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The cost of maize and alternative forages

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Presentation Overview

- Background
- Cost of maize silage
  - Effect of yield variation
  - Effect of polythene mulch
  - Effect of soil nutrient status
- Costs of alternative winter feeds relative to purchased rolled barley
- Conclusion

Background

- Feed cost is the greatest direct cost (Teagasc NFS,2008)
- Need to control/ reduce feed cost
- Need to evaluate factors affecting feed crop cost:
  - Changing input prices
  - Management
  - Soil and weather
- Grange Feed Costing Model (GFCM; Teagasc Grange 2010)

Analysis assumptions

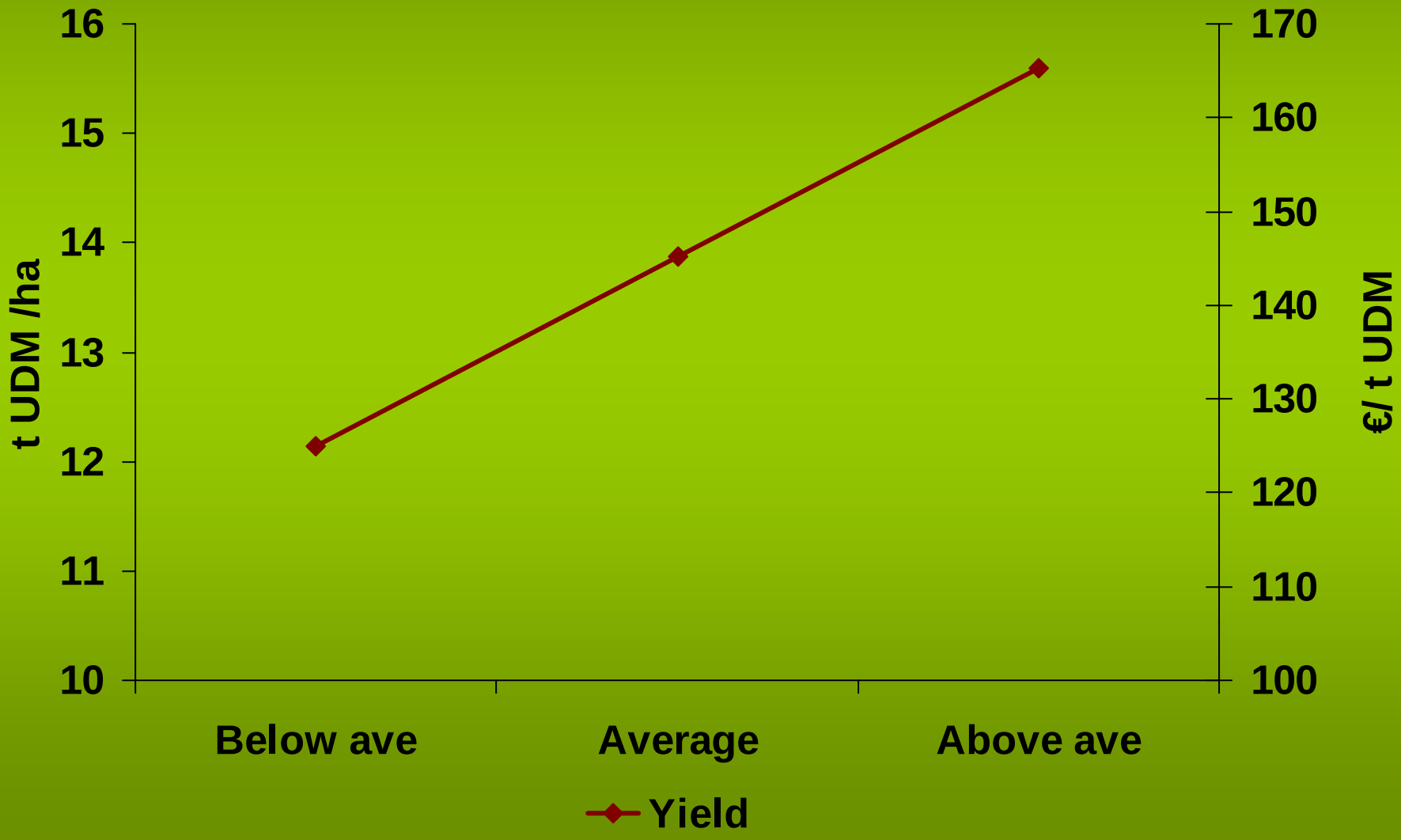
- Soil index 3 for P and K
- High standards of management assumed (yields & quality)
- Annual land charge of €300/ha for all crops
- Current contractor charges for all operations (Teagasc, 2010)
- All chemical fertilisers used (Coulter & Lalor, 2008)
- Jan 2010 fertiliser and spray prices (CSO, IFJ, Teagasc 2010)
- Purchased rolled barley costed at €150/t fresh delivered
- Costs per hectare, per tonne utilised (consumed) dry matter, per 1,000UFL

Cost of maize silage

	€/ha	€/acre
Land charge	300	120
Crop establishment (incl plastic)	713	285
Fertilisers and sprays	432	173
Harvesting	309	124
Feedout	88	35
Other variable costs	70	28
Fixed costs	88	35
Total feed cost	**1,999**	**800**
UDM Yield t/ha, t/ac	13.9	5.6
Total feed cost € / t UDM	**€144**	

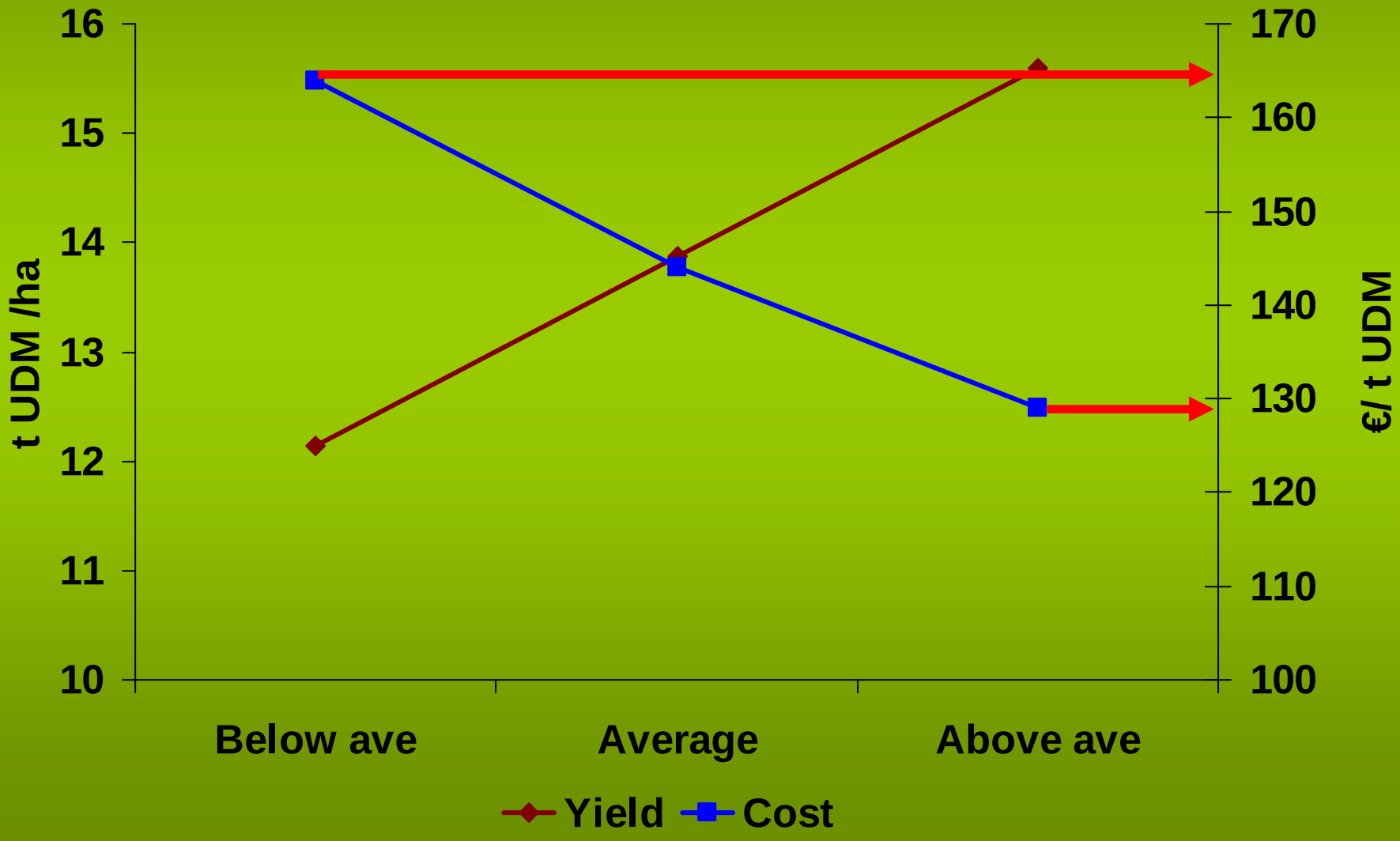
Source: GFCM, Teagasc, Grange

Effect of yield variability



Source: GFCM, DARDNI, DAF, Teagasc, UCD

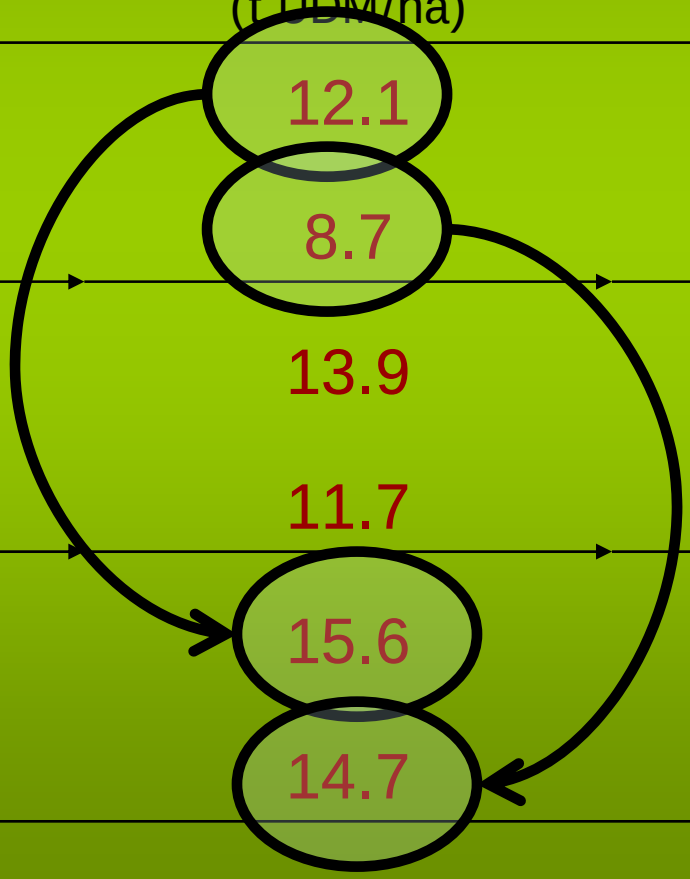
Effect of yield variability



Source: GFCM, DARDNI, DAF, Teagasc, UCD

Maize yields with and without plastic

Yield	Plastic/No Plastic	Dry Matter Yield (t UDM/ha)	Energy Yield ('000 UFL/ha)
Below average	P	12.1	9.7
	NP	8.7	6.8
Average	P	13.9	11.8
	NP	11.7	9.4
Above average	P	15.6	14.0
	NP	14.7	13.2

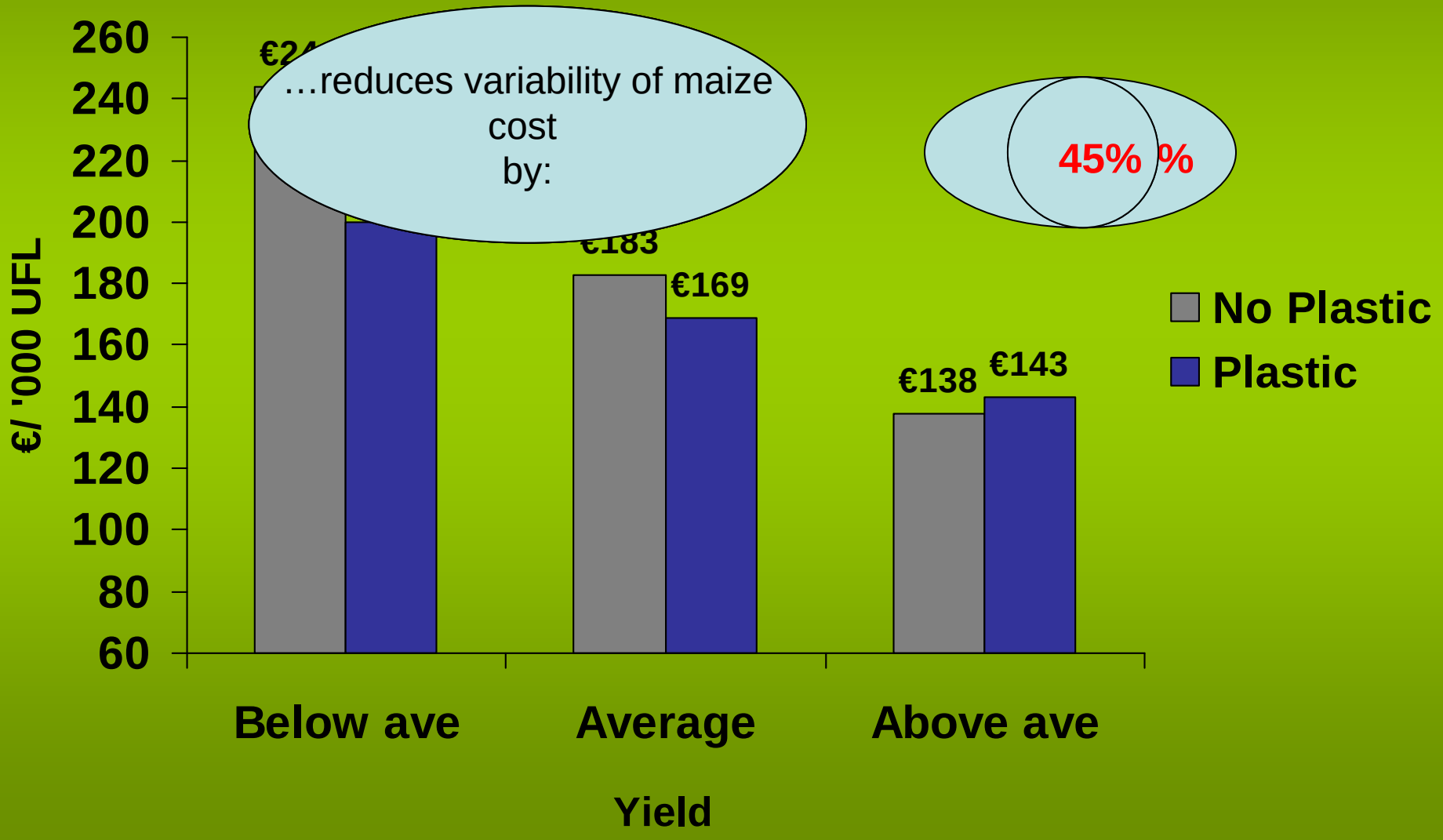


Source: GFCM, DARDNI, DAF, Teagasc, UCD

Plastic effect on maize cost: DM basis

Source: GFCM, DARDNI, DAF, Teagasc, UCD

Plastic effect on maize cost: Energy basis



Source: GFCM, DARDNI, DAF, Teagasc, UCD

Effect of soil nutrient status and slurry usage

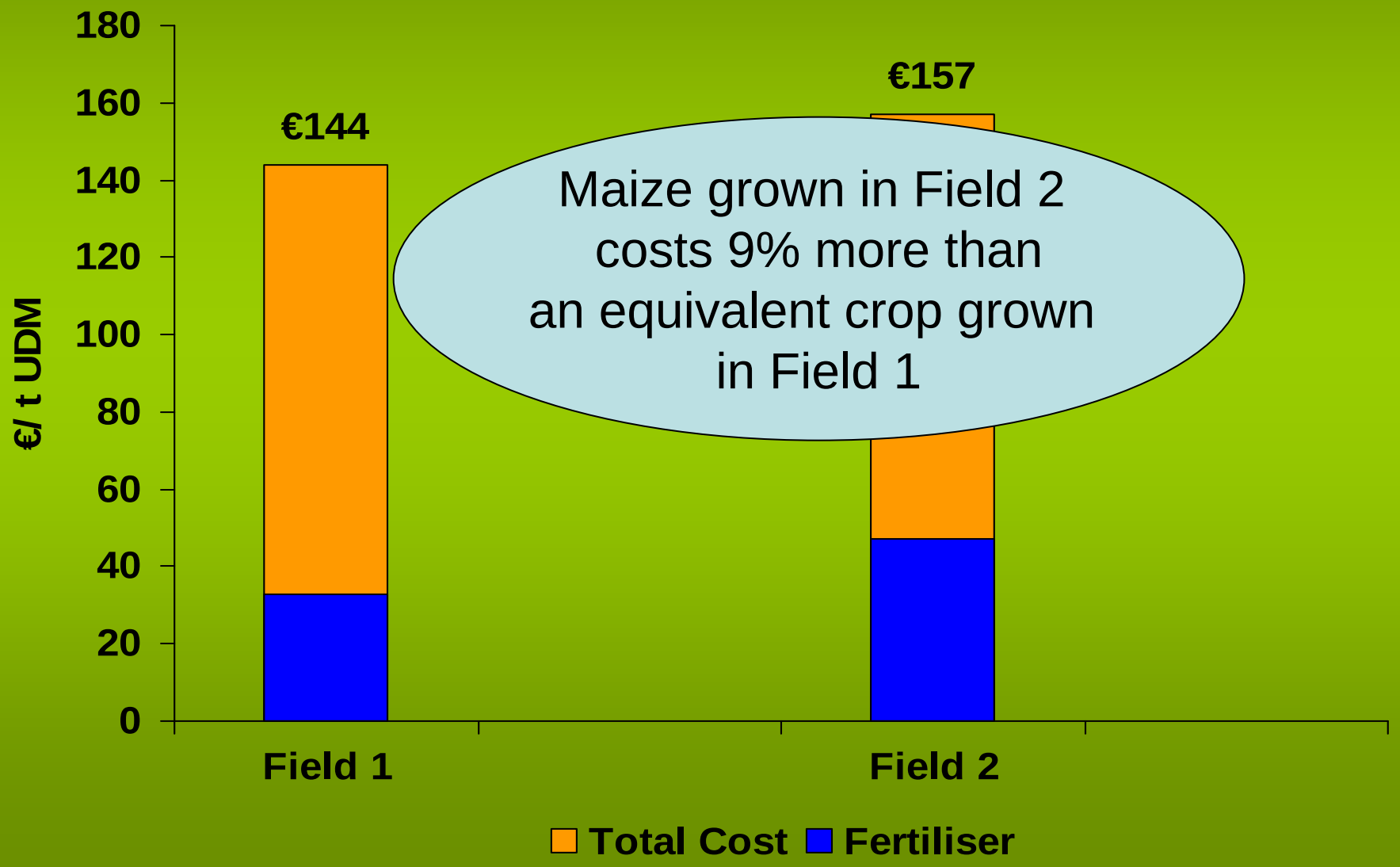
- Field 1: High P and K status. Previously permanent grassland.
- Field 2: Low P and K status. Previously in continuous maize/cereals.

Soil Indices

	N	P	K
Field 1	2	3	3
Field 2	1	1	1

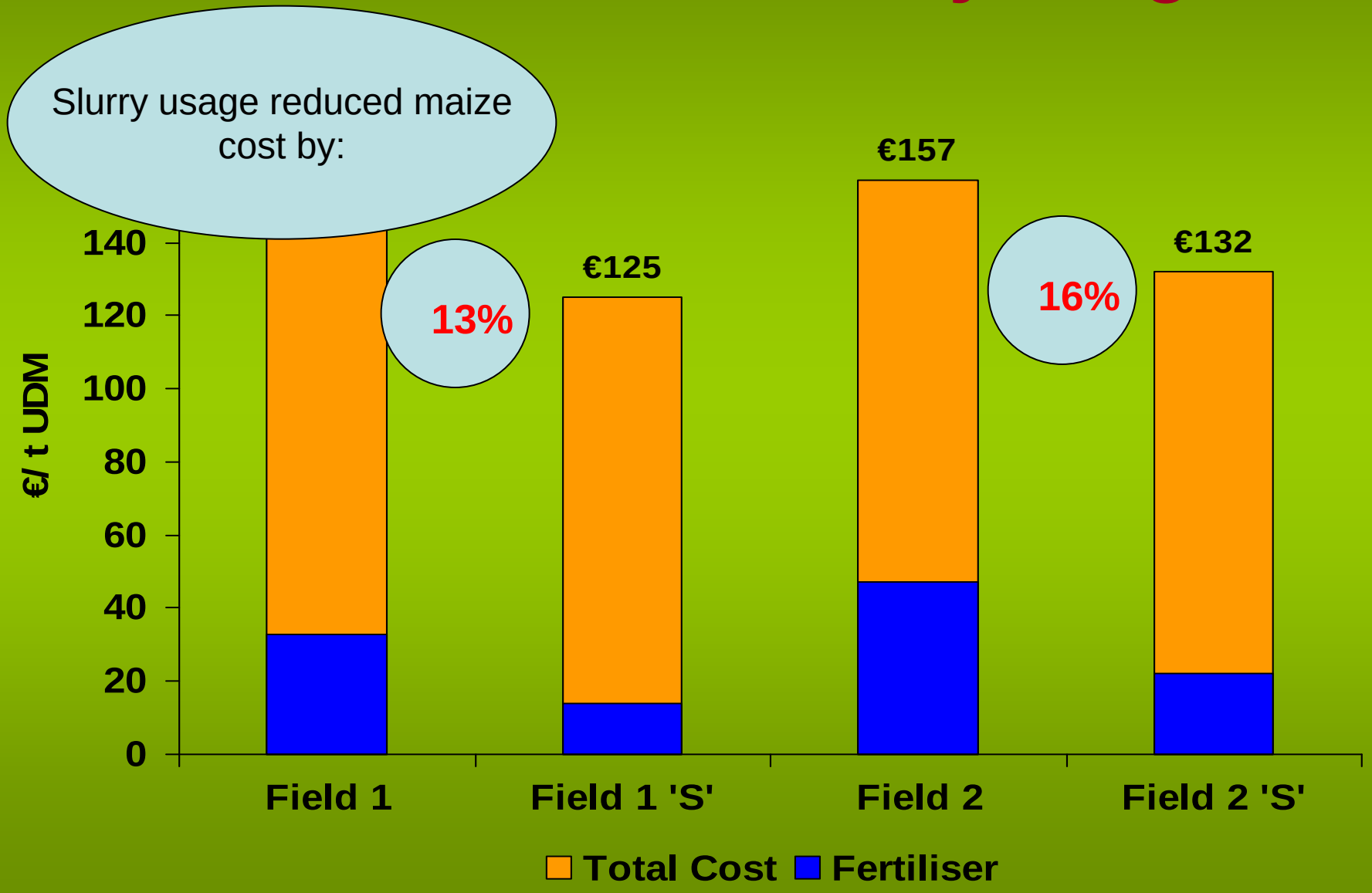
Source: Coulter & Lalor, 2008

Effect of soil nutrient status



Source: GFCM, DARDNI, DAF, Teagasc, UCD

Effect of cattle slurry usage



Source: GFCM, DARDNI, DAF, Teagasc, UCD

Alternative feed crops
Utilisation and yield

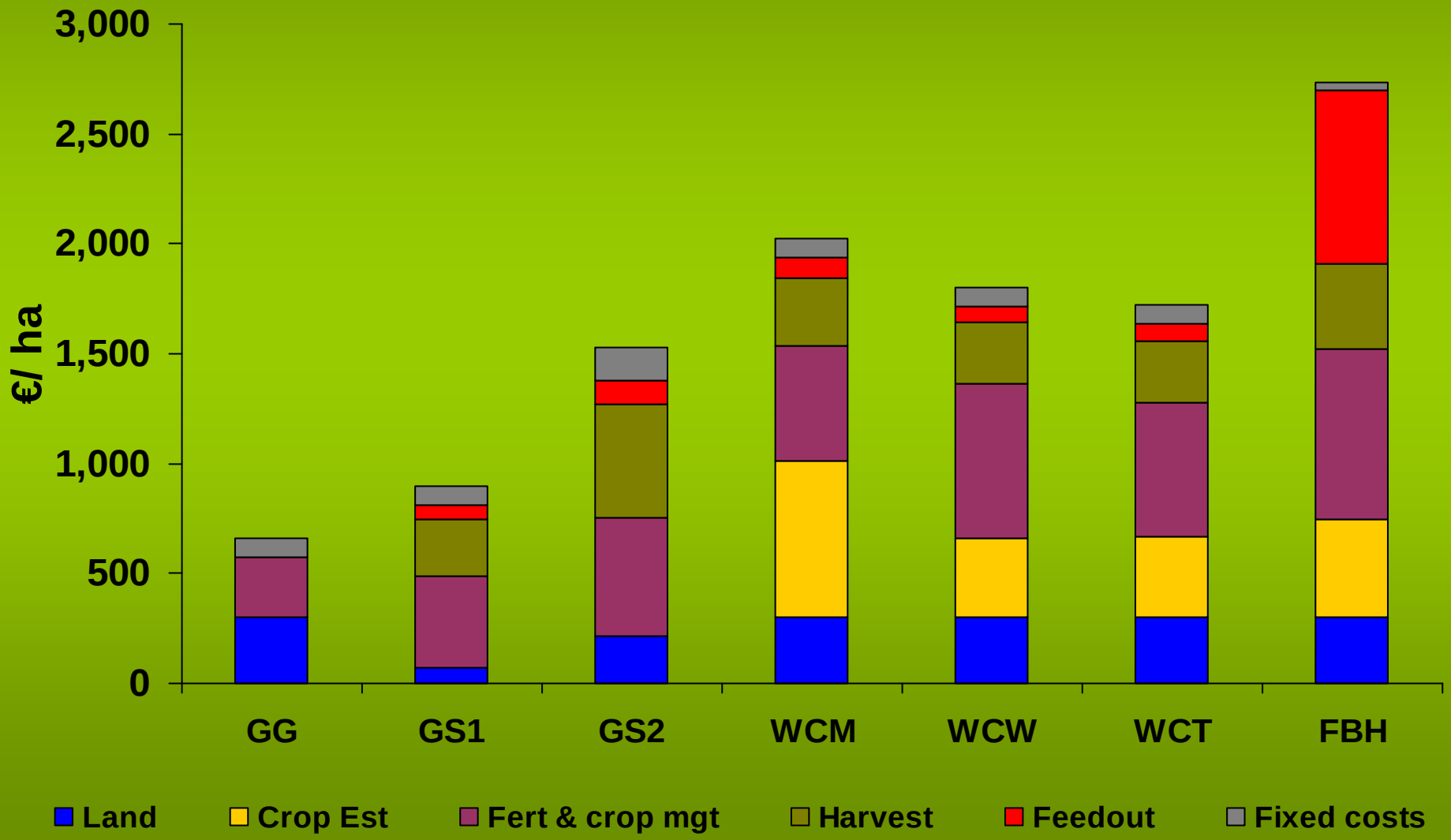
	Utilisation[1]	Yield (t UDM)
Grazed grass	0.75	9.0
One cut silage system	0.81	6.75
Two cut silage system	0.81	10.5
Maize	0.86	13.9
Whole crop wheat	0.86	13.8
Whole crop triticale	0.86	14.4
Fodder beet	0.81	12.1

[1]Utilisation: kg consumed per kg grown

Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

Alternative feed crops

Components of feed cost



Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

Alternative feed crops

Total feed cost / ha

Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

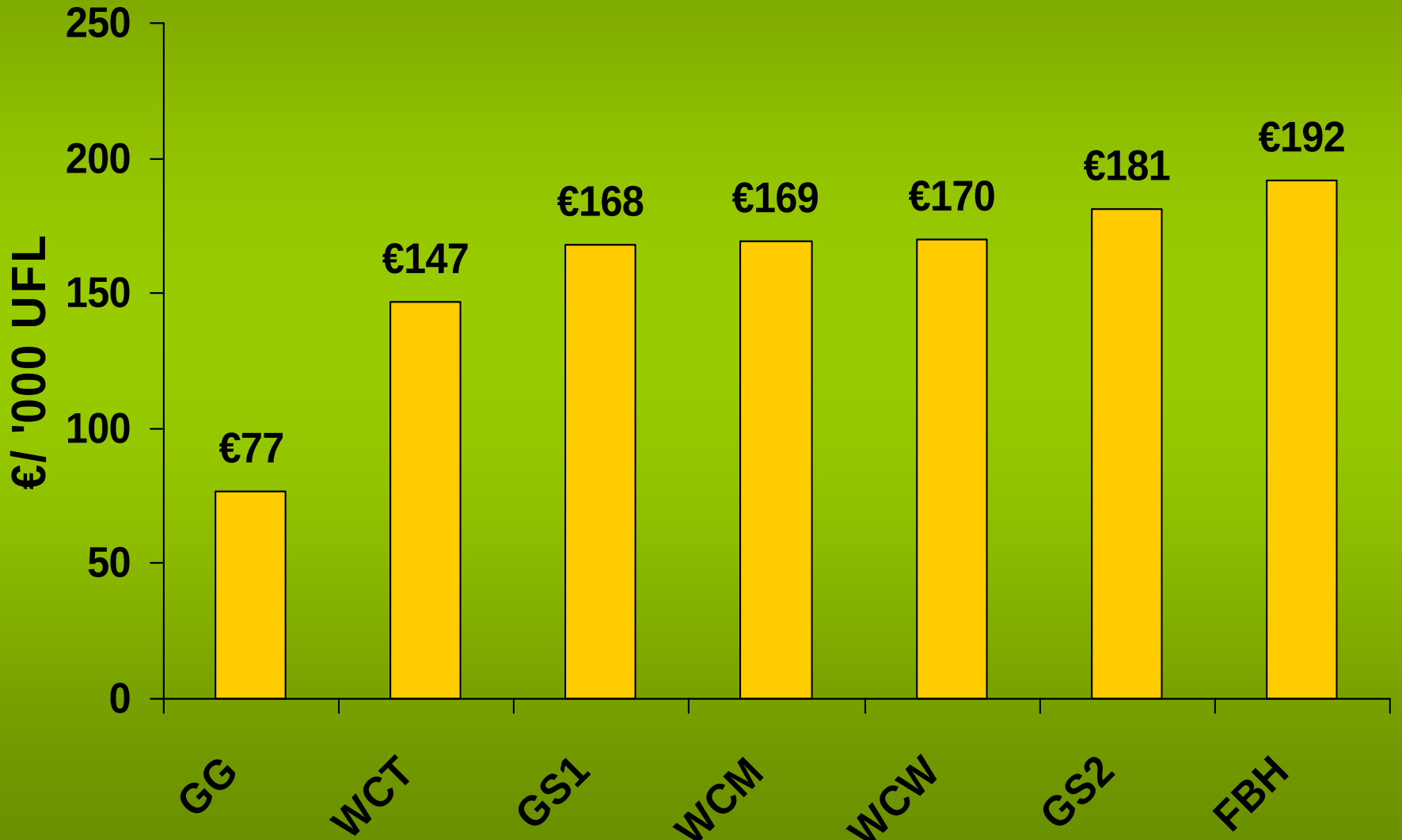
Alternative feed crops

Total feed cost: DM basis

Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

Alternative feed crops

Total feed cost: Energy basis



Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

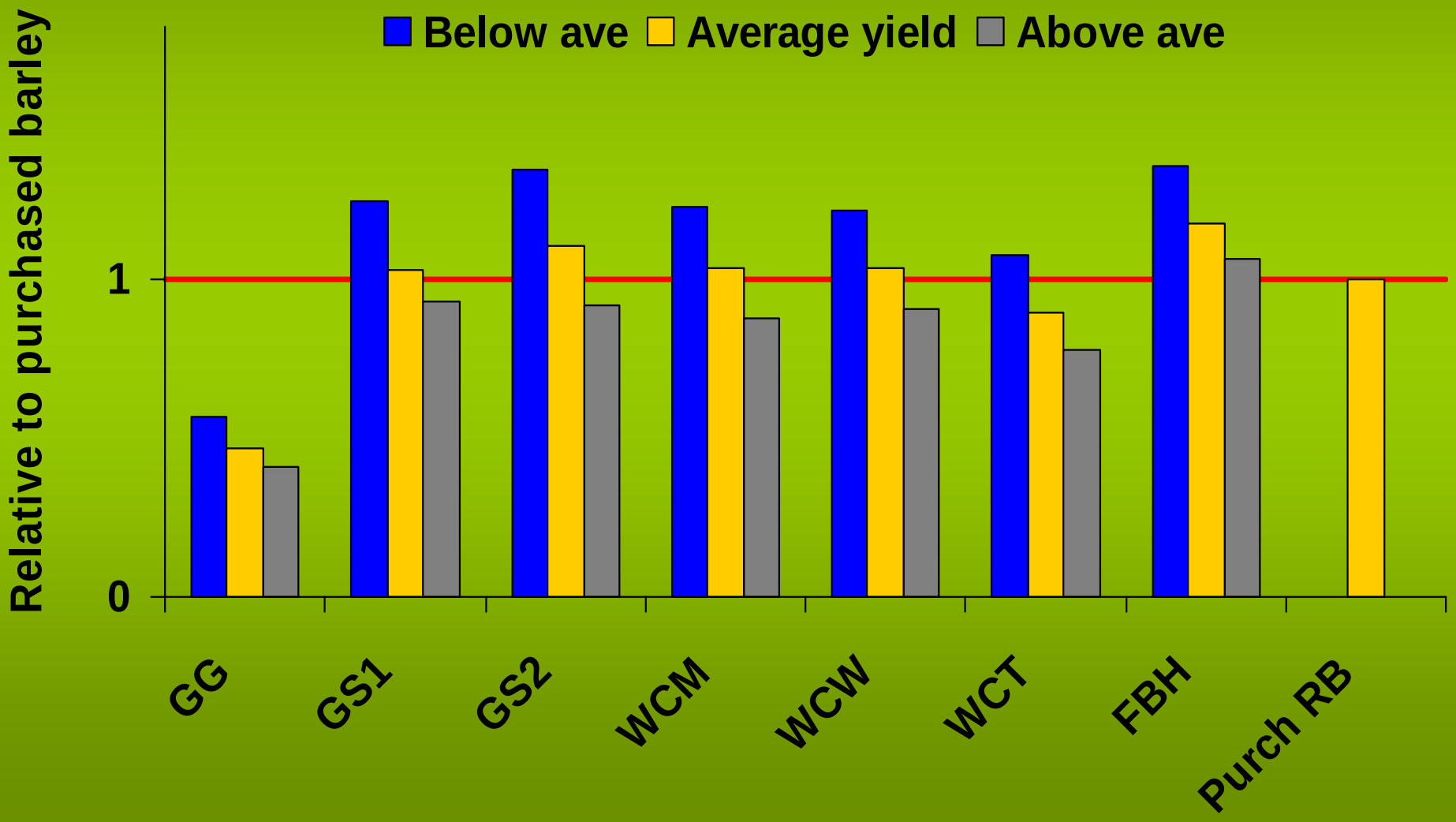
Alternative feed crops

Total feed cost: Energy basis

Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

Cost relative to purchased barley

Energy basis



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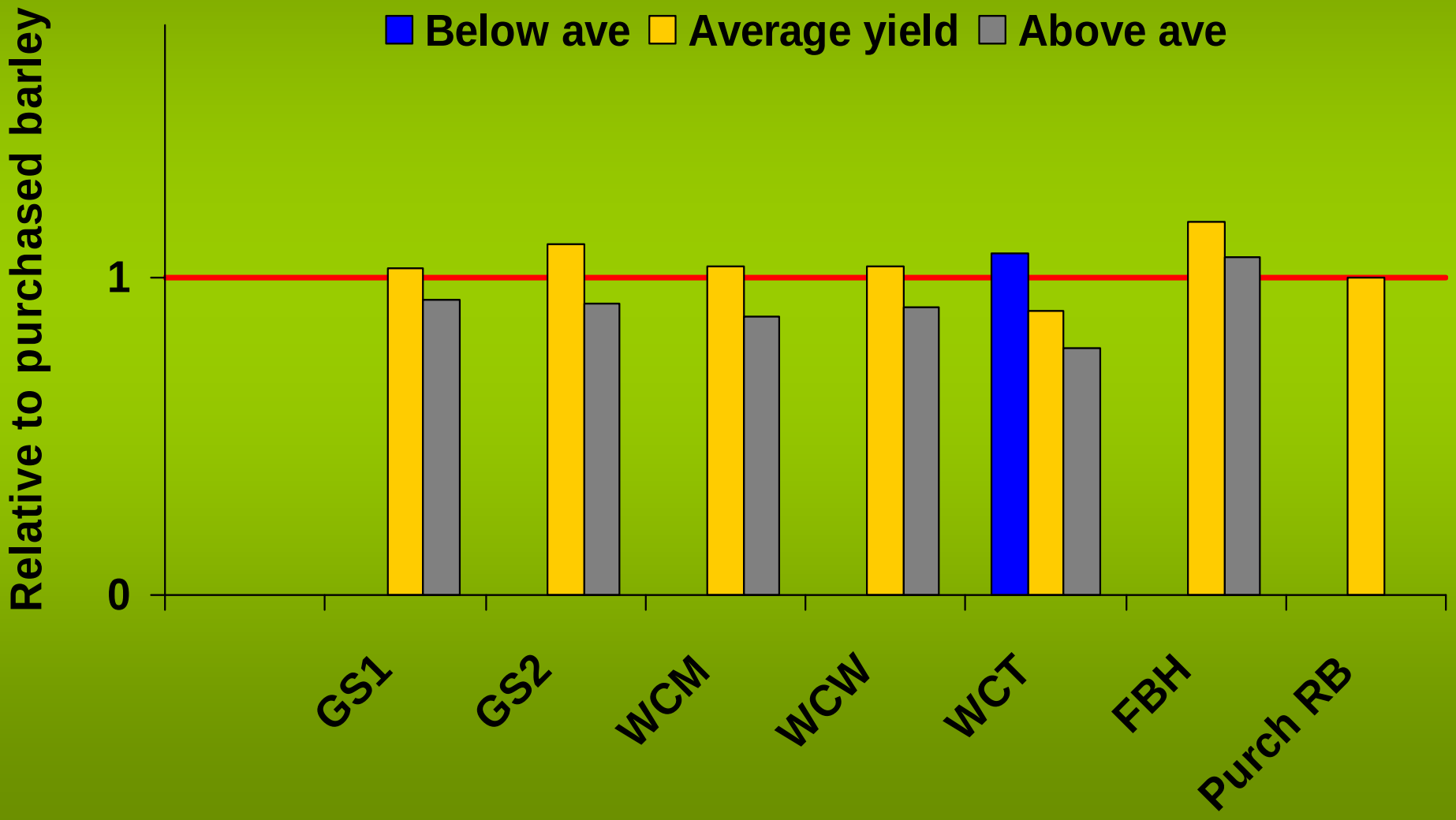

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Cost relative to purchased barley

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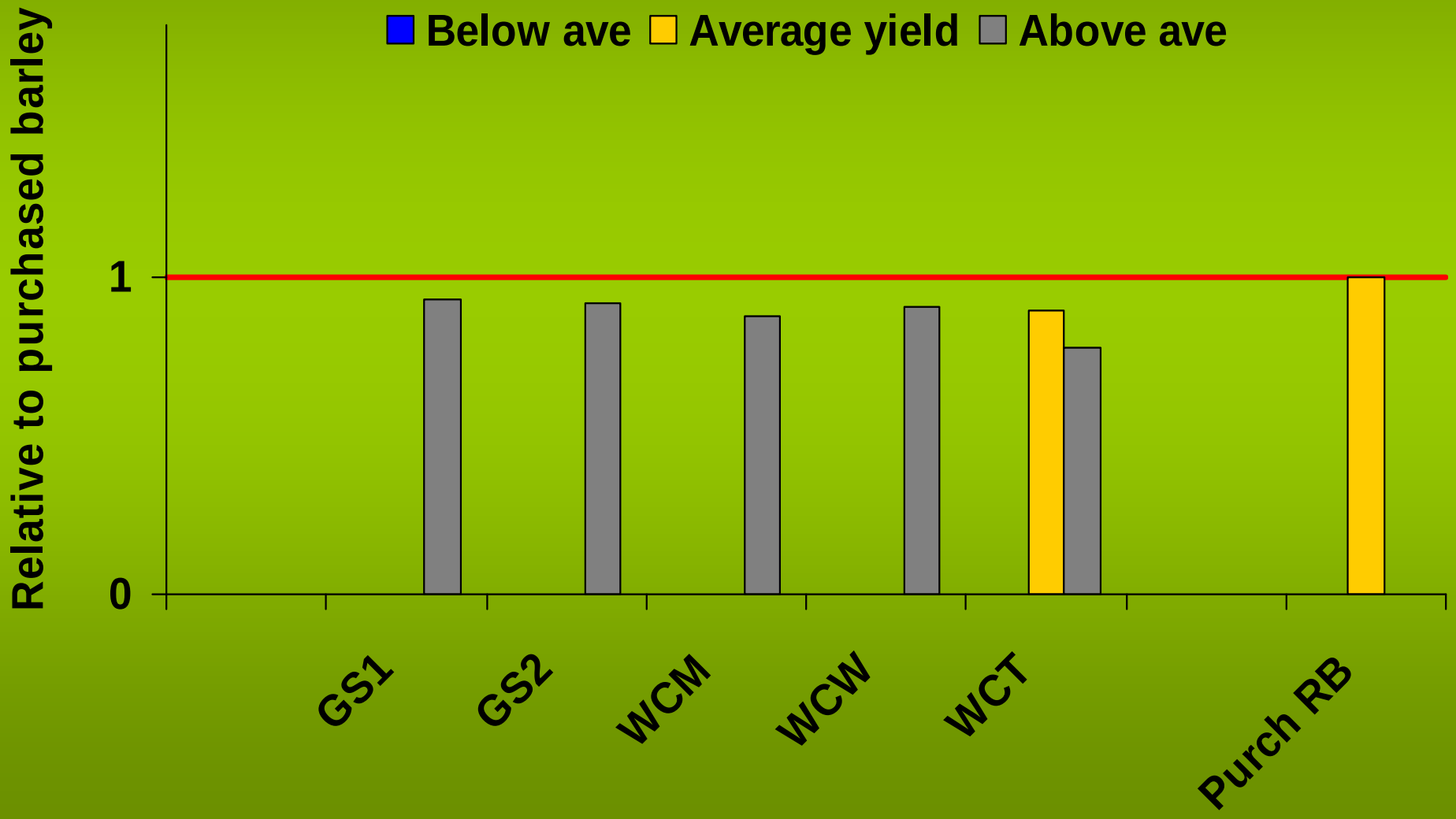

Source: GFCM, DARDNI, DAF, Teagasc, UCD,CSO

Conclusion

- Yield is the greatest factor affecting feed cost variability
- Soil nutrient status and testing is important
- Plastic important for maize, particularly wrt crop quality
- There are range of cost competitive winter feeds
- Range of factors affect the choice of feed crops including:
  - Cost of production and feeding
  - Livestock feed requirements
  - Farm layout
  - Available facilities and labour


Thank you for your attention