The Trouble with Oats?

Cark Maunsell
Oat Services Ltd
Oat Services Ltd

- Who are we?
- Growing organic oats
- The Markets
- The Role of Research
- Lost opportunity or irrelevant to the organic farmer?
Who Are we

• Organic importers of mainly wheat from Argentina and Canada and oats!

• .... Used to be!
Who Are we

• Manufacturers and Distributors of Ecocert NATURAL Ingredients for use in cosmetics

Colloidal Oat Flour
Oat oil
Oat Peptides
Oat Exfoliants
Oat Beta-glucan
Oat Avenanthramides
Lupin Peptides
Oat Butters
Who Are we

- Manufacturers of bespoke oat blends for the bread industry
Who Are we

Research and Development

Chairman of the Project Management Committee: QUOATS
Issues Facing Organic Oats

• Production
  – Not crop competitive?
  – Environmentally unfriendly
  – Difficult to grow organically

• Consumption
  – Human Food
  – Animal Feed
  – Industrial
Production
Oats Perform well in Second Cereal Rotation

Sheepdrove 2006-07

<table>
<thead>
<tr>
<th>Percentage Yield of 2nd year V 1st</th>
<th>Average Yields (Mt/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husked Oats:</td>
<td>97.58</td>
</tr>
<tr>
<td>Naked Oats:</td>
<td>84.53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1st cereal</th>
<th>2nd cereal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husked Oats</td>
<td>6.89</td>
</tr>
<tr>
<td>Naked Oats</td>
<td>4.38</td>
</tr>
<tr>
<td>Difference</td>
<td>63.49%</td>
</tr>
<tr>
<td></td>
<td>55.00%</td>
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</table>

“We had 2 wheat trials at Sheepdrove in 06/07 and the mean yields of these trial were 4.8t/ha and 4.9t/ha, but it will have been in a different field, so as with comparing 1st and 2nd oats, a direct comparison is difficult!”

Source: Helen Pearce - Organic Research Centre

Results from only one year’s trials should be treated with caution!
“These were both grown as a 1st cereal, after a particularly good white clover ley. We added fertility (organic chicken manure) to half of the plots but this didn’t make a significant difference to the yield – the fertility in the soil from the ley was probably already fairly high.”

“Our main wheat trial at Wakelyns had a mean wheat yield of 9.0t/ha – our highest ever wheat yield at Wakelyns, and although they were actually in the same field as the oats, the oats didn’t have their best ever year – it seems as though the drought affected the oats more than it did the wheat.”

Source: Helen Pearce - Organic Research Centre

**Trial yields are often higher than those achieved commercially**
Production: Organic Credentials

- Oats have a great ability to outcompete weeds,
- Perform well in low fertility situations
- Low input
- pH/soil type tolerant
- Exceptional nutrient scavengers
- Good disease resistance
- UK Bred varieties (IBERS)
Human Food: The Oat Mill

Intake

Pre-cleaning

Storage

Sizing & Grading

Stabilisation

Dehuller 1

Separation 1

Hulls

Broken

Dehuller 2

Separation 2

Dehuller 3

Separation 3

Colour Sorting

Flaking

Steel Cuts

Milling

Bran

Flour

Singles Doubles
The Human Food Market

- Small market
- Very reactive to supply/demand ratios
- UK either an exporter or importer
- High cost when compared to other cereal ingredients
- Lack of provenance
- The ‘free range V organic chicken’ syndrome
- Really suited to high value products
- ‘Volume’ in the hands of the supermarkets
### Animal Feed

#### Comparison of Wheat and Oats

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% As Fed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husked</td>
</tr>
<tr>
<td>Crude protein</td>
<td>11</td>
</tr>
<tr>
<td>Oil (B)</td>
<td>2.3</td>
</tr>
<tr>
<td>Crude fibre</td>
<td>2</td>
</tr>
<tr>
<td>Lysine</td>
<td>0.31</td>
</tr>
<tr>
<td>Methionine</td>
<td>0.17</td>
</tr>
<tr>
<td>Cystine</td>
<td>0.25</td>
</tr>
<tr>
<td>Meth.+Cyst.</td>
<td>0.43</td>
</tr>
<tr>
<td>Threonine</td>
<td>0.31</td>
</tr>
<tr>
<td>Tryptophan</td>
<td>0.13</td>
</tr>
<tr>
<td>Arginine</td>
<td>0.52</td>
</tr>
<tr>
<td>ME MJ/kg</td>
<td>13</td>
</tr>
</tbody>
</table>

Oat protein has a much better amino acid profile than wheat. Basically in poultry diets 10% protein in oats is the equivalent of 12% in wheat. This means that it results in circa 2% less protein's worth of nitrogen going out the backside of birds into the environment when oats are fed rather than wheat.

Dr Cliff Nixey
Organic Oats For Animal Feed

• Volume Market
• Value related to wheat/fat
• Compounders resistance
  – Bin/handling problems
  – Perceived energy values
  – Lack of supply (!)
  – No perceived added value
The Livestock Adviser’s view – EBLEX
(Beef and Sheep)

I use oats as a cereal to balance diets in several commercial goat herds and quite a few beef herds are using oats where they have been grown on that farm.

In the past I have used oats quite heavily for high yielding dairy cows as they are far safer and kinder on the rumen than wheat or barley. However, at the moment I am not using Oats on any cow dairy farms as bushel weights of Oats were looking poor last summer when we buying the current winters feed, although they ended up being good it was too late as other feeds had been bought. As other digestible fibre sources such as soya hulls and beet pulp are now very expensive I expect I will advise use of more oats over this summer.

We do find sourcing oats to buy to be quite difficult at times and the feed trade very rarely use them. They do usually work out as good value for money if it is a good sample and because we can feed them whole to sheep and cattle under 12 months old they do save a processing charge.

I use and advocate using oats in a range of beef and sheep rations.

**Great feed in the right rations and a great feed for rumen stability**

I have very few clients using oats, those that do use in calf rations, and the occasional one in finisher diets used with wheat, but generally quality is low so therefore not giving much energy. I have no clients that use oatfeed, or oat wholecrop

Whole oats / coarsely rolled oats work well in calf / lamb home-mix diets, useful fibre level & high oil content. Also can work in some dairy diets to lift b/fat.

**Oats do not feature in any conventional diets I do now - due to availability and variable quality.**
Oats for Animal Feed

- Quality Protein/ good fat levels
- Value Added Components
- Locally grown
- Good organic credentials
- Quality grain supply
- Naked Oats for monogastrics and husked for ruminants?

“Buying British buying local might also underpin an (organic) resurgence in some areas and with some values chains.”

Anonymous
Oats for Industrial Uses

- Organic market in cosmetics is small but growing
- Competes against NATURAL (The largest sector)
- Products tend to be extremely expensive
- Industry drive towards active natural molecules makes organic certification extremely difficult
- Very small volumes but high value
The Role of Research

• Improved agronomic performance
• Better milling characteristics for the oat miller
• Improved animal feed quality
  – Naked oat/husk oat/thin/husk oats
  – Fat
  – Valued-added Components
• Improved/understood environmental impacts
  – Carbon footprint
  – CO2/Methane issues
Opportunity or Irrelevant

• Oats and the Organic Movement share similar threats and opportunities!
• A well-suited Organic crop to grow with good credentials
• Human Food market is restricted and unlikely to change
• Animal production offers opportunities both for the vertically integrated livestock producer
• ............ and the feed compounding (If willing!)
• Research will create the opportunities!