

CASH CROPS FOR THE 21st CENTURY

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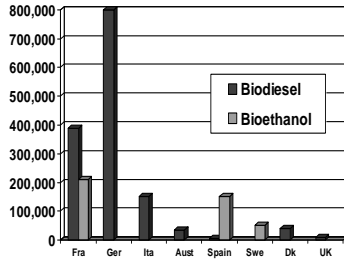
Farming in the 21st Century

- Historically
 - Fuel, food & fibre
- Under the CAP
 - Food, with increasing emphasis on the environment
- Future
 - Fuel, food & fibre

Search for Sustainable Alternatives

- Fossil fuel
 - Security of supply
 - Cost
- Climate change
 - Environmental impact
- EU legislation - 9 EU directives
 - Renewable electricity, Transport biofuels, GHG emission allowances, Landfill of waste, IPPC etc.

Short Term – Biofuels & Biomass



Longer Term - Bio Based Economy

- Agricultural feedstocks as new sources of chemicals and energy
- Biorefining – plant derived raw materials for diverse end uses
 - industrial chemicals
 - pharmaceuticals
 - biofuels
- Timeframe – 10 to 15 years

Crop Choice ?

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 - Bioenergy market opportunities for tillage & grassland farmers
 - Liquid biofuels from arable crops: OSR, SB & cereals
 - Biomass – arable + grassland farmers
 - Profitability & Limitations
 - Crop returns (ROI)
 - Establishment cost
 - Crop rotation
 - Market outlets

Crop Choice ?

- Oil seed rape PPO, biodiesel
- Cereals & cereal byproducts
 - Ethanol
 - Solid biofuel (oats)
 - Straw pellets
- Sugar Beet
 - Ethanol
- Miscanthus – fuel, pellets, 2nd generation biofuels
- Willows – wood chip, pellets, bioremediation
- Reed canary grass – fuel, 2nd generation biofuels
- Hemp –fuel, 2nd generation biofuels, insulation & fibre

Gross Margins (€/ acre)

	Spring Beans	WOSR	W Wheat	W Oats
Inputs	110	141	190	160
Machinery	105	135	140	128
Total Costs	215	276	330	228
Yield/ac (dried)	2.0	1.75	3.7	3.2
€/ t (dried)	180	290	210	200
Subs / straw	22	18	35	35
Output value	382	526	812	435
Gross Margin	167	250	482	447

Willows: GM / acre

Sale Price of Woodchip	No Planting Grant	100% Planting Grant C2,400/ac	No Planting Grant 3 Applications of Sludge	Planting Grant 3 Applications of Sludge
€57/t	-€117	+€54	+€57	+€227
€100/t	+€11	+€170	+€184	+€344

OSR vs Willow / Miscanthus

- OSR
 - Crop knowledge
 - Little additional mechanisation
 - Complements & enhances existing crop mix
 - Beneficial use of SA
 - Market opportunity
 - Positive margin
- Willow / Miscanthus
 - Limited knowledge
 - Reliance on contractors &/or additional investment
 - Long term land commitment (15 yrs)
 - Beneficial use of SA
 - Market opportunity – emerging
 - Margins dependent on planting grant and gate fees

Crop Fit - Arable

- OSR best fits current cropping mix
- Miscanthus / willows require 100% planting grant + substantial gate fees.
- Scale & location critical for biomass crops
- Substantial increase needed in energy payment for all crops
- Market creation through mandatory renewable offtake
- No energy crop viable without Government action

Conclusion

- Irish farmers – pivotal role to play – production of biomass and biofuels
- Sector development dependent on returns
- Sustainability of Irish arable sector and farming
 - enhanced through development of alternative markets in renewable energies
- Bioenergy production:
 - positive for Irish Agriculture
 - positive for the environment
- Need to move further up the value added chain
 - biorefining

Thank You

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