

"Afifarm Activity session [REDACTED]"

This data comes from Afi leg tags AfiAct II.

All cows have an identification for the farm records, most of the times that's the ID you'll see, but occasionally in some dataset there are other ID's which could correspond to the number of the transponder or device used to record the data and could appear like tag number or other name, I'll specified when this happens.

In this data set you'll find the raw activity data registered by the AfiAct II podometer and it's divided by session. These sessions are the milking times, so when the cows come through the parlor to be milked there is a reader that download all the data accumulated since the previous session. During the dates showed in this data set, the farm has 3 milking sessions a day.

Session 1: 5:30 am to ~10:30

Session 2: 1:30 pm to ~ 6:30

Session 3: 9:30 pm to ~ 1:30

AnimalId	Date	Session	Activity	ActivityAverage	ActivityDeviation
1	2/20/2018	0	108	115	-6
1	2/21/2018	0	116	109	6

Animalid: is the cow ID

Date: exact date when the data was recorded.

Session: is the number of the session, in this data set S1 = 0; S2 =1 and S3 =3

Activity is the raw activity and is expressed in arbitrary units.

Activity average: is the activity average from the previous week sessions (last 7 days)

Activity Deviation: is the % of deviation =

$(\text{daily activity} - \text{average activity}) / \text{average activity}$

"AfiFarm Daily data [REDACTED]"

This data is a combination of two sensors, the AfiAct II (from above) and the sensors fitted in the milk line of the parlor the **AfiLab** (see this 50 sec animation please <https://vimeo.com/34369604>)



Animal_ID

Group_ID

Date

Dry_Days

Days_in_Milk

Is_Milked

Lactation_Num

Yield (gr)

Conductivity

Fat (%)

Protein (%)

Lactose (%)

Blood (%)

SCC (*1000/ml)

Activity (steps/hour)

RestTime (minutes)

RestBout (#)

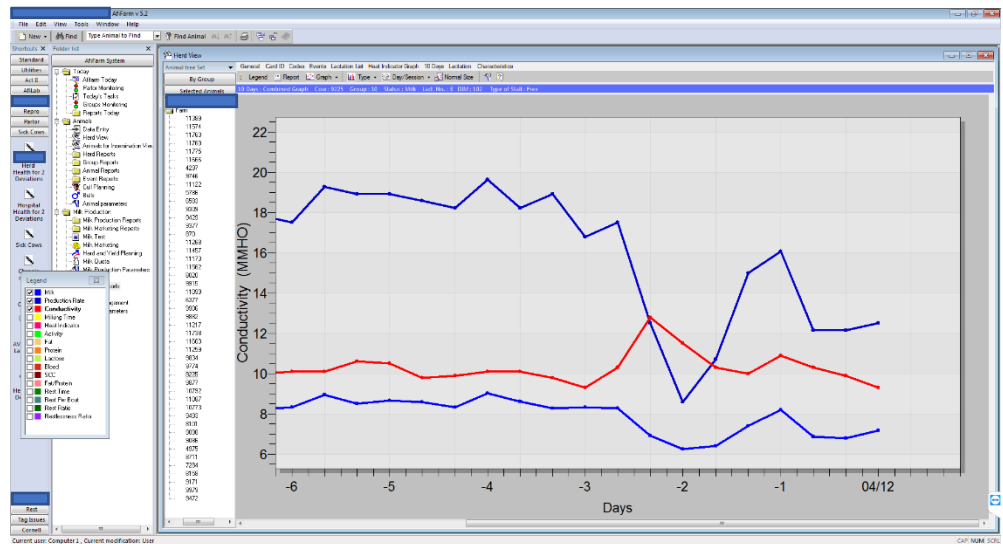
ProdRate (gr/hour)

RestRatio (%)

RestRestlessness

RestPerBout (minutes)

ActivityDeviation (%)



The electrical conductivity of the milk is an indirect method to detect mastitis, usually is under 10 mmHO, when a mastitis process happens usually increase. The value corresponds to the highest value registered in the session

Proportion of butter fat in the milk yield for that day. Weighted average

Proportion of protein in the milk yield for that day. Weighted average

Proportion of lactose in the milk yield for that day. Weighted average

This is still under a validation process, but as it says proportion of blood detected

Quantity of somatic cells, an indicative of mastitis.

Count of daily steps divided by hour. **It reports the highest value for one session**

Total minutes spend lying down, summarize the 3 sessions of the day

Number of times the cow lay down

Milk yield divided time between milkings. Daily yield/24 hrs

Proportion of the 24 hrs the cow was resting

It's calculated like "Activity-resting time" but don't take it in count for now, still in process

Average time per laying bout

Proportion of total activity

Conductivity in mmHO = red (scale set at conductivity, Y axis)

Milk= bright blue

Production rate= dark blue

“AfiFarm Milk data session Walnut Ridge 20180813”

Data is the same as the previous document for milk but, the data now is by milking session. The only difference with the previous one is the “AMT (seconds)” which is the time during the milking session were the cow was connected to the milking unit and milk collected.

Session 1= 0: 5:30 am to ~10:30

Session 2= 1: 1:30 pm to ~ 6:30

Session 3= 2: 9:30 pm to ~ 1:30

“AfiFarm Rest data session Walnut Ridge 20180820”

All the activity data, divided now by session.