Cultivation systems of hybrid rye and crop rotation

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Product Manager Hybrid Rye
USA and Canada
Cultivation system - some factors to consider

- Till or no till
- Timing
- Climate
- Machinery
- Residue management
- Soil type
- Management capacity
- Rotation
- Objectives market
- Storage capacity

... and many more
Seeding time and rate

Establishment the most important
Cultivation system – direct drilling/planting

Probably the most used technology – but not always successful!
- When no breakdown of residue from previous crop
- This is especially when using low seeding rates.
Manage plant residue - canola

Poor establishment

Good establishment
Manage plant residue - soybean
Spring – after soybean
Stubble/residue management
Reduced tillage before planting

Require early planting to have a reasonable plant cover before the winter
Late established in October

Erosion

No stubble to hold the snow – frost burn
Established first half of Sep – Minnesota
Seeding must be done accurately at 0.8 inch. Establisment mistakes are irreversible!

Photo was taken on 30.10.2011. Sowing date 18.09.2011. All plants come from the same localization. Plants on the left were sown at the depth of 0.8 inch – proper development. Plants on the right were sown at the depth of 2 inch: low root mass, weakened development, very long intermediate spreading node – inappropriate development.
Rotation

- All pulses
- Canola
- Flax
- Potatoes
- Sugar beet
- Oat

Prefered to establish hybrid rye after these crops

- Grass – pasture or for seed production
- Spring wheat and barley
- Winter wheat (if for feed)

Establishment can be an issue
Volunteers can be an issue if planting hybrid rye after cereals

- Corn
- Rye – hybrid rye

Risk for scab
Ergot risk
Rotation
We need to bring chemical companies on board to make sure new herbicides will be available for hybrid rye.
USA – list of products

Aim (carfentrazone)
Buctril (bromoxynil)
Bronate (bromoxynil & MCPA)
Huskie (bromoxynil & pyrasulfatol)

Starane flex (florasulam & fluroxypyr)

MCPA
2-4-D
Fertilization strategy

Autumn
50-100% of PK (total need 20/50 lb/acre)
20 – 30 lb N/acre late planting

Total N application = expected yield in Bushels x 1.12(1.2) – N-min (N available in soil)

Finalize N/acre
rest PK
25 lb Sulphur

Liquid manure until
ST 32

March
April
May
Nitrogen
Phosphorus
Potassium
Sulfur
Calcium
Magnesium
Iron
Manganese
Boron
Copper
Zinc
Molybdenum

4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0

Acidic Neutral Alkaline
Fungicide strategy – if needed!

- No spraying or irrigation in flowering period

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<thead>
<tr>
<th>EC</th>
<th>April</th>
<th>May</th>
<th>Jun</th>
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Growregulation strategy – if needed!

1 application

2 application

Do not spray on stressed plant. Product to be decided by region
Drilltine

Increased management requires tremlines!

Make the tracks wide enough

Remember to establish the tracks
Thanks

Questions
Irrigation strategy – if needed (for grain production)

1 elongation

2 elongation

Grain filling

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herbicides in hybrid rye, active ingredients and application periods

<table>
<thead>
<tr>
<th>Product</th>
<th>Ingredients</th>
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<tbody>
<tr>
<td>Alliance</td>
<td>Diflufenican+Metsulfuron</td>
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<tr>
<td>Ariane C</td>
<td>Clopyralid+Florasulam+Fluroxypyr</td>
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<tr>
<td>Basagran DP</td>
<td>Bentazon+Dichlorprop-P</td>
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<td>Beflex</td>
<td>Beflubutamid</td>
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<tr>
<td>Broadway</td>
<td>Florasulam+Pyrozulam</td>
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<tr>
<td>Carmina 640</td>
<td>Chlortoluron+Diflufenican</td>
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<tr>
<td>Concert</td>
<td>Metsulfuron+Thifensulfuron</td>
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<tr>
<td>Dirigent SX</td>
<td>Metsulfuron+Tribenuron</td>
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<tr>
<td>Duanti</td>
<td>Clopyralid+Fluroxypyr+MCPA</td>
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<tr>
<td>Duplosan DP</td>
<td>Dichlorprop</td>
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<tr>
<td>Falkon</td>
<td>Diflufenican+Penoxsulam</td>
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<tr>
<td>Herbaflex</td>
<td>Beflubtamid</td>
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<tr>
<td>Lentipur 700</td>
<td>Chlortoluron</td>
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<tr>
<td>Lexus</td>
<td>Flupyrsofuron</td>
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<tr>
<td>Primus</td>
<td>Florasulam</td>
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<tr>
<td>Primus Perfekt</td>
<td>Florasulam+Clopyralid</td>
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<tr>
<td>Starane XL</td>
<td>Florasulam+Fluroxypyr</td>
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<tr>
<td>Stomp Aqua</td>
<td>Pendimethalin</td>
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<tr>
<td>Trinity</td>
<td>Chlortoluron+Diflufenican+Pendimethalin</td>
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**Normal Risk**
- Spring or fall growth stage

**Medium Risk**
- Spring or fall growth stage

**High Risk**
- Spring or fall growth stage
1,2 l/ha Falkon + 0,08 l/ha Primus

untreated
treated
1,5 l/ha Traxos (dosage up to 1,5 time higher)
The use of growth regulators depends on weather conditions and growth conditions.

- dry and hot: reduce the application rate, or no application
- good growth conditions: normal application rate and maybe two times

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<thead>
<tr>
<th>Growth Regulator</th>
<th>Plants</th>
<th>Application Rate/ha</th>
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<tbody>
<tr>
<td>CCC 720</td>
<td>Chlormequat</td>
<td>DC 29 - 31 1 ltr/ha</td>
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<tr>
<td>Moddus</td>
<td>Trinexapac</td>
<td>DC 31 - 39 0,4 ltr/ha</td>
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<tr>
<td>Cerone/Camposan Extra</td>
<td>Ethephon</td>
<td>DC 37 - 49 0,7 ltr/ha</td>
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The application rates are for first application and second or only this application.

- second or only this application 0,4 ltr Moddus + 1,0 ltr CCC, "emergency brake", if something before didn't work.
Had to cancel their trip to the conference as they had to stay home to harvest their hybrid rye.