

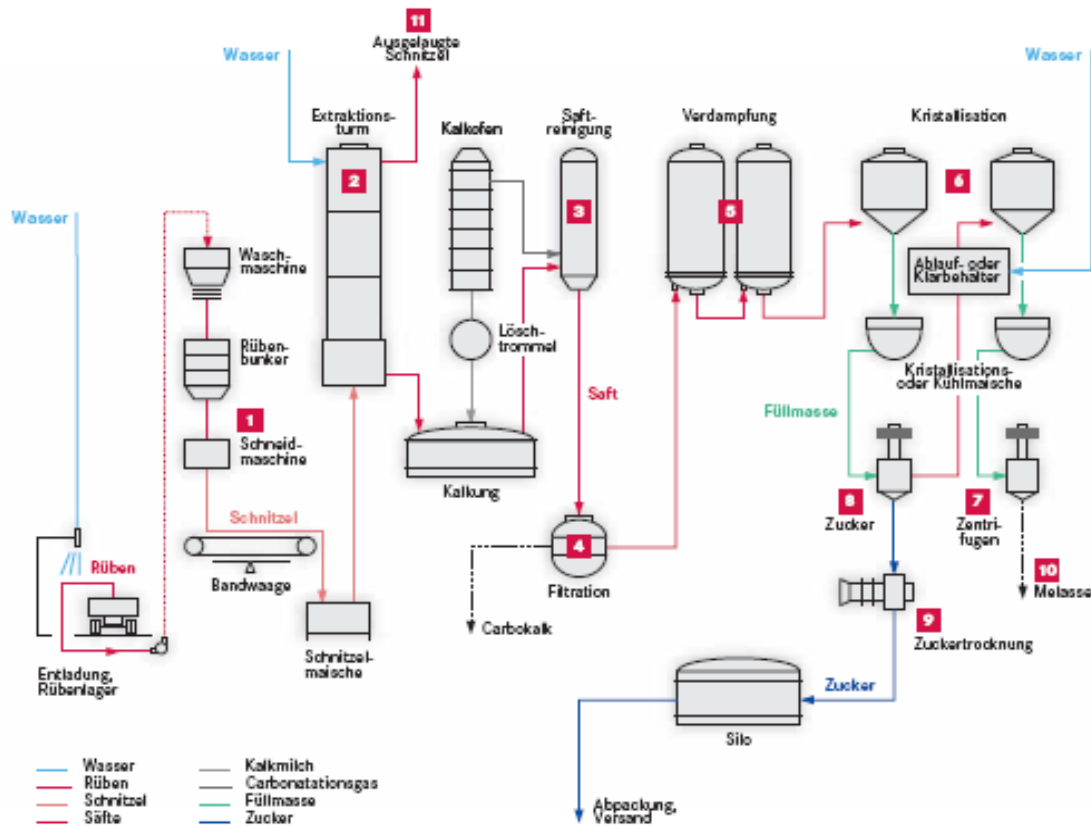


**PRODUCT DATA SHEET**  
**Data Sheet for Individual Feedstuff on the**  
**Positive List**  
**Sugar Beet Dry Pellets for Feeding N005**

Sheet: 1 of 2  
Version 03, 02.08.2011  
Title **PDB Pellets N005 en**

Producer	AGRANA ZUCKER GmbH Josef-Reither-Strasse 21 – 23, A-3430 Tulln																																																									
Feedstuff / Product Group	<b>Sugar Beet Dry Pellets (4.10.08 in Positive List)</b>																																																									
Product Description	By-product accumulated from the production of crude juice and made of dried pressed sugar beet pulp. Odour: characteristic, free of foreign odours																																																									
Information on production process	<ol style="list-style-type: none"> <li>1. Advice from beet cultivation to harvest</li> <li>2. Beet acceptance and storage</li> <li>3. Beet preparation: Beet washhouse to beet cutting machines</li> <li>4. Extraction: Heating to approx. 70 ° C; Removal of sugar with hot water Counter current process) → extracted wet pulp.</li> <li>5. Pressing (mechanical dewatering) of the wet pulp in double spindle presses</li> <li>6. Mixing of pressed pulp with pelletizing additives</li> <li>7. Thermal dewatering in drying drums</li> <li>8. Pellitising of dried pulp with pellet presses</li> </ol> see flowchart attachment 1																																																									
Information on composition	Bulk density: approx. 600 g per litre dry matter: min. 86 Weight % total sugar: min. 5 %  The specified results are non-binding guide values and are subject to raw material fluctuations																																																									
Analysis results	<table border="0"> <tr><td>H<sub>2</sub>O</td><td>approx.</td><td>12,00 %</td></tr> <tr><td>Total sugar as saccharose</td><td>approx.</td><td>6,50 %</td></tr> <tr><td>HCL insoluble ash:</td><td>approx.</td><td>1,60 %</td></tr> <tr><td>Crude ash</td><td>approx.</td><td>5,00 %</td></tr> <tr><td>Crude fibre</td><td>approx.</td><td>16,30 %</td></tr> <tr><td>Crude fat</td><td></td><td>&lt; 0,20 %</td></tr> <tr><td>Crude protein</td><td>approx.</td><td>7,50 %</td></tr> <tr><td>Calcium</td><td>approx.</td><td>0,80 %</td></tr> <tr><td>Potassium</td><td>approx.</td><td>0,70 %</td></tr> <tr><td>Phosphor</td><td>approx.</td><td>0,10 %</td></tr> <tr><td>Magnesium</td><td>approx.</td><td>0,20 %</td></tr> <tr><td>Sodium</td><td>approx.</td><td>0,20 %</td></tr> <tr><td>Iron</td><td>approx.</td><td>500 mg/kg</td></tr> <tr><td>Copper</td><td>approx.</td><td>04 mg/kg</td></tr> <tr><td>Manganese</td><td>approx.</td><td>60 mg/kg</td></tr> <tr><td>Zinc</td><td>approx.</td><td>15 mg/kg</td></tr> <tr><td>N-free extractives</td><td>approx.</td><td>60,00 %</td></tr> <tr><td>Convertible energy (cattle)</td><td>approx.</td><td>11 MJ/kg</td></tr> <tr><td>Net-energy-lactation (VO)</td><td>approx.</td><td>6,50 MJ/kg</td></tr> </table>	H <sub>2</sub> O	approx.	12,00 %	Total sugar as saccharose	approx.	6,50 %	HCL insoluble ash:	approx.	1,60 %	Crude ash	approx.	5,00 %	Crude fibre	approx.	16,30 %	Crude fat		< 0,20 %	Crude protein	approx.	7,50 %	Calcium	approx.	0,80 %	Potassium	approx.	0,70 %	Phosphor	approx.	0,10 %	Magnesium	approx.	0,20 %	Sodium	approx.	0,20 %	Iron	approx.	500 mg/kg	Copper	approx.	04 mg/kg	Manganese	approx.	60 mg/kg	Zinc	approx.	15 mg/kg	N-free extractives	approx.	60,00 %	Convertible energy (cattle)	approx.	11 MJ/kg	Net-energy-lactation (VO)	approx.	6,50 MJ/kg
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Unwanted substances within the risk oriented self control	The compliance with applicable critical values according to Feedstuff regulation 2010 as last amended and EU guidelines 2002/32/EG as last amended is controlled during a campaign analysis.																																																									
Information on storage life, storage and transport	When stored cool and dry ( max. 75% rel. humidity) – at least 12 months Delivery form: in bulk																																																									
Field of use / utilisation	For all ruminants; conditionally for horses and breeding sows. In the case of horses, sugar beet dry pellets must be soaked with plenty of water prior to feeding.																																																									
Note on safety	Sugar beet dry pellets are biologically degradable and require no special safety precautions for handling or transport																																																									
Customs tariff number: 2303 2010 The article complies with the feedstuff regulation 2010, BGBl. II No. 93/00 as last amended All data and instructions are based on our analyses and are to be considered general recommendations and suggestions. We also encourage you to test the suitability of products yourself.																																																										
<b>Sales and distribution: AGRANA Stärke GmbH</b> A-1220 Vienna, Donau-City-Straße 9, Tel. +43-1-21177 – ext. 12093, Fax +43-1-21177 – ext. 12091 Domicile: Vienna, commercial register court: Commercial Court Vienna, FN 252477s – UID: ATU 58198337																																																										

## THE STATIONS OF SUGAR PRODUCTION



Flow chart text:

The stations of sugar production:

After being thoroughly washed the sugar beets are brought from interim storage to be processed.

### 1. Beet Slicer

Cutting machines cut the beets into stripped formed "slices" that have a sugar content of between 16 and 20%.

### 2. Juice production

The sugar is extracted from the slices with hot water (approx. 70° Celsius) in counter current – the slices are transported against the water flow from bottom to top. Crude juice is the result. It contains approx. 98% of the sugar contained in the beets as well as organic and inorganic substances from the beets (so-called non-sugar substances).

### 3. Juice purification

The non-sugar substances in the crude juice are bound and precipitated through the natural substances lime and carbon dioxide gas which are produced in our own lime kiln.

### 4. Filtration

The flocculated insoluble non-sugar substances and the lime are filtered out in filter equipment. The filtrate is known as thin juice, the filter residue as carbo-lime. These are valuable soil improvers and can be re-applied to fields.

### 5. Juice thickening

The thin juice is thickened in multi stage vaporization. A thick juice is produced. The large amount of energy required for sugar production is which is covered by the operation of our own power plant. The steam that is produced in high pressure boilers serves to produce our own electricity in turbine generators. The turbine exhaust steam is fed as process steam (power-heat coupler) into the heating of the vaporization station.

### 6. Crystallization

The thick juice is again thickened in boilers under vacuum. The crystallization is activated by the addition of finely ground sugar. By further thickening the crystals reach the required corn size.

### 7. Centrifugation

The sugar crystals are separated from the syrup by centrifugation. The separated syrup is subject to a further two crystallization steps.

### 8. Sugar

The so-called crystalline sugar appears through light refraction in the crystals to be white. White sugar has a saccharose content of at least 99.7%. The rest is de facto humidity.

### 9. Sugar drying

White sugar is dried in an air stream, cooled and stored in silos. In many different forms and in household or industrial quantities sugar then reaches the consumer as an important foodstuff.

### 10. Molasses

The separated syrup of the last crystallization steps is called molasses. The molasses contains the sugar which cannot be crystallized (6 to 9% of the sugar from the beet) and the delicious non-sugar substances from the beet. It forms a valuable raw material for the baking supply and feedstuff industries and for the production of alcohol.

### 11. Sugar beet pulp

After mechanical pressing and the addition of molasses the pressed pulp that were washed out separately are dried in drums and then pelletized (pressed) and sold as feedstuff.