Extruder Output of High Sugar Pellets

Purpose: Test the effects of processing aids on machine output and product quality.

Equipment: Extru-Tech E-525
Screw Speed: 300 RPM

Processing Aids: Nu-RICE® and GMS

Formulation:
- Sugar 50%
- Starch 50%
- Moisture 12%

Use Rates / Output

<table>
<thead>
<tr>
<th>Sample</th>
<th>Use Rate</th>
<th>Output</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0</td>
<td>600 kg/hr</td>
<td>Sticky, difficult to process, loss in shape.</td>
</tr>
<tr>
<td>GMS</td>
<td>0.5%</td>
<td>800 kg/hr</td>
<td>Reduced stickiness, improved shape, increased output.</td>
</tr>
<tr>
<td>Nu-RICE</td>
<td>0.5%</td>
<td>850 kg/hr</td>
<td>Reduced stickiness, improved shape, maximum increase in output.</td>
</tr>
</tbody>
</table>

Observations: The production of high sugar pellets requires a processing aid to make a product that is of acceptable quality. The surface appearance, the stickiness and definition of shape was improved by using a processing aid. The Nu-RICE® increased output significantly over no processing aid and increased output over the GMS.

Conclusion: A processing aid is required to make this high sugar pellet with this formulation. The Nu-RICE® is the best choice based on this trial, because of stickiness, shape and output.

Cost Savings: The Nu-RICE® allowed the manufacturer to produce 251/2 hours of output in a 24 hour day. At $400 / hour on production costs, Nu-RICE® created a savings of $25 per hour, from increased output alone, plus the improvement in quality. The savings pays for the cost of the ingredient.

Increase output by 6% with Nu-RICE®

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