

Competitive Production Systems

Cost, Benefit and Scale Effects

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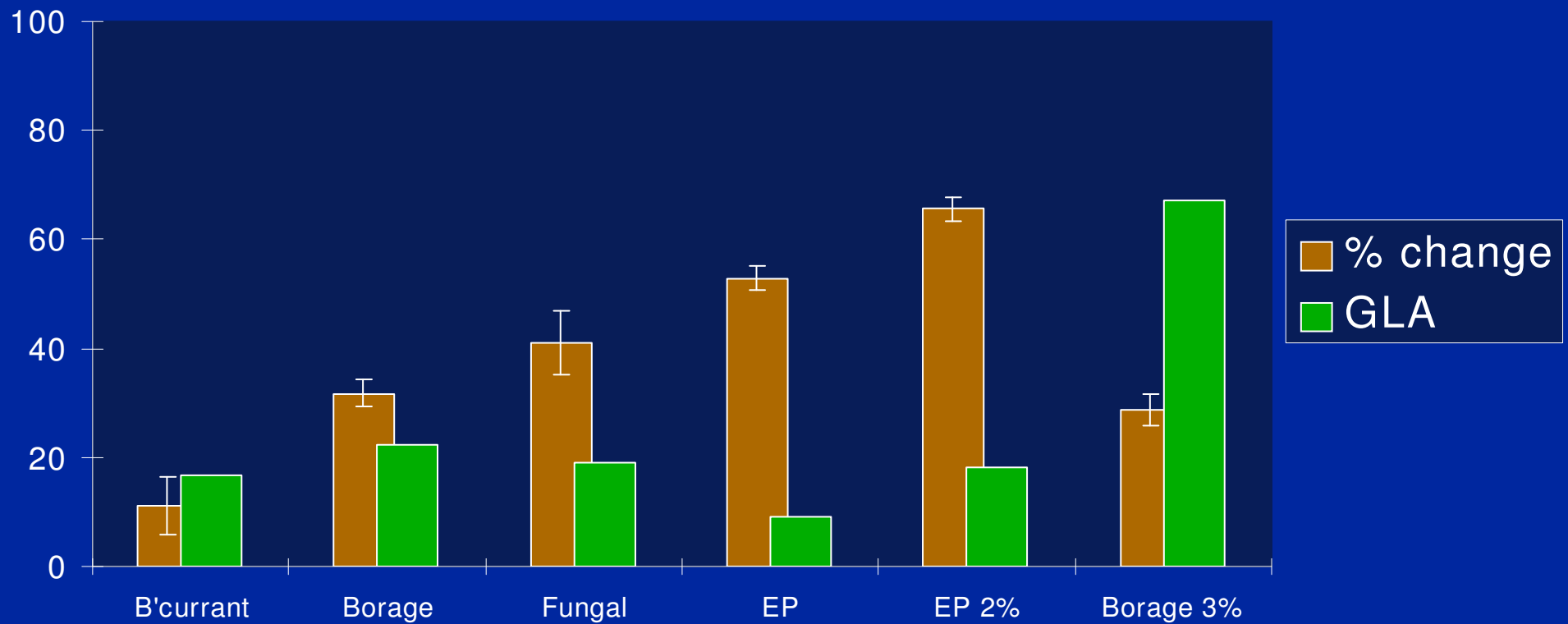
Potential Markets for GLA

- Pharmaceutical
- Health Food
- Cosmetic
- Veterinary
- Bulk nutritional

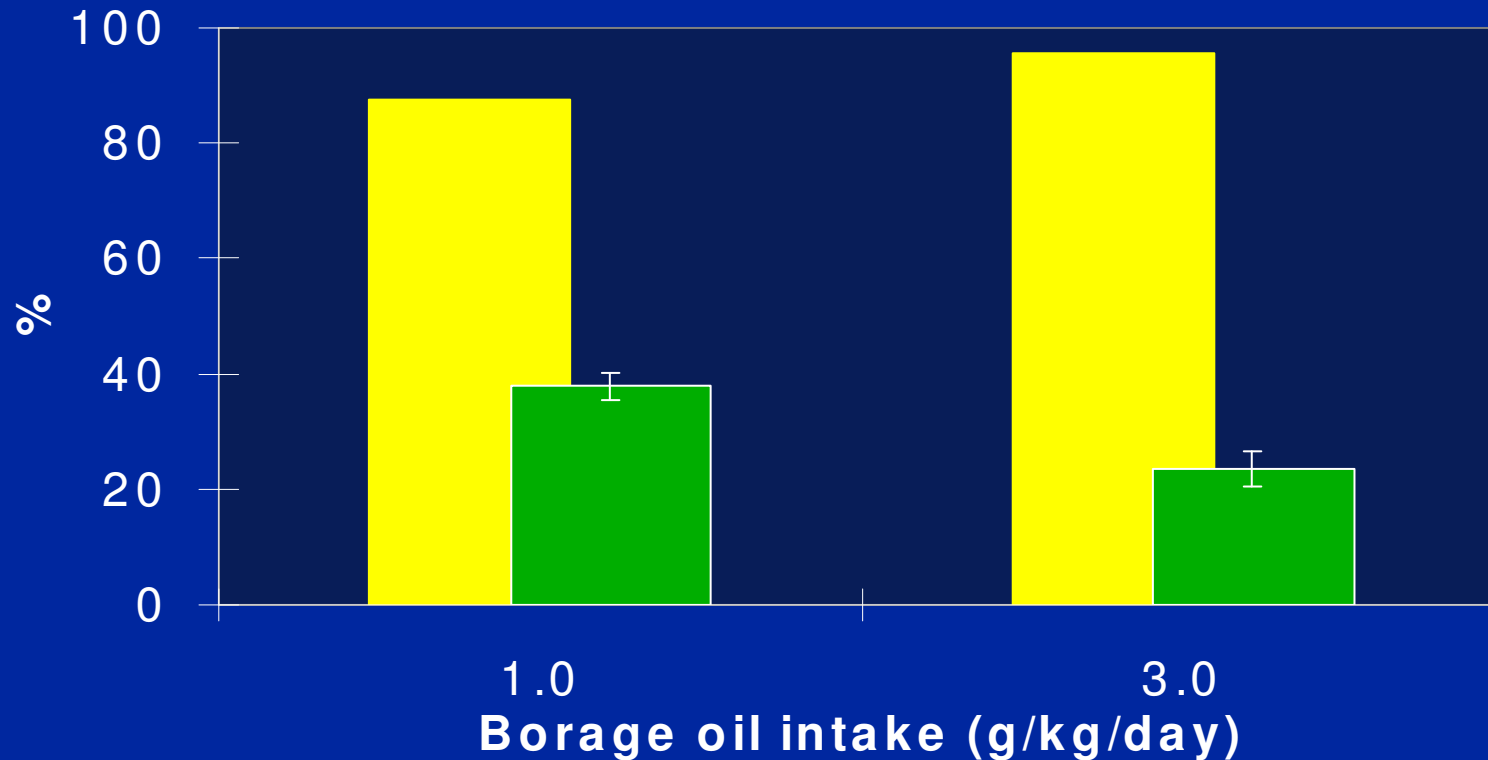
Potential Sources of GLA

- Direct synthesis
- Chemical transformation
- Fermentation
- Plants - cultivated
- Plants - wild

NCV Improvement in Diabetic Rats Treated with GLA



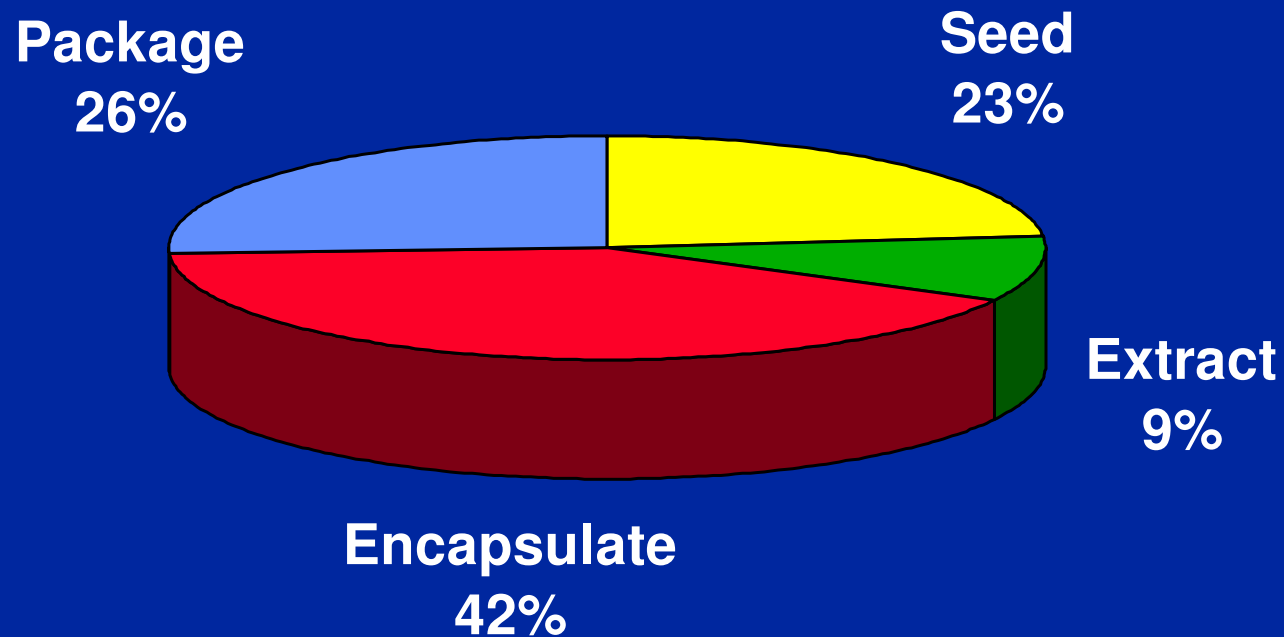
Comparison of Borage Oil with EPO for Equivalent Dose of GLA



Potential Cost Savings from GMO

	EPO	Borage	Sunflower	GMO Sunflower?
Cost/kg Seed	£1.00	£2.75	£0.18	£0.25
Oil Content	22%	30%	50%	50%
Cost/kg Oil	£4.55	£9.17	£0.36	£0.50
GLA Content	9%	22%	0%	22%
Cost/kg GLA	£50	£42	-	£2.30
Saving cf. EPO	-	17%	-	95%

EP Capsule Cost Structure



Acceptability Matrix

	Pharmaceutical	Health Food	Bulk Nutrition
EPO	✓	✓ ✓	✓
Borage	(✓)	✓	✓
GMO	(✓)	X	?
Concentrate	✓ ✓	X	(X)

Selection of Target Species

- Easy to transform
- Mainstream Crop
- Risks of adulteration?

- Alternatives?

Conclusions

- Match development to the market
- Market forces are not logical
- Choose target species with care