The FARM CONSULTANCY Group

# How to Succeed with Grazing

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The Farm Consultancy Group

Research and Development in Organic Production Hassleholm
4th March 15

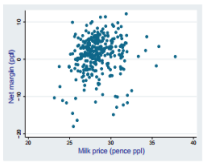
## What Drives Profit ?

a) Milk price

b) Yield per cow

c) Costs of production

Figure 4: Comparison of net margin with milk price

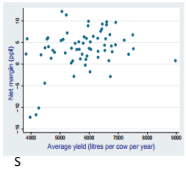



## Research

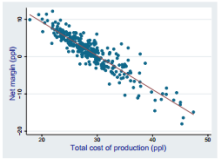
Yield per cow

Costs of production

Figure 7: Comparison of milk yield and net margin in ppl




$R^2$=0.84

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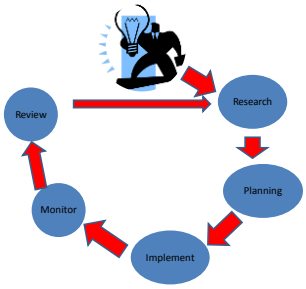
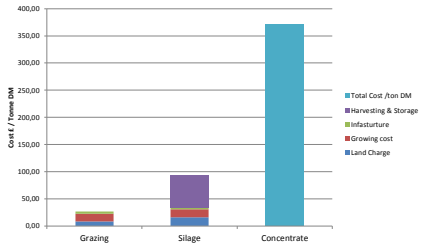
## Managing Change



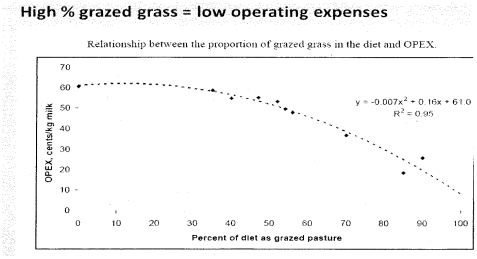

## Relative Costs of Organic Feeds




## Research

Operating profit and grazed grass

**High % grazed grass = low operating expenses**



## The Good Points

It's cheap
The cow does the work
Manure is spread
Nutritious
Reduced power and machinery costs
Good for public perception

## The Not So Good

- Conditions change
- Growth rates vary enormously
- Quality changes as the season progresses
- Grass gets disease
- Cows will reject some grass
- Not suitable for all farms layouts
- Cows need to be robust
- Robotics creates more complexity
- Requires us to change and adapt
- Requires constant management

## Planning Infrastructure

Good infrastructure makes life easy and extends the grazing season

- All paddocks need to be same size
- Not more than 2 **days** grazing per paddock
- Tracks makes access in wet conditions possible
- Water, cows are lazy and milk is 90% water
- Paddock access, more than one access point avoids problems in wet weather

## Infrastructure is everything

## Planning The System


## Planning the Year

**The Basics**

| | |
|---|---|
| Target Average Covers | 2100-2300 Kg DM / Ha of Total Dry Matter |
| Target Residuals | Depending on time of & 2100 Kg TDM year 1600 |
| Target Grazing Cover | 2800-3000 kg DM / Ha TDM |

# Planning

Production
Area of the grazing platform
Growth Rate per day  Kg Dry Matter

N10 =N7*N9*7

**GRAZING BUDGET**

Manor Farm

| | Start | 18-Apr-15 | 25-Apr-15 | 02-May-15 | 09-May-15 | 16-May-15 | 23-May-15 | 30-May-15 | 06-Jun-15 | 13-Jun-15 | 20-Jun-15 | 27-Jun-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Utilization | | 90% | | | | | | | | | | |
| Total Grazing Area (Ha) | 169 | 112 | 112 | 112 | 112 | 114 | 114 | 114 | 114 | 114 | 169 | 169 |
| Total Cutting Area (Ha) | | 57 | 57 | 57 | 57 | 55 | 55 | 55 | 55 | 55 | 0 | |
| Predicted Growth Rate (KgDM/Ha/Day) | | 40 | 45 | 50 | 65 | 75 | 75 | 60 | 50 | 45 | 45 | 40 |
| Total Growth for Week (KgDM) | 0 | 31360 | 35280 | 39200 | 50960 | 59850 | 59850 | 47880 | 39900 | 35910 | 53235 | 47320 |

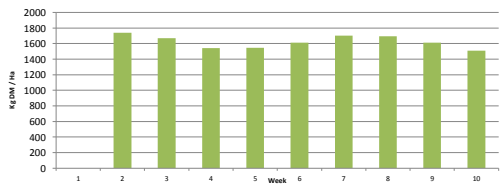
# Planning the year

Cow numbers
Daily grass consumption kg Dry Matter per day

| | 18-Apr-15 | 25-Apr-15 | 02-May-15 | 09-May-15 | 16-May-15 | 23-May-15 | 30-May-15 |
|---|---|---|---|---|---|---|---|
| No. Milking Cows Grazing | 460 | 460 | 460 | 400 | 380 | 380 | 375 |
| No. Dry Cows Grazing | 0 | 0 | 0 | 60 | 80 | 80 | 85 |
| Grazing Stocking Rate (LSU/Ha) | 4.11 | 4.11 | 4.11 | 4.11 | 4.04 | 4.04 | 4.04 |
| | | | | | | | |
| DM Intake/Milking Cow/Day (Kg) | 10 | 12 | 15 | 15 | 15 | 15 | 15 |
| DM Intake/Dry Cow/Day (Kg) | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Total DM Required/Day (Kg) | 5111 | 6133 | 7667 | 7200 | 7044 | 7044 | 7006 |

# Planning The Season

| | 18-Apr-15 | 25-Apr-15 | 02-May-15 | 09-May-15 | 16-May-15 | 23-May-15 | 30-May-15 | 06-Jun-15 | 13-Jun-15 |
|---|---|---|---|---|---|---|---|---|---|
| Total Growth for Week (KgDM) | 31360 | 35280 | 39200 | 50960 | 59850 | 59850 | 47880 | 39900 | 35910 |
| Total DM Requirement/Week (Kg) | 35778 | 42933 | 53667 | 50400 | 49311 | 49311 | 49039 | 49039 | 47717 |
| Balance (kgDM) | -4418 | -7653 | -14467 | 560 | 10539 | 10539 | -1159 | -9139 | -11807 |




# Maintaining Quality

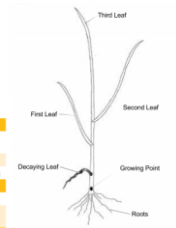
Grass species Ryegrass or Cocksfoot
Stage of Growth  vegetative or reproductive
Ryegrass tillers only have 3 growing leaves
Clover maintains quality  for longer

Pasture Topping

Or

Pre grazing Mowing

Figure 1: Structure of a Ryegrass Tiller




Example 2: Calculating Leaf Appearance Interval and Rotation Length

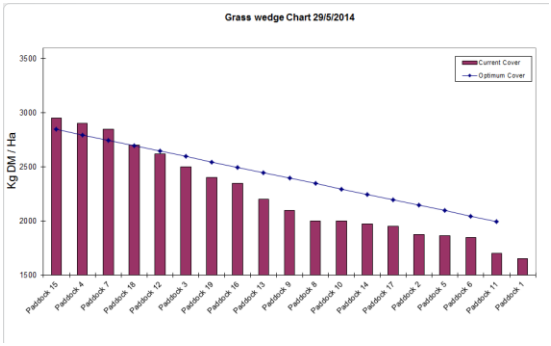
| | | |
|---|---|---|
| **Leaf Appearance Interval** | | |
| A | Average leaf stage in field (**Section 3**) | 2.1 leaves |
| B | Days since pasture last grazed | 16 days |
| C–B ÷ A | Post leaf appearance interval | 7.6 days |
| **Current Rotation Length** | | |
| D | Target pregrazz point | 3 leaves |
| C×D | Rotation length (time taken to regrow) | 22.8 days |
| **Future Rotation Length** | | |
| F | Estimated leaf appearance interval* | 9 days |
| D×F | New target rotation length | 27 days |

# Monitoring Grass Growth


# Rising Plate Meters

Show average cover for the paddock

## Monitoring Grass Growth




## Diverse Swards

Evidence that mix swards are more productive

| | |
|---|---|
| Benefits | Drought Tolerance, Carbon Sequestration |
| | Maintain Quality Longer |
| Grass | Cocksfoot or Timothy based |
| Clovers | White Red and Alsike |
| Legumes | Lucerne Sainfoin Birds Foot Trefoil |
| Herbs | Chicory, Plantain, Yarrow |

## Utilising Diverse Swards

| | |
|---|---|
| Measuring | Plate meters do not work |
| Rotation Length | May be up to 90 days |
| Residuals | May leave much higher residuals |
| Grazing Pressure | Stocking rates kg LW / Ha may be very high |
| | Cattle moved more frequently |