
NBR
Nordic Beet Research

SKÖRDE OCH LAGRING AV SOCKERBETOR MODEL

William English, NBR Nordic Beet Research

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1 I FÄLTET

1.1 SEN TILLVÄXT - POL

$$ST_P = \begin{cases} 0.010 & \text{if date} < 15 \text{ Nov} \\ 0.005 & \text{if date} \geq 15 \text{ Nov and} \leq 30 \text{ Nov} \\ 0.000 & \text{if date} > 30 \text{ Nov} \end{cases} \quad (1)$$

Where:

ST = sen tillväxt [%-enheter per dygnt]
p = Pol

1.1.1 Källa

An educated guess

1.1.2 Planerade förbättringar

Build out a proper, weather depended growth model, that uses live data from the current year. This will probably follow the work done by the BBRO.

1.2 SEN TILLVÄXT - REN BETOR

$$ST_{RB} = 1.5735e^{-06} \times D_{10S}^2 - 2.8177e^{-04} \times D_{10S} + 0.01244 \quad (2)$$
$$\times STV \quad (3)$$

Where:

ST = sen tillväxt [% per dygnt]
RB = ren betor
D_{10S} = days after 10 September
STV = Sen tillväxt potential, relativt till median (0.5, 1.25)

1.2.1 Planerade förbättringar

Build out a proper, weather depended growth model, that uses live data from the current year. This will probably follow the work done by the BBRO.

2 UPPTAGNING

2.1 SPILL

$$\text{Spill} = 3.804e^{-4} \times RSB^2 + 4.508e^{-2} \times RSB + 0.25 \tag{4}$$

Where:

Spill = [t/ha] RSB = rotspetsbrot [% > 2cm]

2.1.1 Källa

BBRO med multiplicationfaktor (x2) enligt erfarenhet inon industri.

3 LAGRING

3.1 STUKATEMPERATURMODELL

3.1.1 Källa

Guess work

3.1.2 Planerade förbättringar

We are doing a lot of work on this component. The ultimate aim is to have a model that will link ambient conditions (temperature, humidity, air speed) to the clamp conditions across the entire profile.

4 LEVERANS

4.1 KOSTNADER

Kostand per ton orenheter (approxiamte)*

$$\frac{dSEK_{orenheter}}{dkm} = \begin{cases} 0,841 & \text{km} < 145 \\ 0,482 & \text{km} \geq 145 \end{cases} \tag{5}$$

Where:

Orenheter är ton
km = kilometer
Baskostnad (1km) = 23,74SEK/tn

4.1.1 Källa

*Data is taken from the 2020 price model. The above equations are only approximations. These approximations are used in most of the model.

Actual cost data is taken from the Nordic Sugar ”Transportkostand för orenheter” table. This data is presented in the Leveranskostnader table in the Leverans tab.

5 PRODUCTION OCH BETALNING

5.1 RENHET

$$\frac{dRenhet}{dD} = \begin{cases} 0 & \text{D} < 20 \\ -0,0022 * D + 0,0438 & \text{D} \geq 20 \end{cases} \tag{6}$$

Where:

Renhet är procent enheter
D = day after harvest
$R^2 = 0,9188$

5.1.1 Källa

Agrilog, Sweden, 2020. All varieties.

5.1.2 Planerade förbättringar

Link to variety. The model is currently biased towards varieties that probably lose a lot of cleanness late in a long-term storage campaign.