KWS Product Segments and R&D

- **Sugar beet**
  - €313 mn sales
- **Potatoes**
- **Rape seed**
- **Corn**
  - €572 mn sales
- **Cereals**
  - €93 mn sales

Research & Development
- approx. 300 new varieties per year

Cropping Area in Germany (total)
- Sugar beet 385,000 ha
- Corn 2.5 mn ha
- Rape seed 1.4 mn ha
- Cereals 6.6 mn ha

Klostergut Wiebrechtshausen
- Organic seed production
  - Farming on 433 ha, total surface of the farm 507 ha
  - Around 200 ha organic seed production (cereals and leguminous crops)

<table>
<thead>
<tr>
<th>Crops in 2013</th>
<th>ha</th>
<th>%</th>
<th>Crops in 2013</th>
<th>ha</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter wheat seed production</td>
<td>21</td>
<td>5</td>
<td>Winter pea seed prod.</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Summer wheat seed prod.</td>
<td>13</td>
<td>12</td>
<td>Field bean seed prod.</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Triticale</td>
<td>60</td>
<td>14</td>
<td>Carrots</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Barley seed production</td>
<td>35</td>
<td>8</td>
<td>Maize</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Winter barley seed prod.</td>
<td>14</td>
<td>3</td>
<td>Table Potatoes</td>
<td>41</td>
<td>9</td>
</tr>
<tr>
<td>Winter barley seed prod.</td>
<td>25</td>
<td>6</td>
<td>Red beet</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Wheat straw</td>
<td>93</td>
<td>22</td>
<td>Trial plots</td>
<td>18</td>
<td>2</td>
</tr>
</tbody>
</table>

KWS at a Glance

<table>
<thead>
<tr>
<th></th>
<th>2012/2013</th>
<th>2011/2012</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1,140</td>
<td>986.3</td>
<td>+15</td>
</tr>
<tr>
<td>EBIT</td>
<td>145</td>
<td>140.9</td>
<td>+3</td>
</tr>
<tr>
<td>R&amp;D Expenses</td>
<td>140</td>
<td>126.6</td>
<td>+10</td>
</tr>
<tr>
<td>Staff</td>
<td>4,429</td>
<td>3,851</td>
<td>+15</td>
</tr>
</tbody>
</table>

Continually increasing R&D Budget up to 140 € mn in 2012/2013

The KWS group includes 63 companies

KWS-Activities in Organic Farming

General Information
- For 15 years now, KWS has been active in testing, selection, and breeding of appropriate varieties, and seed production for organic farming
- We are working on all crops:
  - Winter / Summer wheat
  - Winter / Spring barley
  - Winter / Summer rye, esp. hybrid rye
  - Winter triticale
  - Oats
  - Grass peas
  - Maize
  - Winter rapeseed
  - Sugar beet
  - Potatoes (for industrial use only)

Breeding and / or genotype testing for organic farming
- Winter wheat and maize: Selection trials at several locations, nationwide
- All other crops:
  - Early testing of appropriate, promising, new lines and / or VCU- candidates

Klostergut Wiebrechtshausen
- Since 2002 organically farmed by KWS (lease)
- This farm is managed in accordance with the organic principles and guidelines of the EU and the Naturland Association

Wiebrechtshausen stands for:
- The production of organic seeds
- Trial surfaces for official variety trials and own breeding trials
- Testing of modern farm issues

Wiebrechtshausen is a trial site for:
- Research cooperations with universities (e.g. Hohenheim and Göttingen)
- Production trials and issues, e.g. repellents against bird damages, sulfurous fertilization, intercropping, weed management
- Cropping trials with other cereals breeders
- Official variety trials / VCU-trials (agricultural chamber of Lower Saxony)
KWS-Activities in Organic Farming

Our trade channels

Group a) Own seed production done by KWS
- Organically farmed surfaces in Austria (maize) and Italy (sugar beet)
- Crops: Maize and sugar beet
- KWS sold to the retail market

KWS-breeding → KWS seed production → Retailer → Farmer

Group b) Basic seed and production under license by independent commercial seed producers (e.g., ÖkoKorn-Nord, Naturland)
- Organically farmed surfaces in Germany
- Crops: Wheat, barley, triticale, rye, oats, peas, potatoes (industrial use)
- License fees paid to KWS

KWS-breeding → Seed production organizations → Retailer → Farmer

KWS is a breeding company and does not sell seeds directly to farmers.
- No direct influence on the seed trade and seed availability.
- The retailers must keep and continuously update the seed database.

Challenges for Organic Seed Production

What must be taken into account, from our point of view

- The number of varieties offered to the farmers may not decrease.
- The varieties must be considered regarding their performance in organic farming (yield, quality, resistance against diseases).
- The quality criteria for organic seeds must be standardized (threshold values for diseases like Tilletia caries, standardized laboratory methods and analyses).
- Seed database / organicXseeds
- Development and the testing of new varieties
  - In trials (e.g., VCG-tests), the latest, new genotypes are used – very often, there aren't organic seeds available.

What counts for organic farmers?
- They must have a broad range of varieties for all crops available.
- The demand for varieties must be satisfied.
- Seed database / organicXseeds database: Seed lots which do not meet the quality requirements, must be eliminated in the database by the trade.

What counts for organic seed production organisations?
- It must be possible to satisfy the demand for new varieties short-term.

What counts for breeding companies and the research?
- Untreated seeds from conventional seed productions must stay admitted for the testing of the latest varieties
- Breeding companies must be informed, which quantities for which varieties are deregulated
- Well-kept, continuously updated seed databases

Thank you for your attention