

# Predicta Milk Forecast

**Dr. Joachim Lübbo Kleen, Subject Matter Expert at DDW**

Dip. ECBHM, Fachtierarzt für Rinder  
EBVS® accredited European Veterinary Specialist in Bovine Health Management



## What is the Predicta Milk Forecast?

The Predicta Milk Forecast models the expected milk production of individual animals and the herd. The predictions are based on the actual data of individual animals, the respective herd, and thousands of other lactations in DDW's database. Therefore, Predicta-Forecasts are based on real figures, not mere "standard" lactation models. The algorithm of the Milk Forecast predominately uses milk-meter data – In order to get an accurate prediction, please make sure that the milk meter device in the milking system is working correctly and accurately – wrong measurements will necessarily lead to faulty predictions!

The Predicta Milk Forecast allows to assess the future production of individual animals and gauges the production of a herd in the coming months. The Milk Forecast is a tool to identify high potential animals and helps in decision-making: You can assess the absolute and the relative potential of each animal, i.e., you will get an indication how an individual animal is going to perform compared to its herdmates. The prediction furthermore aids in planning the output of a dairy farm as it indicates what prediction is to be expected from the herd as it currently is structured.

## How does the Predicta Milk Forecast work?

The Predicta Milk Forecast has two levels of operation: The *individual animal forecast*, predicting the milk production over the coming months of any milking cow in the herd. The bulk milk forecast aggregates these predictions and shows the expected total production of the herd.

## The individual animal prediction

### What does the Individual Animal Prediction show?

Upon entering the Predicta Milk Forecast, you will first be led to the Individual Animal Prediction. Based on past data (shown as grey dots) you see the future production displayed as an individual lactation curve. You can choose the animal to be displayed and whether an absolute production or cumulative view is desired.

## How can I assess the Individual Animal Prediction?

Below the lactation graph, you find information on the respective animal. This information helps you to correctly gauge the animal's potential. Displayed is the lactation group (lactation 1, lactation 2 or older animals with 3 or more lactations) and the expected production for the next 365 days and the expected production per day. Please note that non-productive days (dry period) are not computed into the daily production. Moreover you see an indication of "expected performance" of the animal.

### What does the "expected performance" indicate?

The "expected performance" indicates the animal's relative performance in relation to her herdmates for the next 365 days. Comparable to relative breeding values, the average performance is set =100, higher scores indicating an expected production above average. For comparison, the relative performance is shown twofold:

- The "expected performance within group" compares animals in the same lactation group against each other, i.e., only first lactation with first lactation animals.
- The "expected performance against all" places the animal in a ranking against all other animals in the herd, irrespective of lactation number.

It should be noted that the actual prediction period is decisive – Only milk yield over the next 365 days will be predicted. Therefore, animals with a full dry period in the prediction period may be ranked lower than animals lactating throughout that time even if they have a higher productivity per day. For a more detailed analysis of individual animals, it is recommended to use the analysis toolbox.

## The analysis toolbox

The tools to intensively assess future production are accessible via the analysis-button. This section contains three different modules:

**Future Milk Production Timeline.** In this first section there is the possibility to display the expected milk production in various ways.

This timeline is useful when the user is interested to assess actual daily production or total milk yield in the nearer or wider future – It allows for a rapid assessment of what production to expect from which group of animals. The graph shows the actual production for a time horizon that may be chosen individually – Just adapt the bar to the bottom of the graph to display a prediction for up to 1 year. The drop-down menus to the top allow to choose all animals or certain lactation groups only (“All parities” or e.g., “Parity 2”); to choose from an absolute milk production per animal and day or a cumulative display; and finally, to show an aggregate of all animals selected for or even the individual animals’ lactation curves. The latter option is especially interesting as it allows for a quick, visual identification of animals with noticeable individual production: Just by pointing at the graph the ID of the respective animal will be displayed. All data may be downloaded for further processing, e.g., in a planning chart from the dairy processing plant.

**Expected 305 days curves for current and next lactations.** In this tool the productivity and shape of complete lactations may be assessed. It is a useful to grasp the actual lactation curve and how the productivity and persistence of lactations is going to develop. Again, the chart may be adapted by a drop-down menu for certain parities or all animals; absolute or cumulative figures; an aggregate of individual lactations or individual lactation curves themselves. A herd average will always be shown for comparison. The two areas show the current lactation curves (left) – It gives therefore an overview on the present production characteristics – The “current lactation curves” therefore includes and combines historical and prediction data to give a complete overview on how current lactation do look like. The right graph is prediction only: The “next lactation” curves give an indication on how the following lactations are going to be. Please note that the nomenclature of animals does not change, i.e., animals currently in their first lactation will still be displayed as “first lactation”, although actually their second lactation is shown.

**Animal comparison.** In order to compare individual animals against each other or against the herd as a whole, the “Animal Comparison” section allows you to display animal production in various ways. Either two individual animals may be selected on basis of their ID or one animal may be selected and can be compared against the herd as a whole or an animal group based on parity. There are three types of comparison that can be made: Either based on the time horizon – Here, the actual production for an individually selected time horizon into the future (up to

365 days) will be displayed. The information is presented graphically and in a small table giving the relevant production data. Alternatively, the comparison can be made on basis of “current” or “next” lactation and will present the expected lactation curve for the animals selected. The animal comparison is especially useful when a rapid assessment of certain animals potential is needed or a decision is needed which animals to keep. It may also prove useful when assessing when to inseminate animals: The farmer may consider later inseminating animals with a high persistence.

## The Bulk Milk Prediction

### How does the bulk milk prediction work?

The prediction of a farm’s total production combines Predicta’s forecasts: The individual animal milk production and the Herd Inventory Forecast. The bulk milk prediction is based on the individual animals’ production, the inventory forecast describes which animal will be lactating when. Therefore, the Bulk Milk forecast follows a “bottom-up-approach” and uses data with a high granularity.

### What is the purpose of the Bulk Milk Prediction?

The bulk prediction allows a precise view into a herd’s future prediction: For up to 9 months the user can assess the likely production, to quickly identify ups and downs of total milk yield and gauge the need for further planning the herd structure, e.g., by using the Predicta Herd Inventory Forecast.

### What does the Bulk Prediction show?

The Bulk Milk Prediction is easily accessed via the button on the left side of Predicta’s Milk Forecast. It shows a simple graph that summarizes total herd production and the course of milk solids, expressed as percentage. Again, the graph is interactive and detailed information can be retrieved by moving the mouse over the graph: The date and its production characteristics will be shown.

For a more detailed analysis there is a table below the graph which may also be downloaded. The table gives all relevant production data in the prediction period. All information is expressed in relative and absolute figures, both for the month and cumulative over the period predicted. The average production per day and animal is shown as well.