**Reviewer #2:** The authors need to stress for the very short lactation groups (which are for the most part the very short gestation group) that these variables are fully predicted....data/models are interesting--and of some value--but the value needs to fully tranparent. For example: lines 171/172 'The results showed that primiparous cows with a very short GL produced less M305 and peak yield'...needs to be qualified--as the very short gestation=very short lactation; only 6 of 16 (1/3) had a 305 d lactation, and so M305, and other parameters were predicted to come to your conclusions.

**Response:**

**MHO -> WE CAN STRESS THIS TO BE TRANSPARANT**

Secondly, the authors need to indicate the number of cows in each of the gestation length categories presented in Table 2, until these data are made available one cannot judge the validity of the conclusions made on differences. The emphasis again on these data is that these variables are just predicted from the model used (Milkbot).

**Response:**

**MHO -> THIS IS DONE**

**Reviewer #3:** This study deals with the association between gestation length and production curve of dairy cows, including milk yield over 305 days of lactation, time to rich peak lactation, slope to peak lactation and lactation decay slope.

Comment: Although it seems that the statistical analysis was conducted properly there are some parameters that should have been considered when analyzing the data in order to avoid confounding effect of the cow’s physiological and genetic features. In this regards- the overall milk production, as well as the lactation curve shape can be significantly affected by cows breeds, nutrition (confined vs grazing), and most of all – number of milking session per day. I didn’t see if the authors took these parameters under consideration and included them in their statistical analysis.

**Response**: The included animals were Holstein, milked two times daily (morning and evening). Daily milk yield was estimated as the sum of the morning and evening milk yields. The effect of calving season was also included into the model.

**Materials and methods:**

It will be helpful if the authors could share the actual lactation length (in days) for each of the quartiles of pregnancy length in the present study.

**Response: THIS IS DONE**

**Results** :  
It would be important to understand the composition of milk in terms of fat, protein and lactose concentrations, to try and shed light on the changes in the mammary gland that are associated with the gestation length-does it has some “metabolic” maturation as well that can affect the composition and quality of milk, beyond the effect on the volume of milk.

**Response: AS DATA WAS COMING FROM MILK METERS MILK FAT PROTEIN WAS NOT AVAILABLE**

Regarding the cumulative milk yield through 305 days of lactation: the function described at lines 126-128 consider parameters of ramp, decay etc. does the authors have the measured values of the cumulative milk yield? At least in part of the herds included in this study? and if so, can the authors share information regarding the correlation between the calculated and measured 305 days cumulative milk production?

**Response: WE COULD DO THAT BUT THAT WOULD YIELD ANOTHER STUDY; WE CAN REFER TO MILKBOT METHODOLOGY**

From all the herds and dairy animals in this study- what is the percentage of animals that are being inseminated and the rates of natural service? It seems that the data on the short GL is biased by the pregnancy means, as almost 50% of the cows in this group are under natural service management (Table 1). I wonder if this number reflects their percentage from the entire database. If not, and these animals are over-represented in the group of short gestation length, maybe there is a shift in their pregnancy identification rather than an actual shorter pregnancy.

**Response: MOST FARMS SERVE USING AI AT THE MOMENT OF THE STUDY; THE 50% DOES NOT REFLECT REALITY BUT WE SHOULD TELL THIS SOMEWHERE IN THE STUDY**

**Discussion:**  
Other than proliferation of the gland and the appearance of milk producing unites (i.e. alveoli), can the authors suggest other parameters that may distinguish short from normal gestation length performance?

**Response: NO OTHER**

Specific comments:

Authors should maintain proper citation format (for example line 195, and line 177).

**Response**: corrected.

Line 206-207 need to be rewritten.

**Response**: rewritten.

Lines 92-93: please rewrite the citing part of the sentence.

**Response**: rewritten.

Figure 1: please find a different way to provide the details for each of the cows is the diagram as most of the longer gestation length cows details are overlapping.

**Response: I don’t have access to the used data!**

**MHO THIS IS IN TABLE 1 NO?**