In-silico model of lifetime trajectories of dairy cows

Commonly used acronym: INSILICOW

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Organisation

Name of the organisation Katholieke Universiteit Leuven (KUL)
Department Department of Biosystems
Country Belgium
Geographical Area Flemish Region

Name of the organisation Institut national de la recherche agronomique (INRAE)
Department MoSAR
Country France

SCOPE OF THE METHOD

<table>
<thead>
<tr>
<th>The Method relates to</th>
<th>Animal health</th>
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</thead>
<tbody>
<tr>
<td>The Method is situated in</td>
<td>Basic Research, Translational - Applied Research</td>
</tr>
<tr>
<td>Type of method</td>
<td>In silico</td>
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</tbody>
</table>

DESCRIPTION

Method keywords

- dairy cow
- white-box model
- lifetime trajectory
- reproduction
- milk yield
- modelling
simulation

Scientific area keywords
Animal science
statistical modelling

Method description
This white-box model uses energy partitioning throughout the lifetime of dairy animals (growth, lactation, gestation, ...) to simulate reproduction performance, lifetime length, production performance etc. The method is developed by dr. Olivier Martin at INRAE, MoSAR, Paris.

Lab equipment
You need the model codes to work with them.

Method status
History of use
Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages
Replaces costly animal trials,
Accurate outcomes if you put the right parameters in.

Challenges
Parameter choice and identifiability

Modifications
Further extensions and improvements are in constant course of development

Future & Other applications
Simulation studies in dairy cows, for example for studying resilience and perturbations in milk yield, or reproduction progesterone profiles
References


Links

Validation of a novel milk progesterone-based tool to monitor luteolysis in dai...