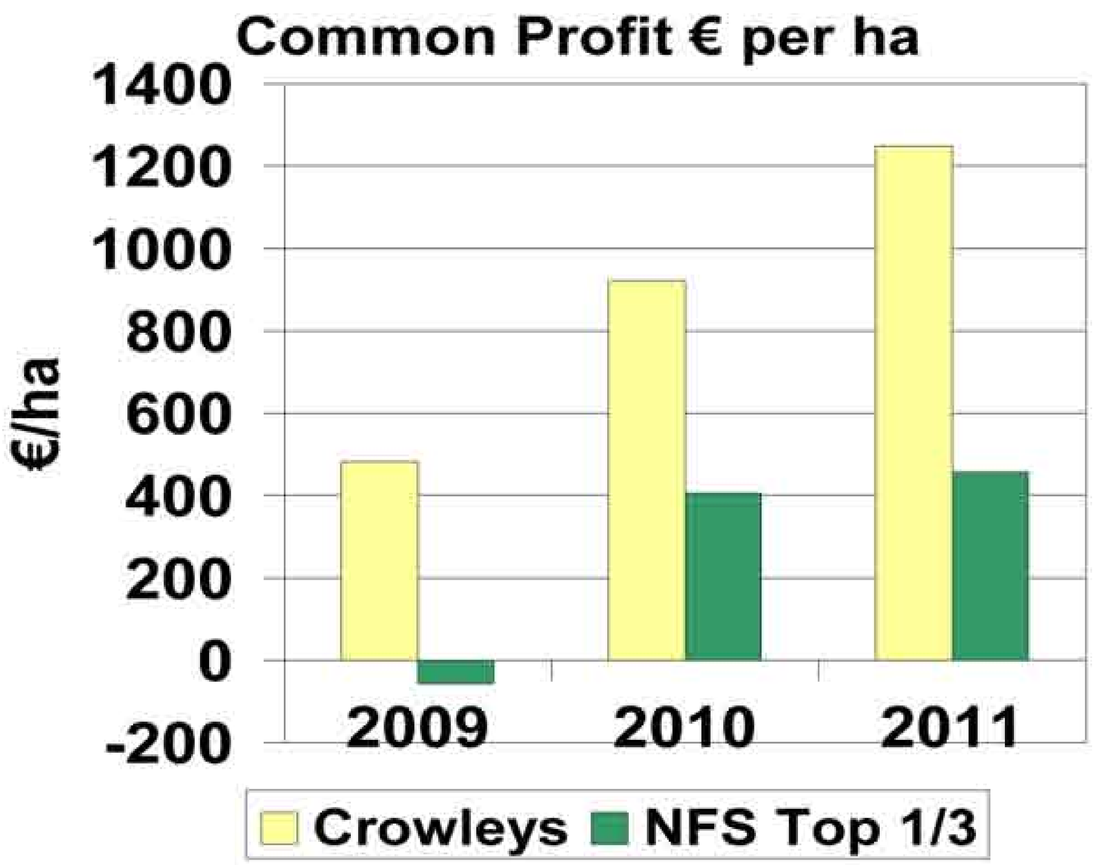
- Yields static (continuous wheat)
- Common cost is static
- Common profits increased
  - Price and yield

Common costs exclude land rental, labour and interest

Spring Barley Performance







Key Points

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

Common costs exclude land rental, labour and interest

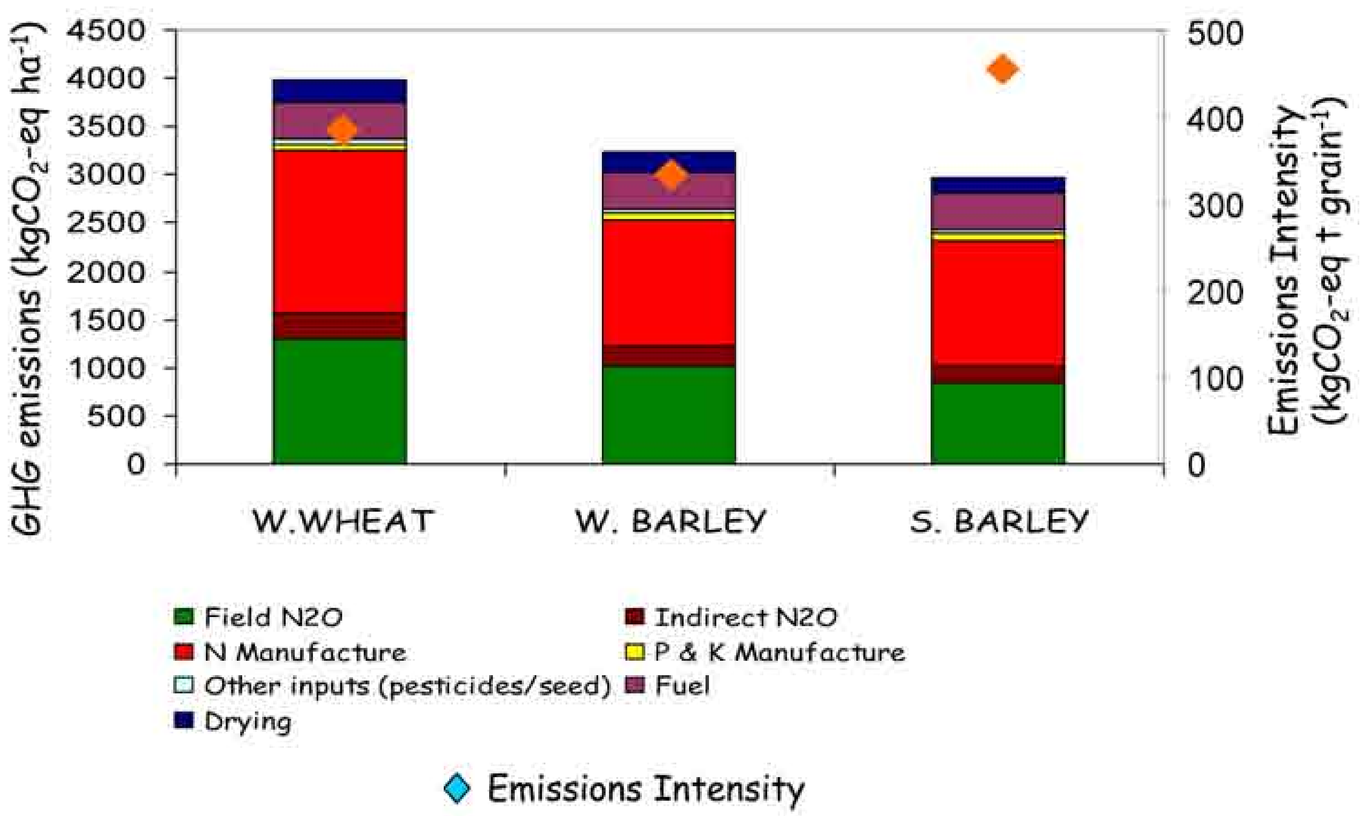
GHG Emissions & C footprints

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:

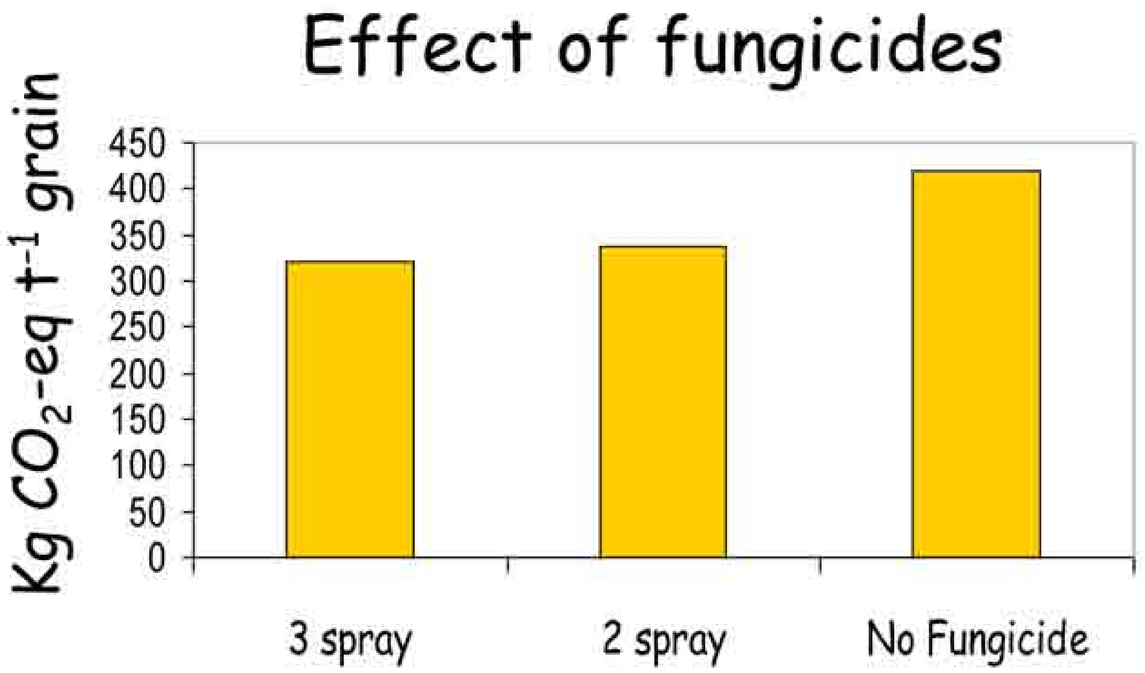
- Nitrous oxide (N_2O) following fertiliser application & crop residue breakdown
- Manufacture of crop inputs & fuel usage during tillage operations
- Soil organic carbon loss results from ploughing and extended fallow periods.

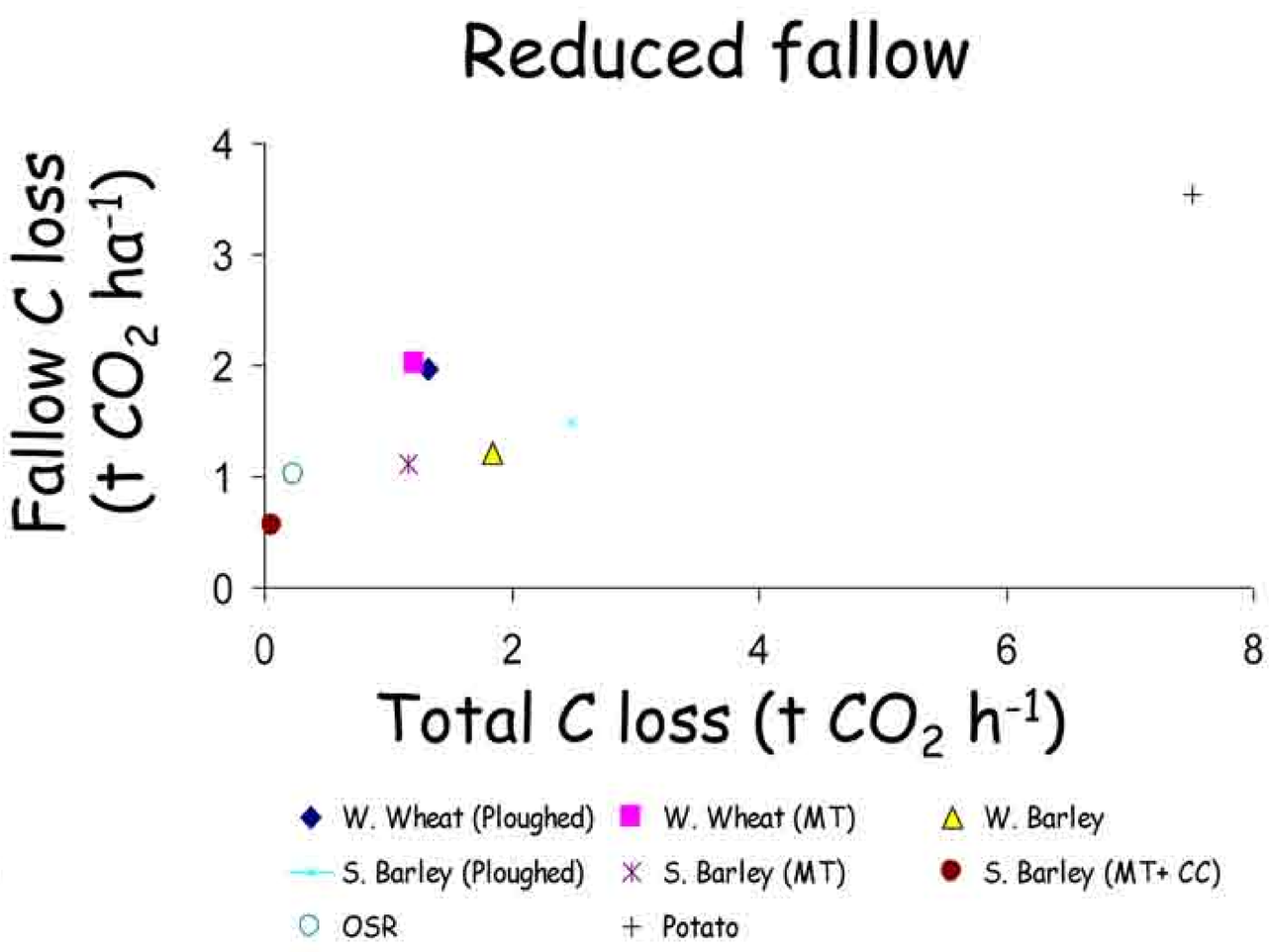


C footprint of Tillage

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





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 <u>your</u> costs?**

Machinery Costs Program

- Tailored for Irish conditions
- Easy to fill out
- Comparable results

32	teleporter	80,000	2005	85,807	10	15,000	4,393	1200	25%	
33	roller flat	5,000	2009	5,151	20	3,000	135			
34	ring roller	9,000	2003	10,138	15	3,000	448			
35										
36	silage harvester/Ail	12,000	2000	14,135	15	2,000	489	200	100%	
37	deutz tractor 2 hand	39,000	2001	45,261	15	10,000	1,752	200	25%	
38	bruan	1,500	2010	1,523	15	200	193			
39	Jeep	17,000	2009	17,514	5	6,000	2,171	500		
40	hedgecutter	10,000	2002	11,434	15	3000	478	200	25%	
41	McCale bale rapper	12,000	2009	12,363	10	5000	982	100	100%	
42										
43										
44										
	Other Repairs and Maintenance									
Total		821,000		866,662			86,687	12800		

Total figures	Total farmed area (acres)	Total Tillage area (acres)	Total Machinery Repayments	Dep. Machines recently paid off	Dep. Machines fully owned	Repairs and Maintenance	Diesel	Total Machenry costs
Total		632	€59,805	€0	€26,282	€12,800	€23,721	€122,608

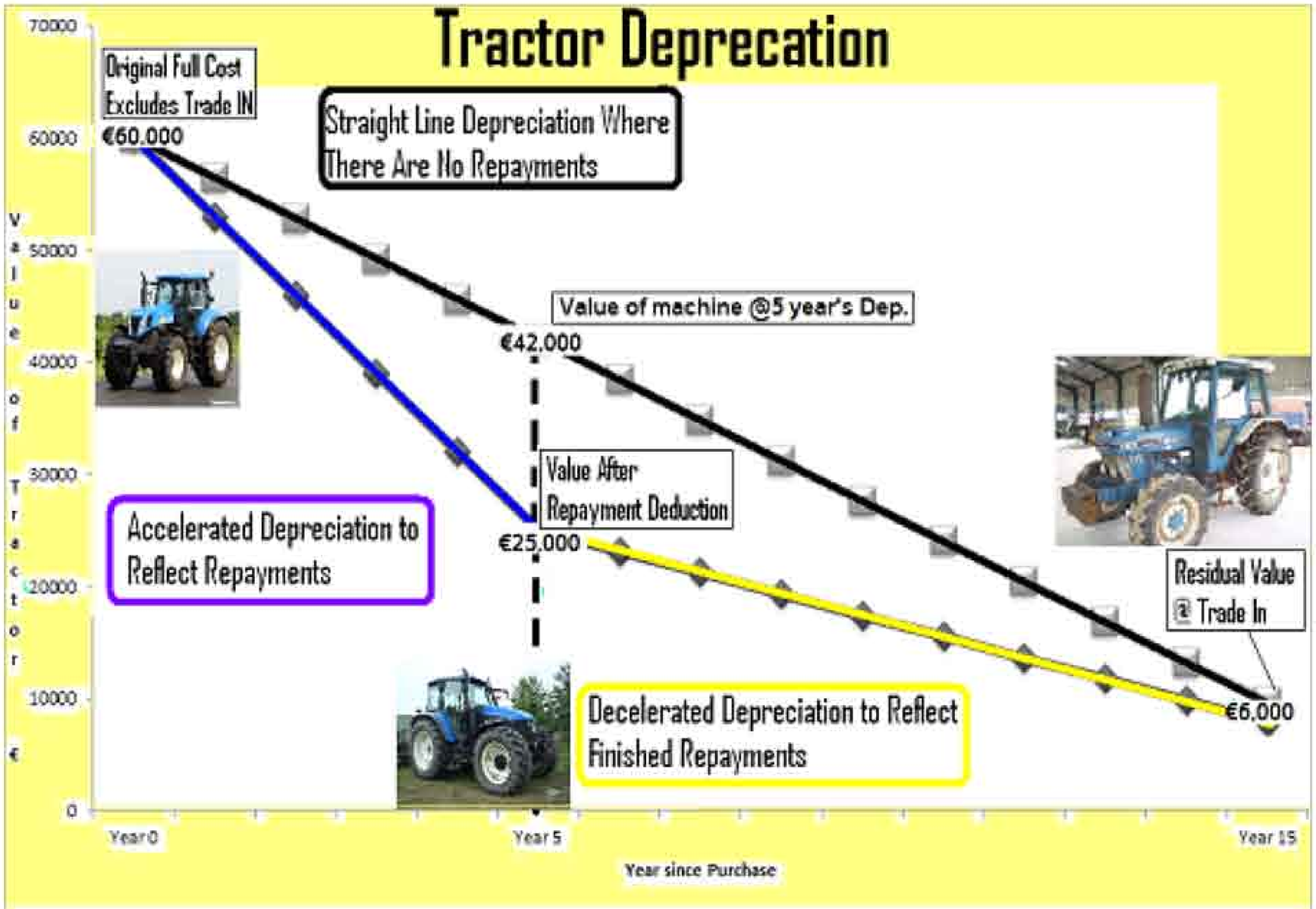
Allocation in e-PM

Other Enterprises	oral Repayments incured due to other enterprise	€0
	Total Depreciation incured due to other enterpri	€0
	Total Repairs and Maintenance incured to other	€0
Contractor	Total Repayments incured due to contracting	€17,662
	Total Depreciation incured to contracting	€6,801
	Total Repairs and Maintenance incured to contr	€2,975
Tillage only	Total Tillage Leased Machine (Repayments)	€42,144
	Total Tillage Depreciation (e-Profit Monitor)	€19,881
	Total Machinery Repairs and Maintenance (e-	€33,546
Total value of all machines (transfer to ePM closing value)		€866,662

Total Machinery costs	
	Cost/ac
Tillage land only	€151
Other Enterprises	€0
Total	€151

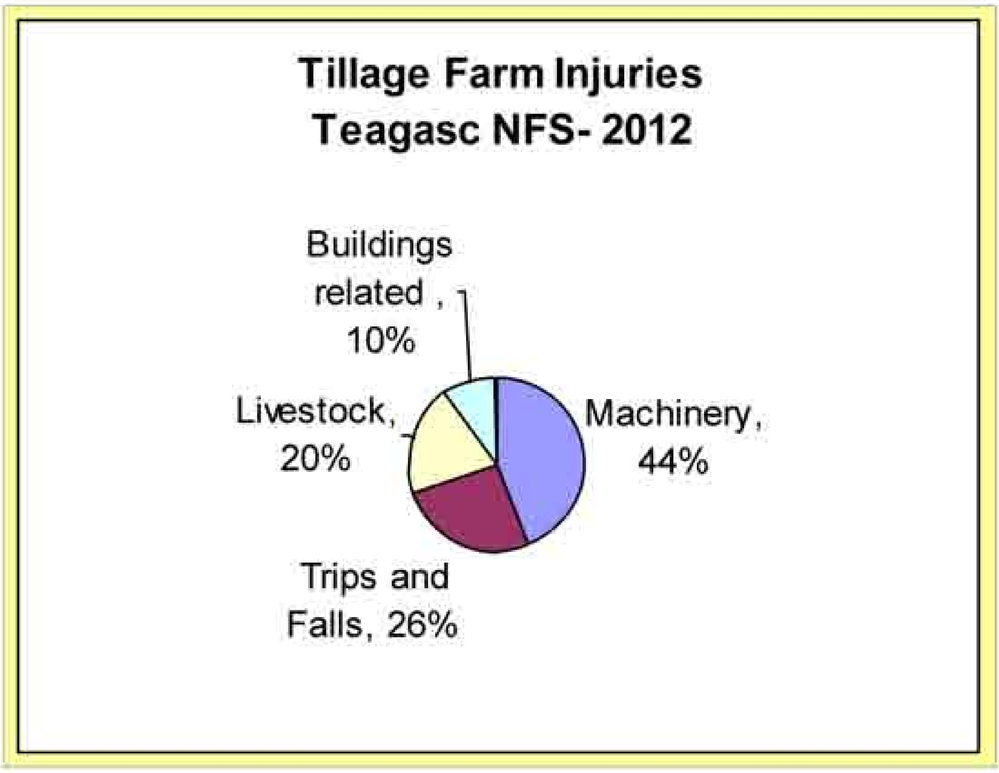
If farmed acres only & contracting costs excluded

Tractor Deprecation



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** .

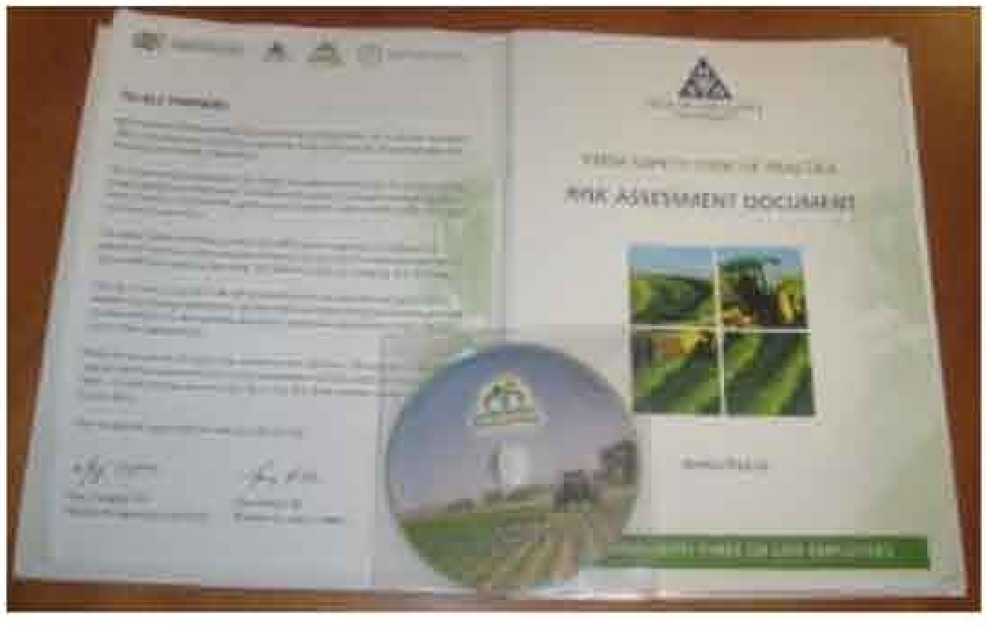


Take Home Message

- 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

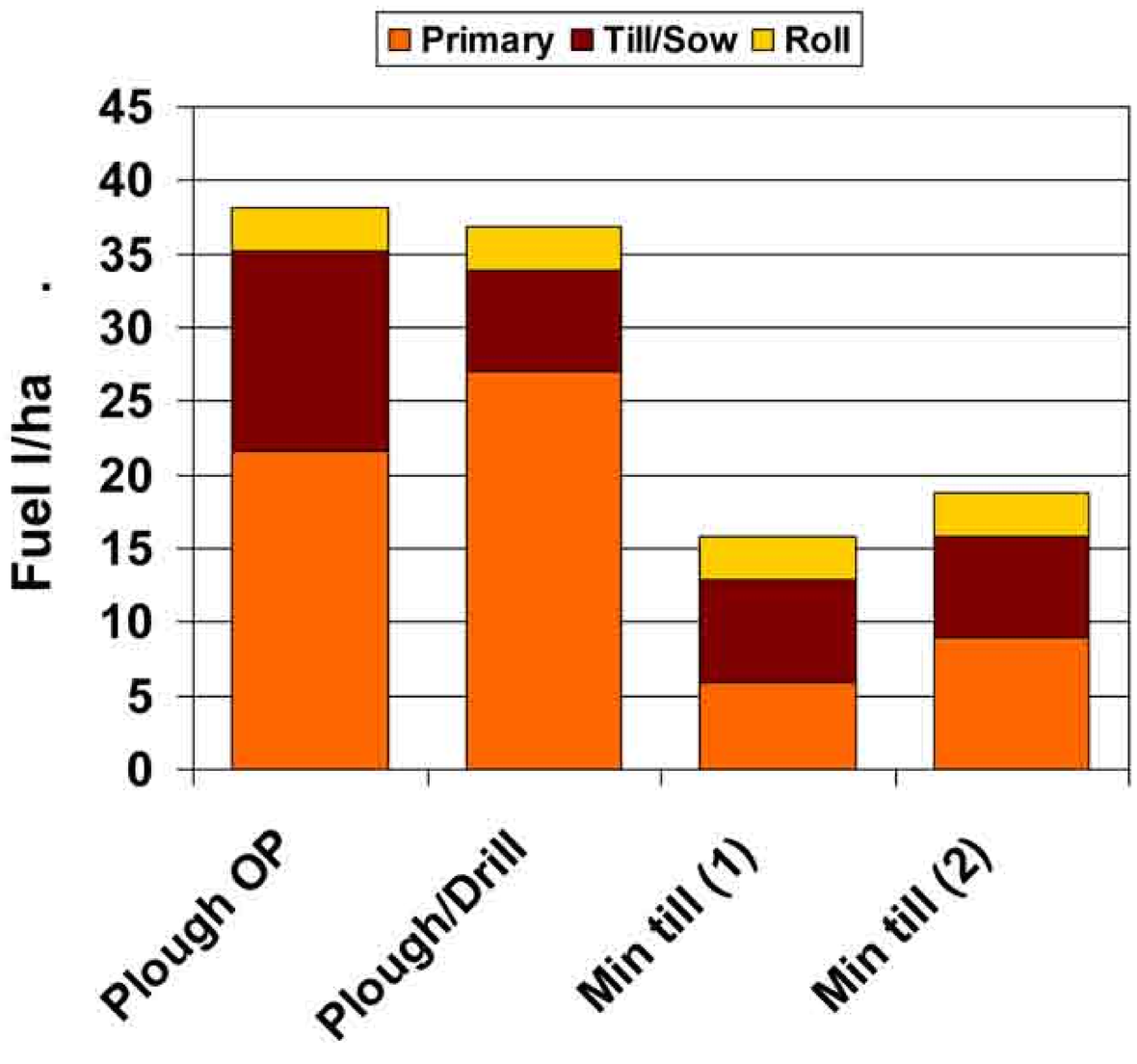
Non-machine factors

- 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

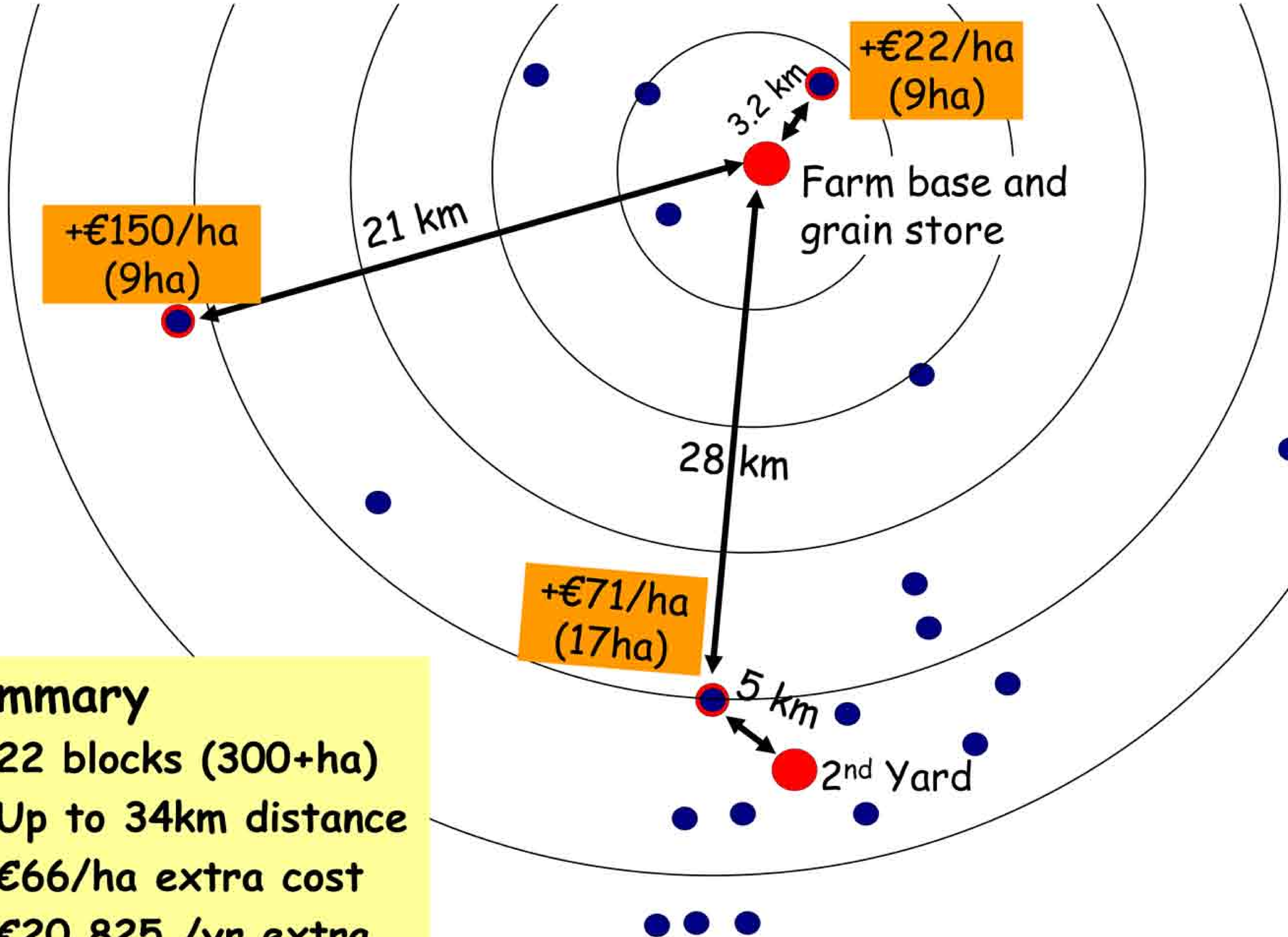
Cultivation system + fuel use



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

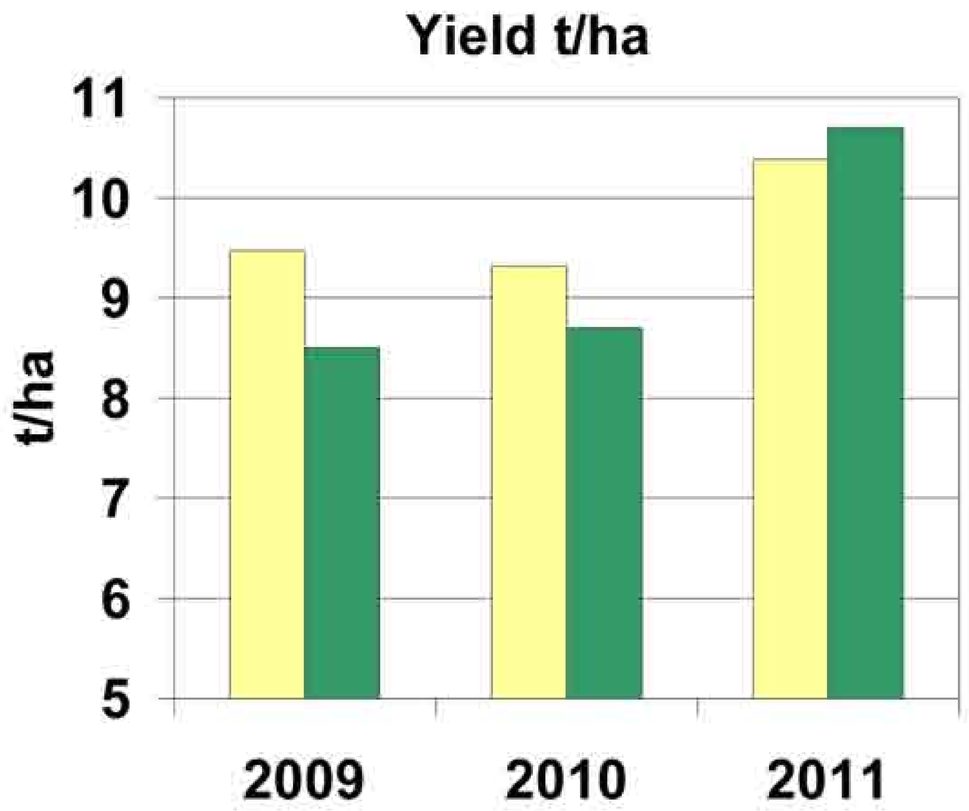
Teagasc Crops BETTER Farm

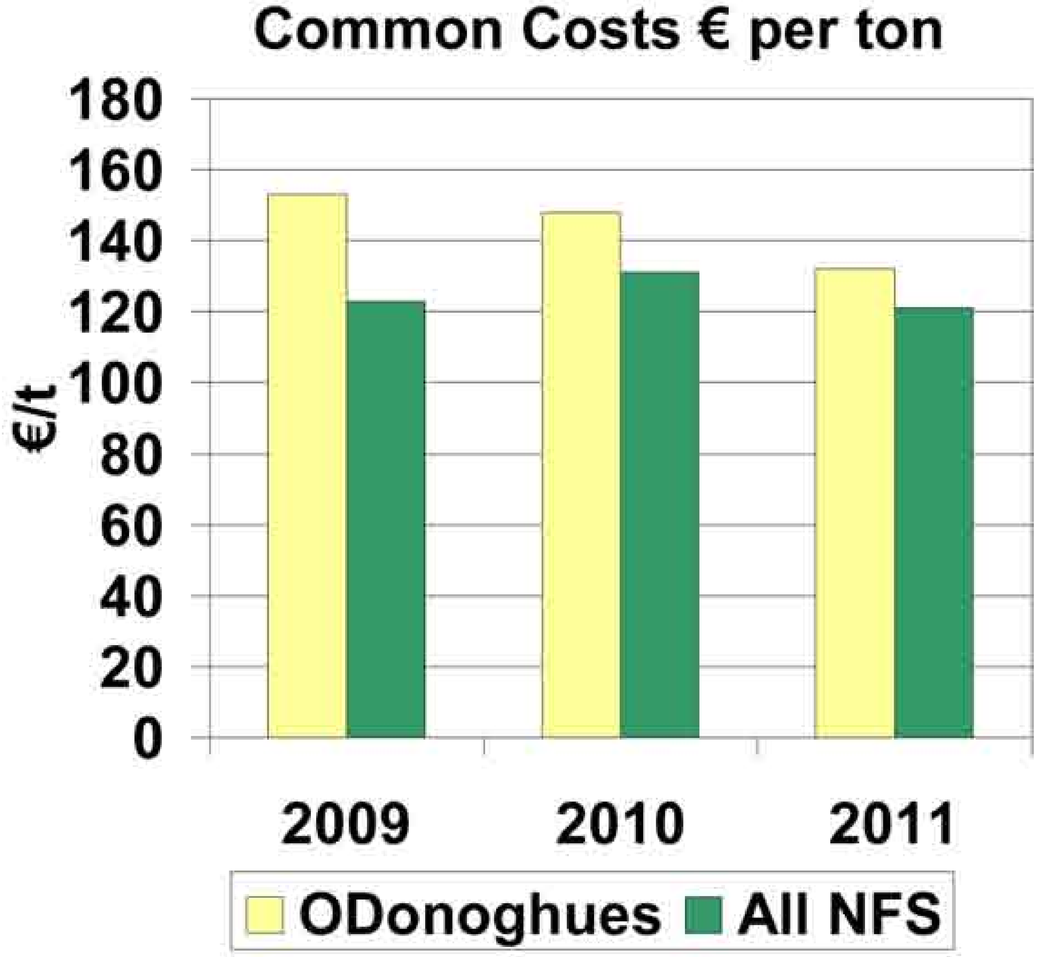
O'Donoghue Farm, Meath/Dublin

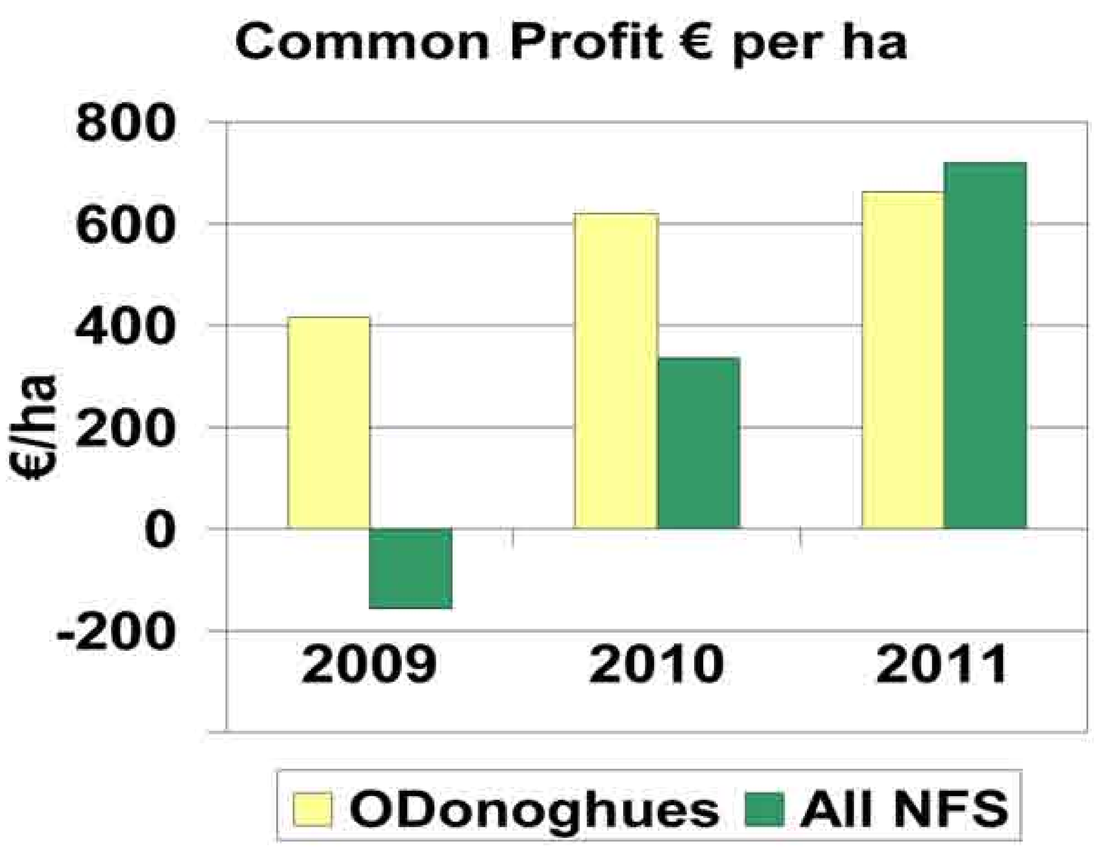
- Farming 347 ha (850 ac)
- Various plots (up to 34 km)
  - Over 85% rented
- Land heavy to very heavy
- Main labour units
  - Joe & Colm & sons (part time)
- Predominant cropping
  - Winter wheat (140 ha),
  - Spring barley (132 ha)
  - Other (75 ha)

Challenges 2009	Response 2012
Reduce production costs	- Increased recording, planning and tailoring of inputs
Stable land bank	- Increased % long term and active with Share Farming (1/3 of total area)
Reduce establishment cost	- Aggressive monitoring of fuel usage
Planning for the next generation	-Separated financial commitments -specific responsibilities -exploring new opportunities
Machinery costs	- Adjusted cropping plan

Winter Wheat Performance





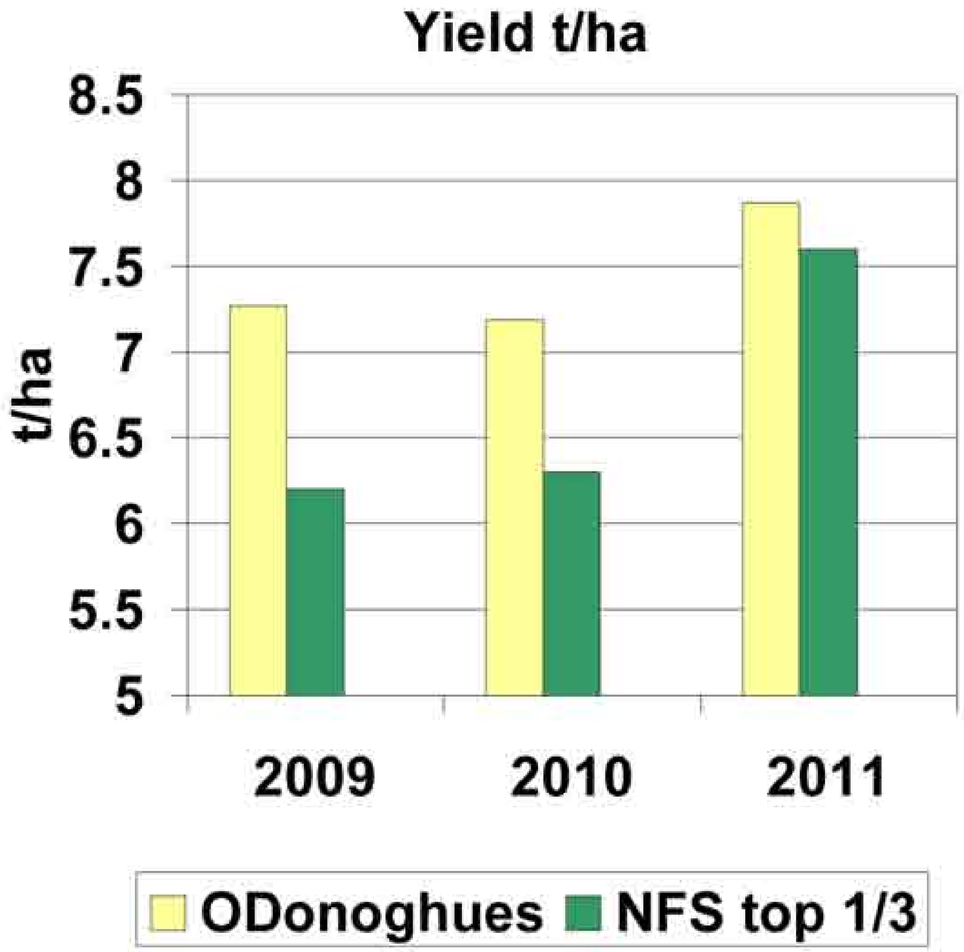


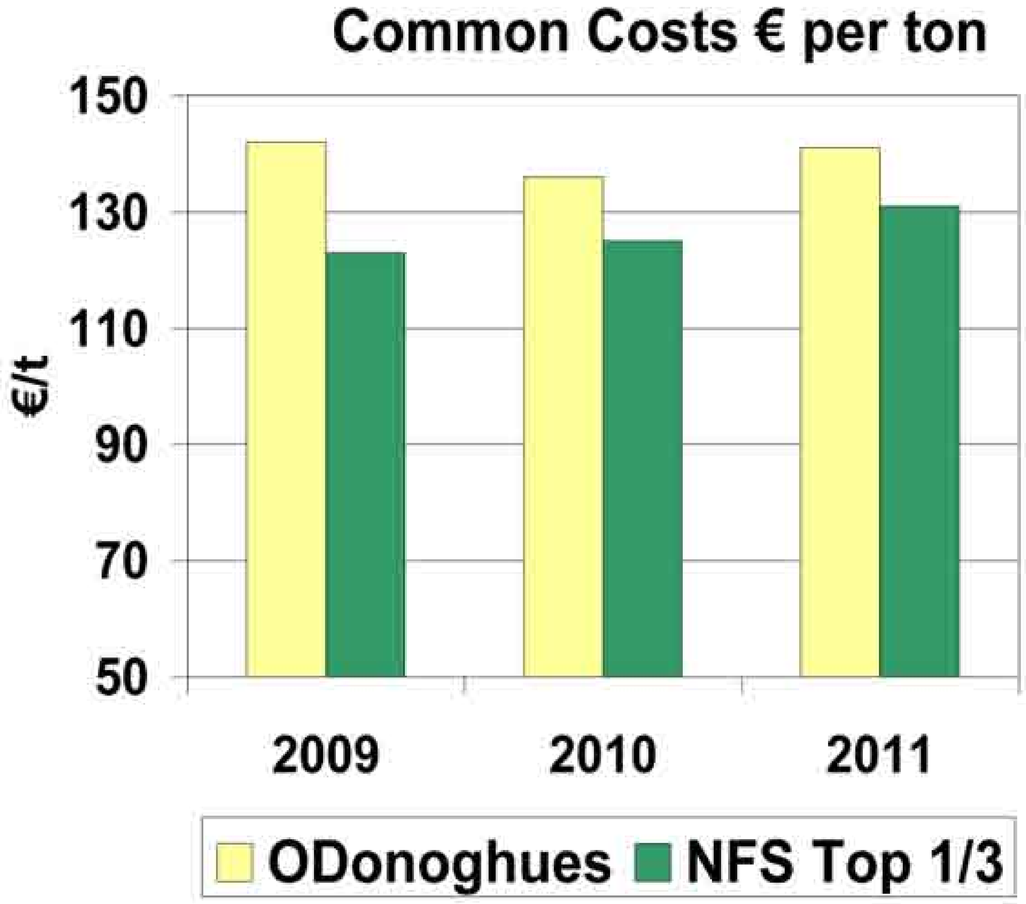
Key Points (Better Farm)

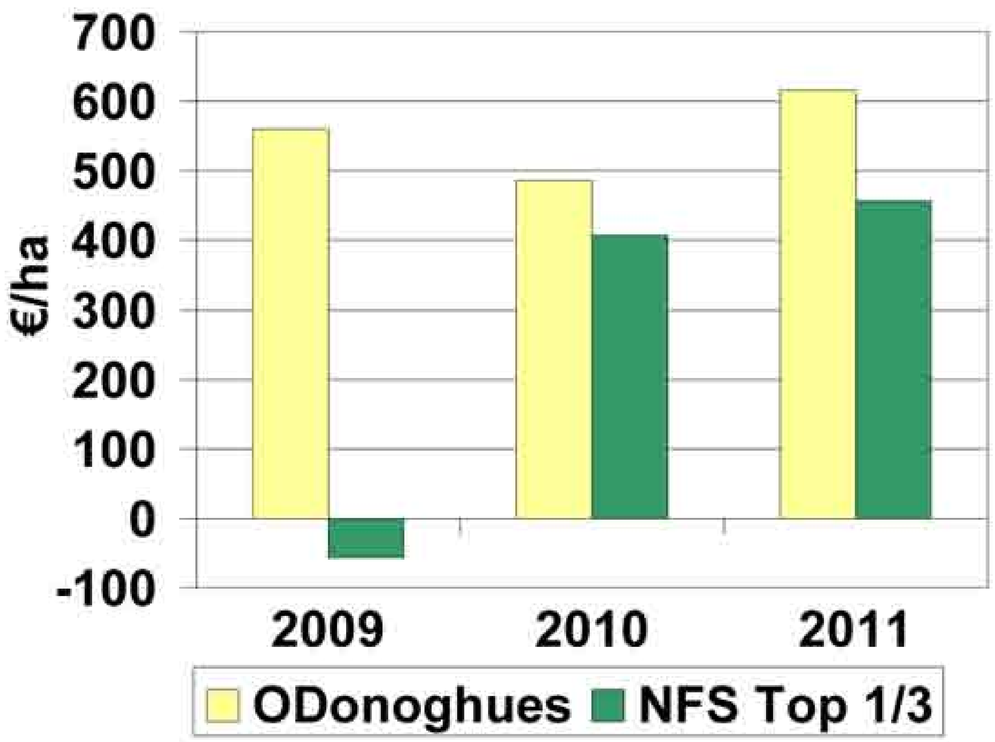
- Yields increasing year on year
- Common cost per ton - 13%
- Common profit + 60%

Common costs exclude land rental, labour and interest

Spring Barley Performance







Key Points

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

Common costs exclude land rental, labour and interest

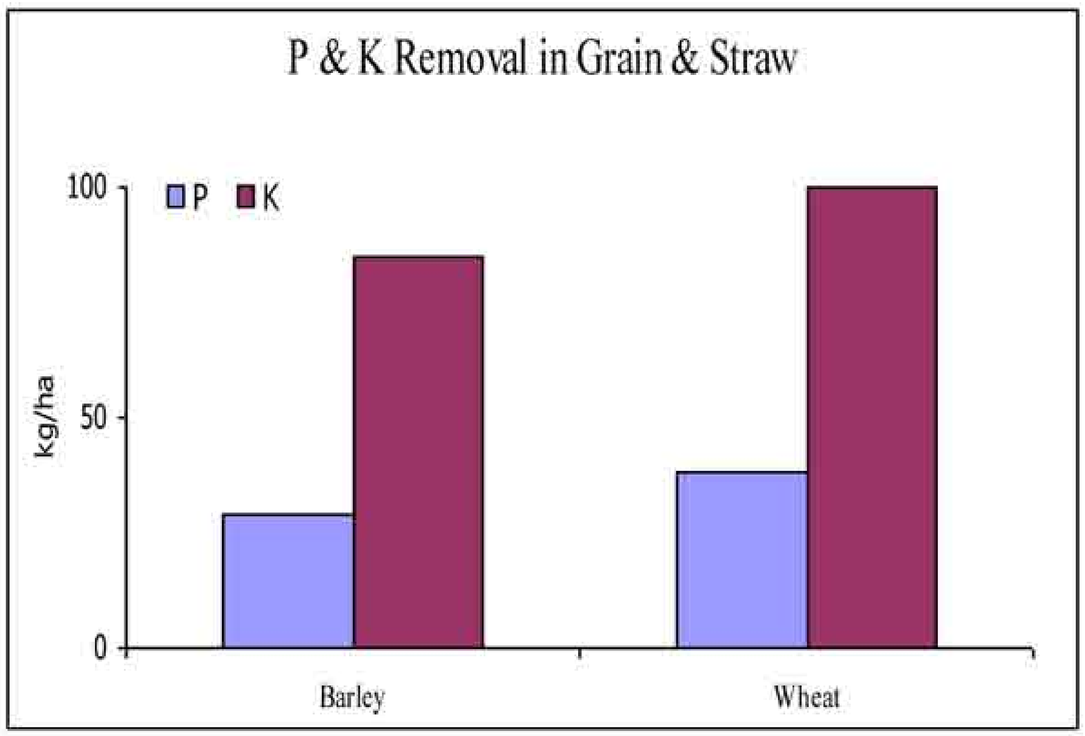
Soil Fertility Management

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

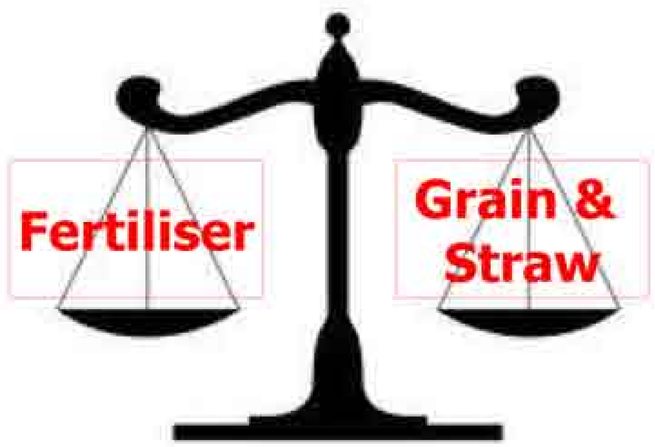
4. Balance Nutrient supply

- Check Lime/sulphur/trace elements
- Max. return on all inputs

Soil Fertility Management (Wx)

Soil P & K levels (%) 2009 and 2011				
Soil Index P & K	P		K	
	2009	2011	2009	2011
1	50	25	0	12.5
2	25	50	50	37.5
3	25	12.5	50	37.5
4	0	12.5	0	12.5

Fertiliser N:P:K Ratio



Soil P +0.3mg/L

Soil K - 5mg/L

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

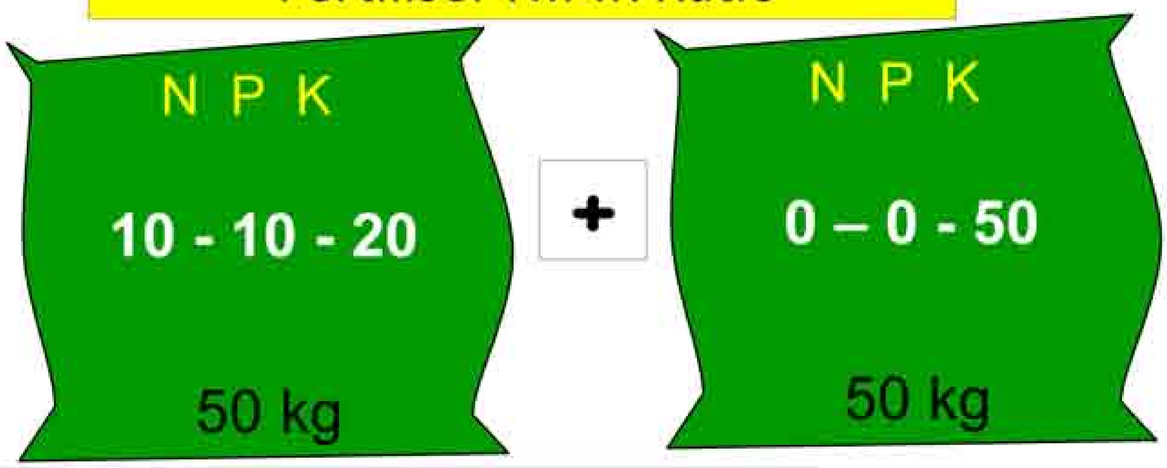
Soil fertility changes very slowly

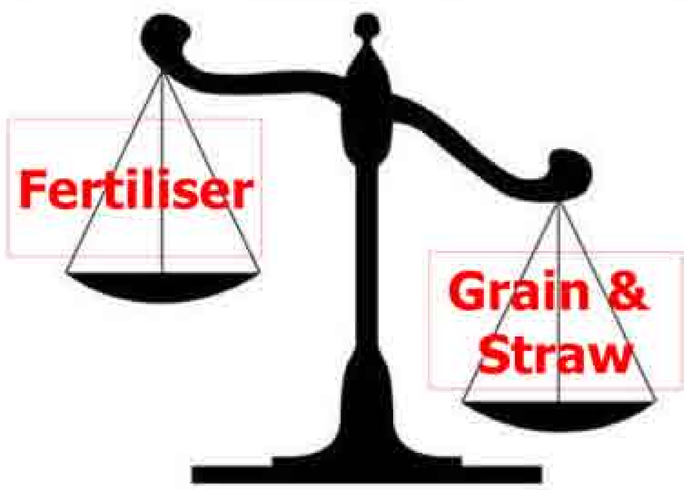
Fertiliser compounds are selected to supply the correct N, P & K balance

Soil Fertility Management (Ck)

Soil P & K levels (%) 2009 and 2011				
Soil Index P & K	P		K	
	2009	2011	2009	2011
1	6	6	12	23
2	12	53	53	71
3	65	41	29	6
4	17	0	0	0

Fertiliser N:P:K Ratio





Soil P -1.9mg/L

Soil K - 31mg/L

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				
Soil Index P & K	P		K	
	2009	2011	2009	2011
1	22	22	44	22
2	67	67	44	56
3	0	0	12	22
4	11	11	0	0

Fertiliser N:P:K Ratio

Soil P -0.1mg/L

Soil K + 19mg/L

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

Department of
Agriculture, Food and the Marine
An Roinn
Talmhaíochta, Bia agus Mara

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

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Agriculture, Food and the Marine
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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

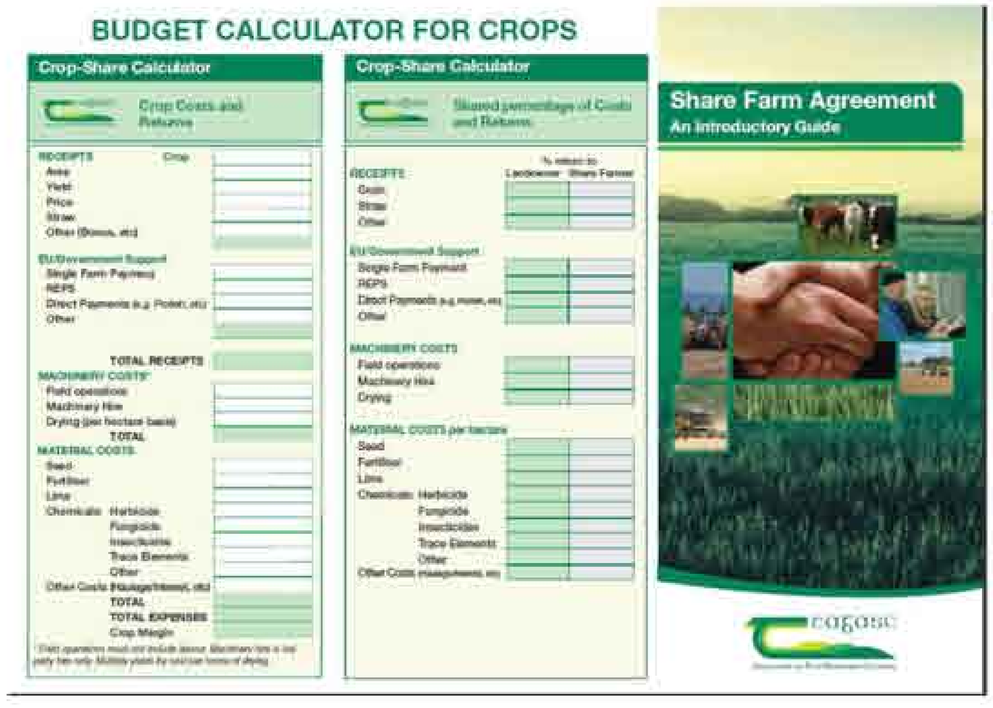
Soil N supply

- Can it be better predicted?

Share Farming

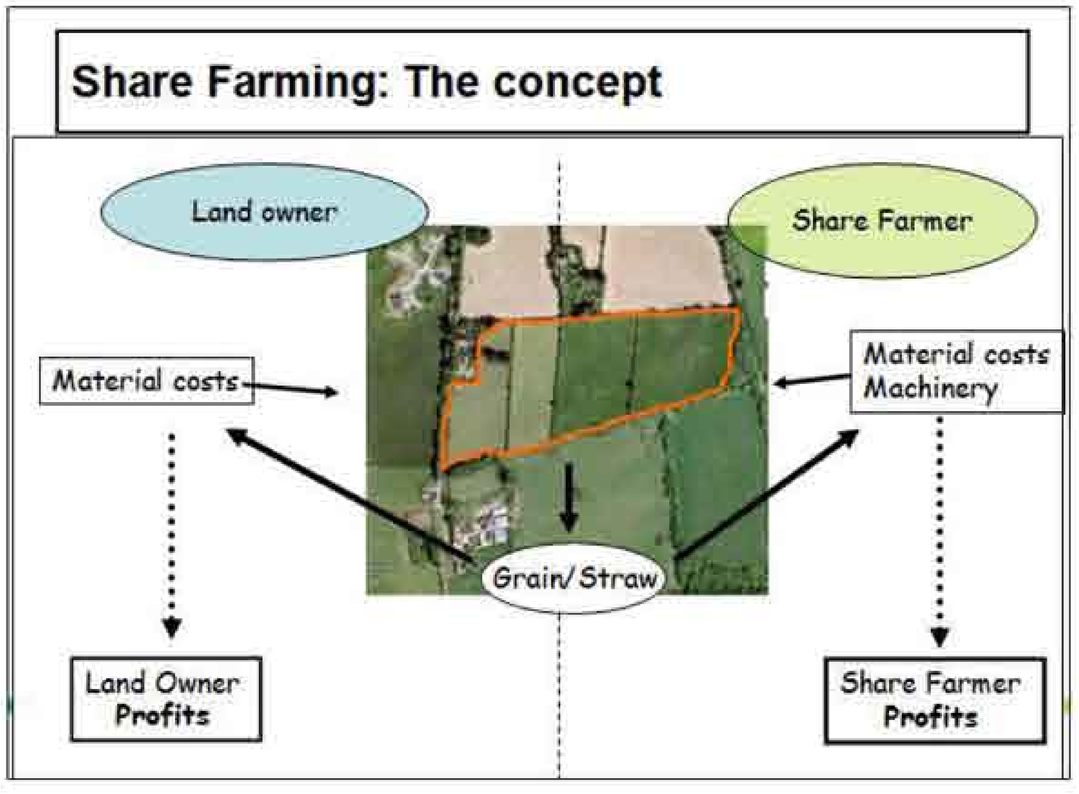
Important Principals

- 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?

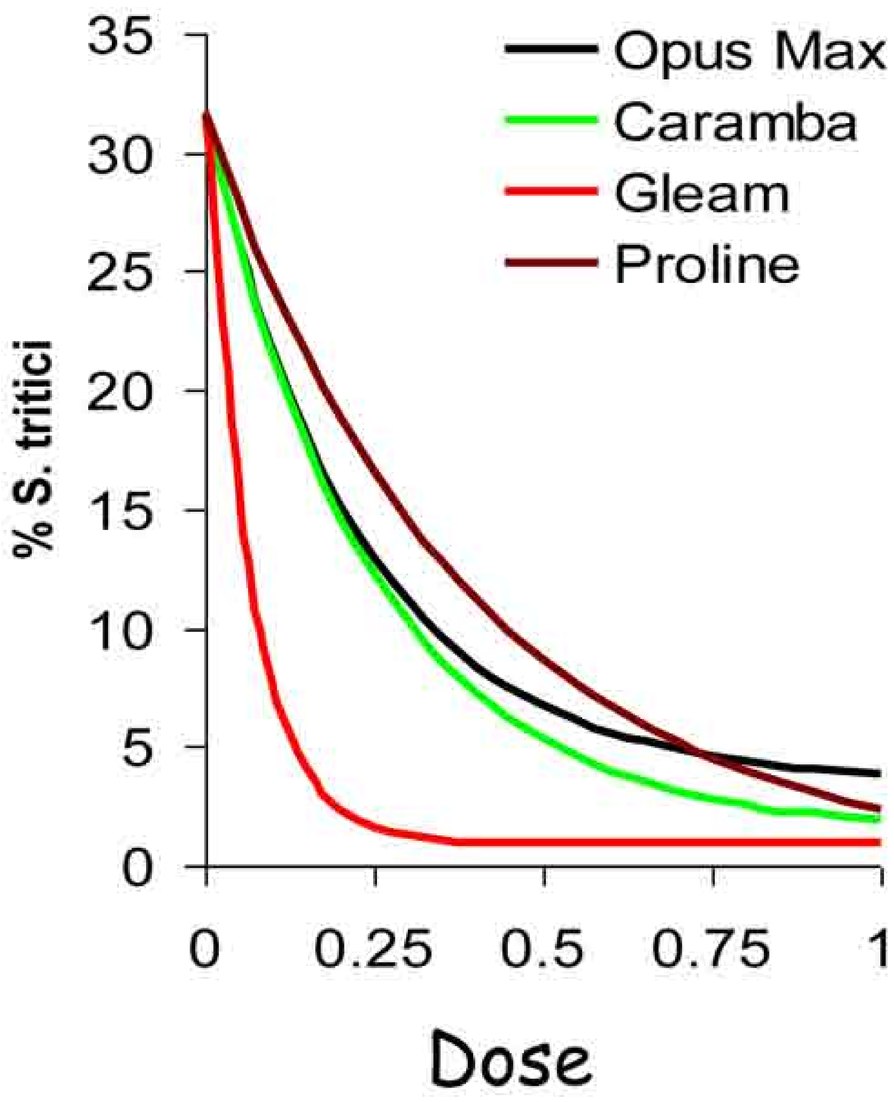
- Both parties must agree on:
  - crop budgets & agreement term
  - sharing input/output
  - individual responsibilities
- Appoint facilitator
- Consult appropriate advisers
- Complete legal document
  - 7 main tables
- At year end – finalise accounts and review

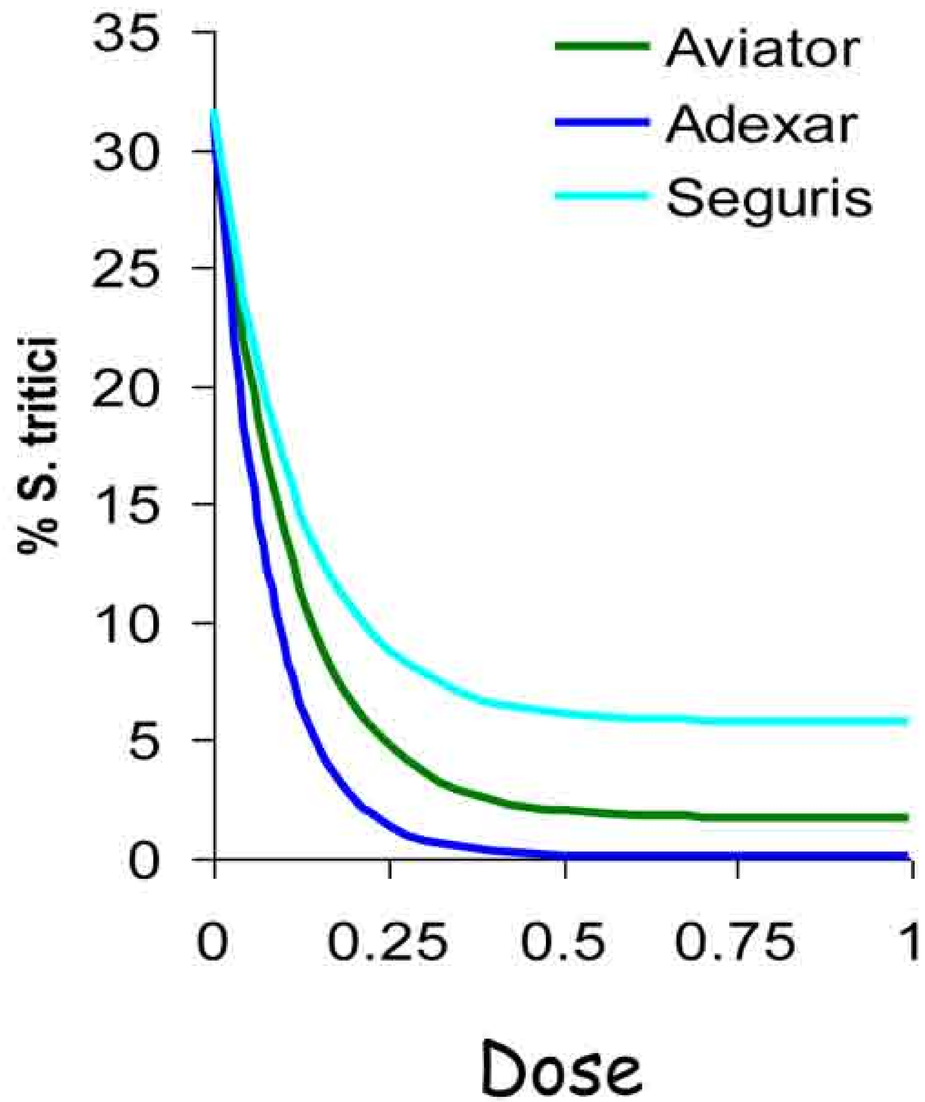


Septoria Control

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

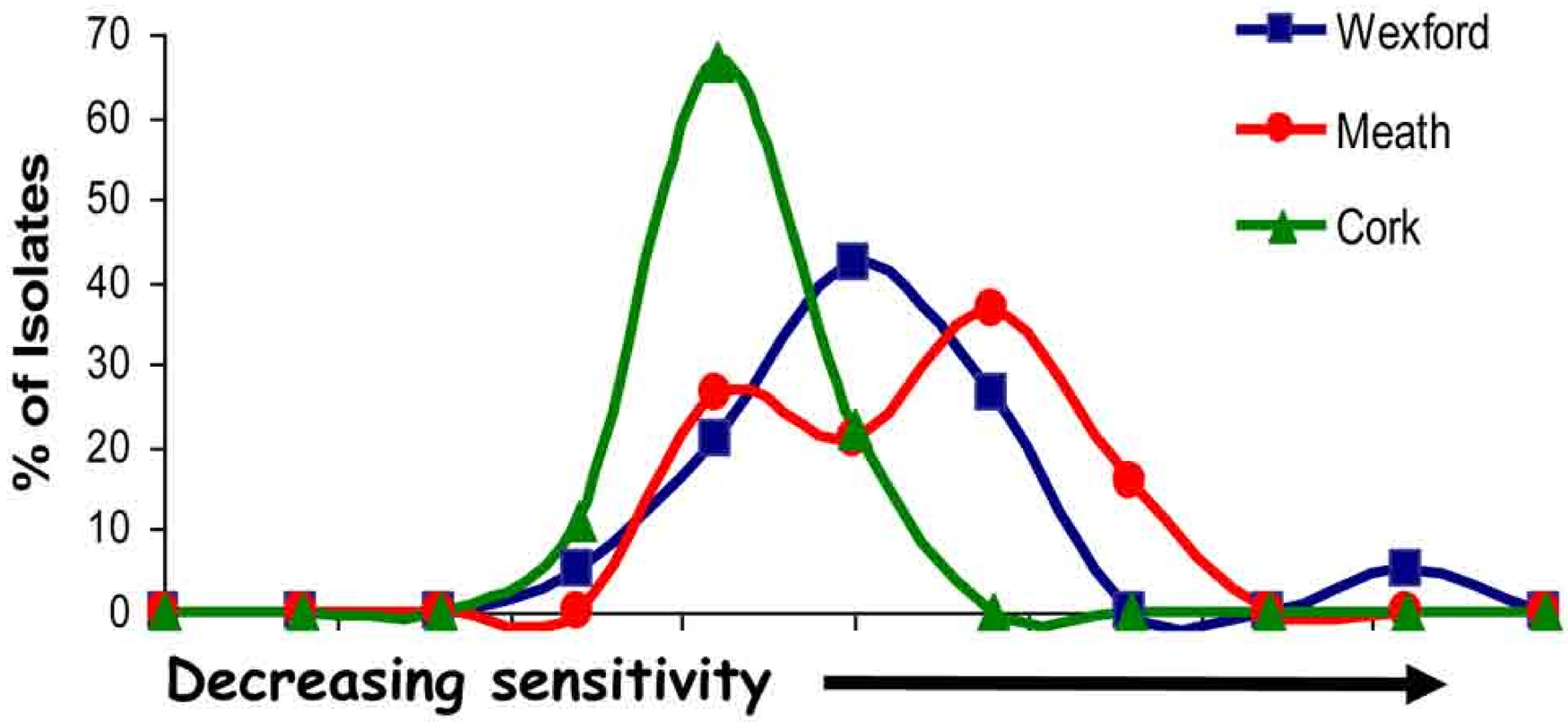
Fungicide Performance 2011 - Leaf 1





Fungicide Trials 2012

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?

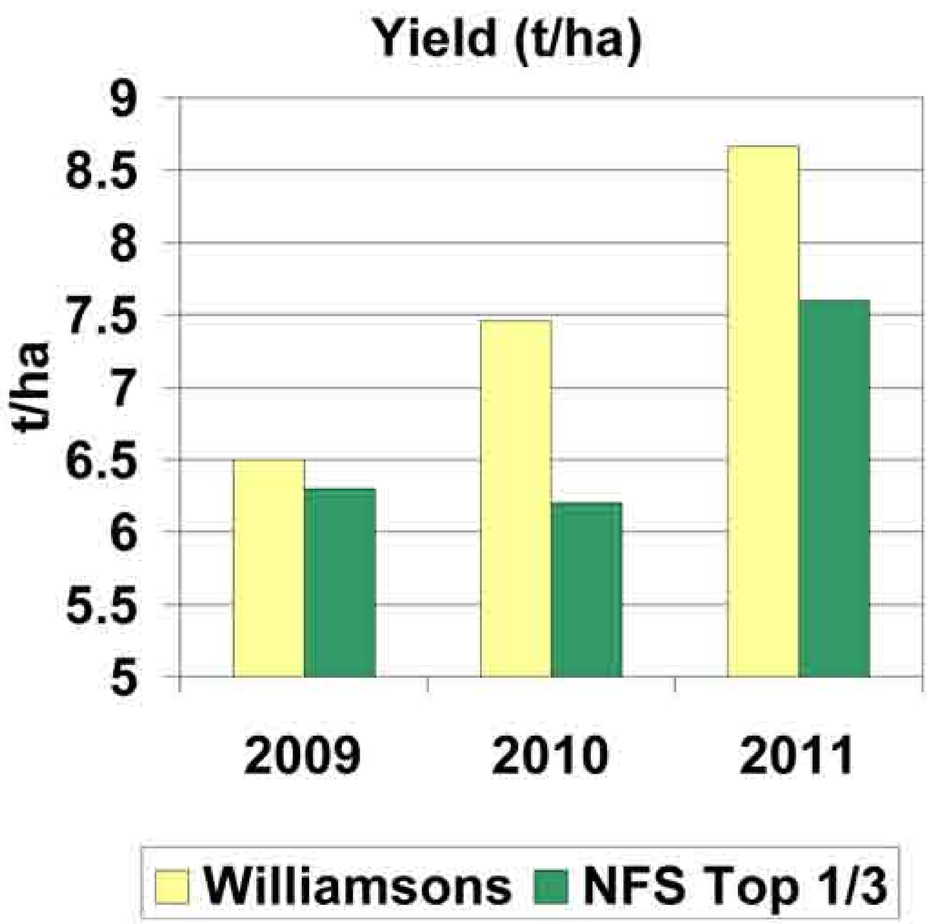
Teagasc Crops BETTER Farm

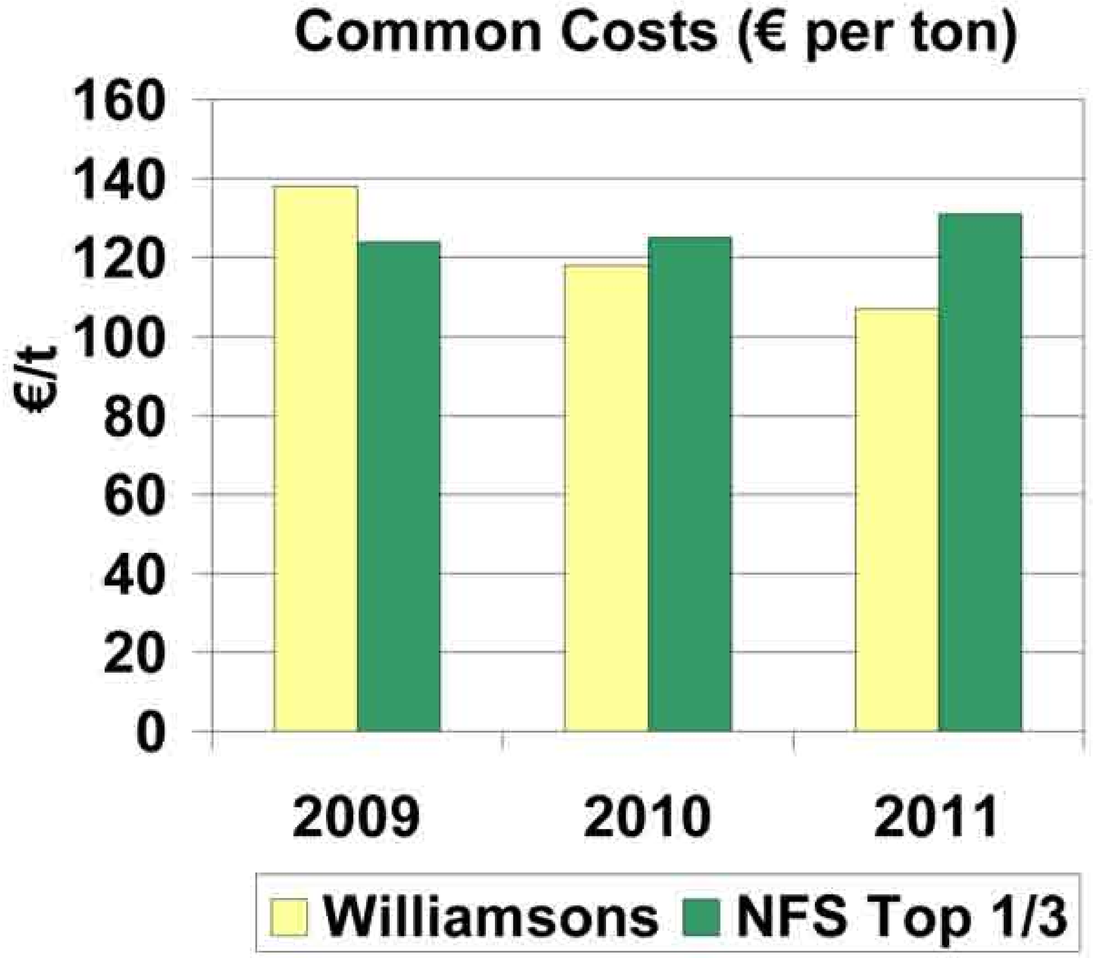
Williamson Farm, Wexford

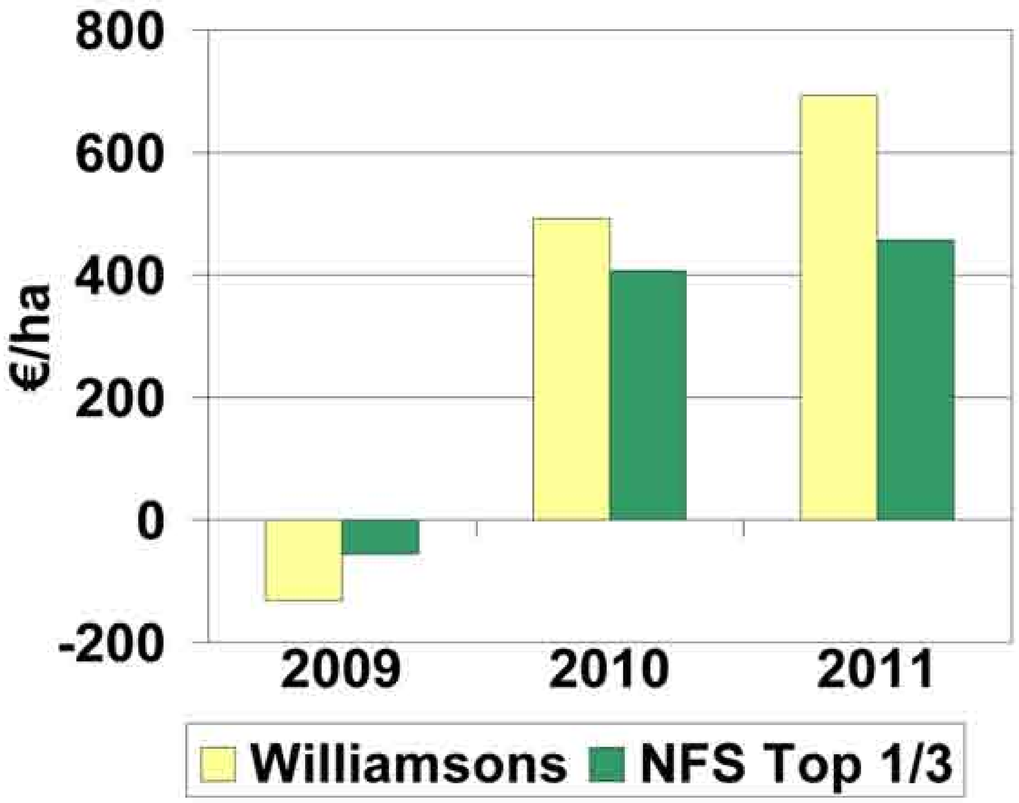
- Farming 145 ha (358ac)
- Small plots over (6 mile radius)
- Over 75% rented
- Land heavy
- Main labour units
  - Ken and George

Challenges 2009	Response 2012
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





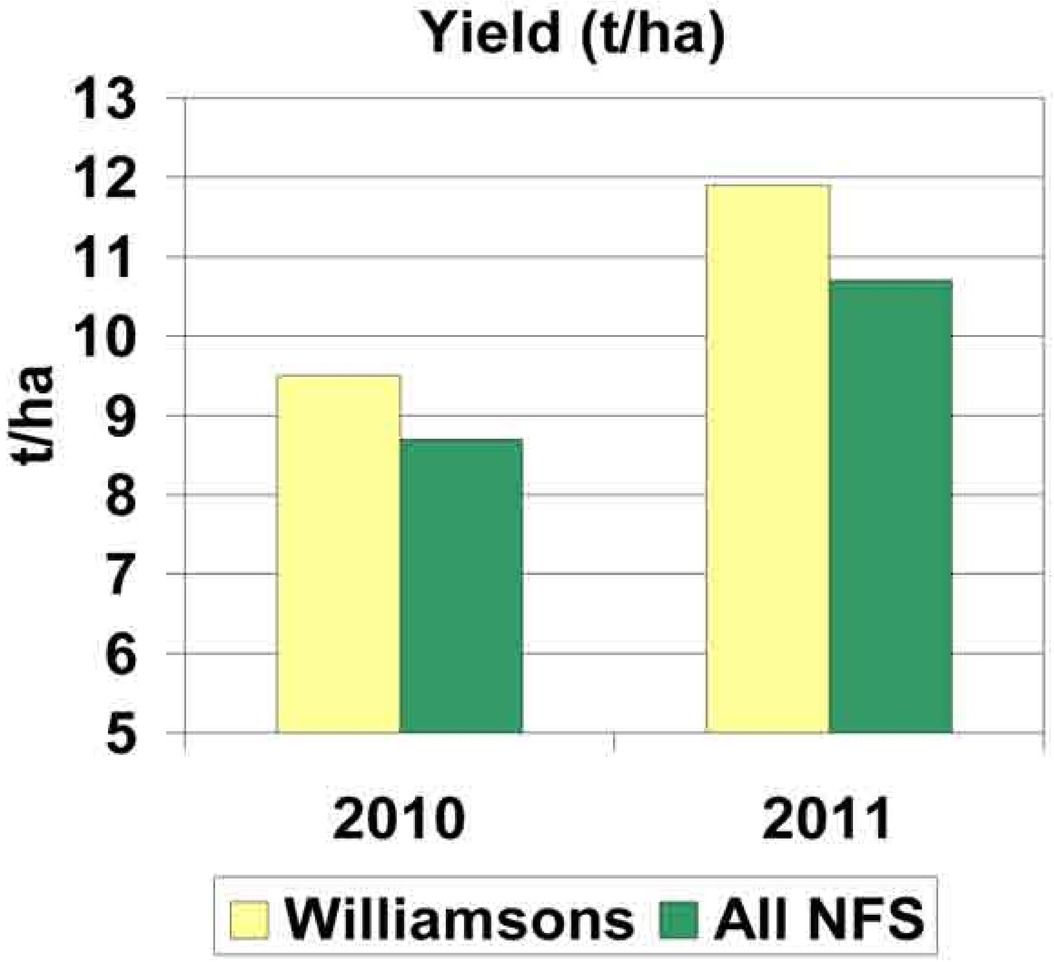


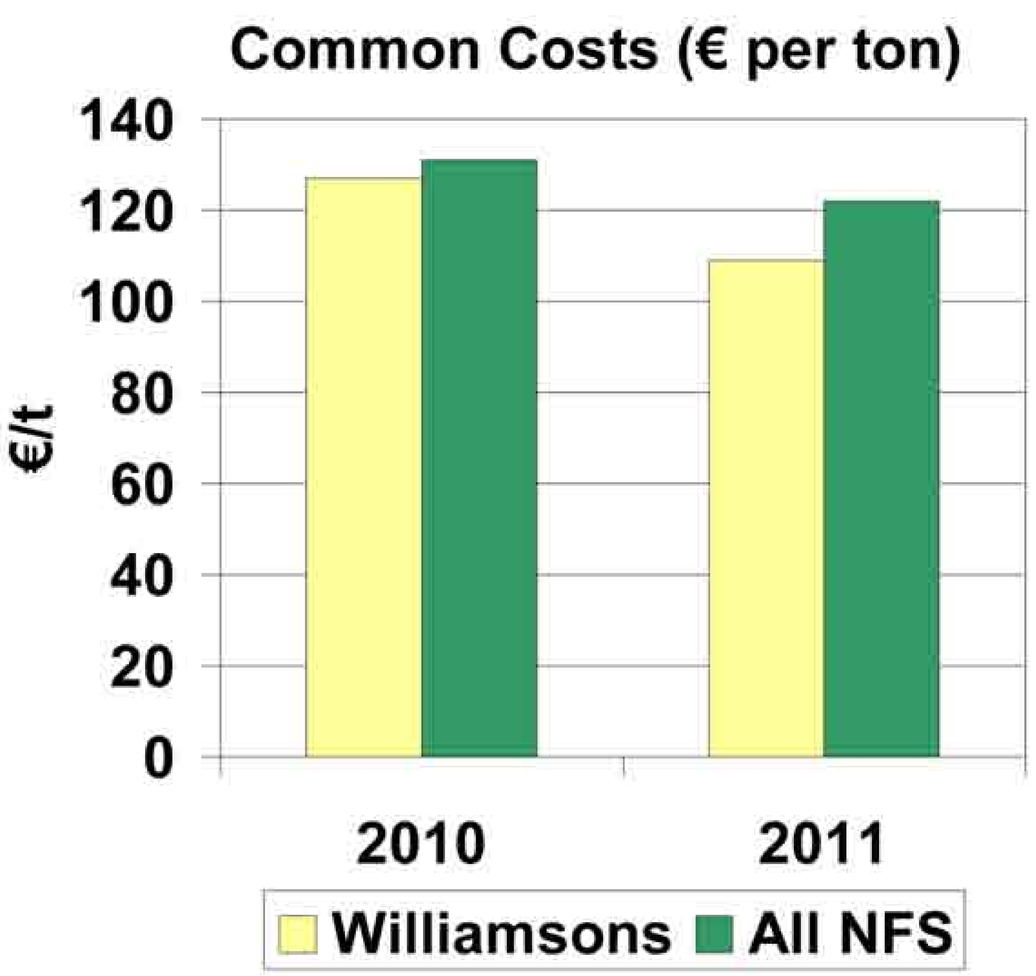
Key Points

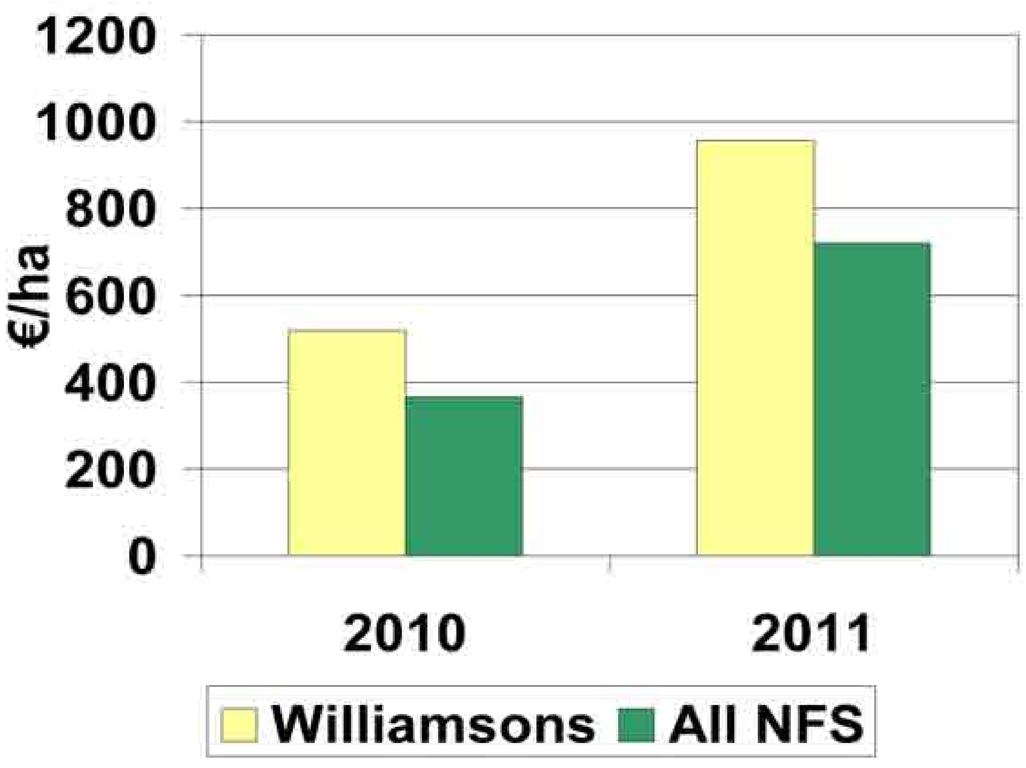
- Yield increase – land suitability
- Common costs -22%
- Organised system

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