The Importance of the de novo Group in Your Fatty Acid Profile

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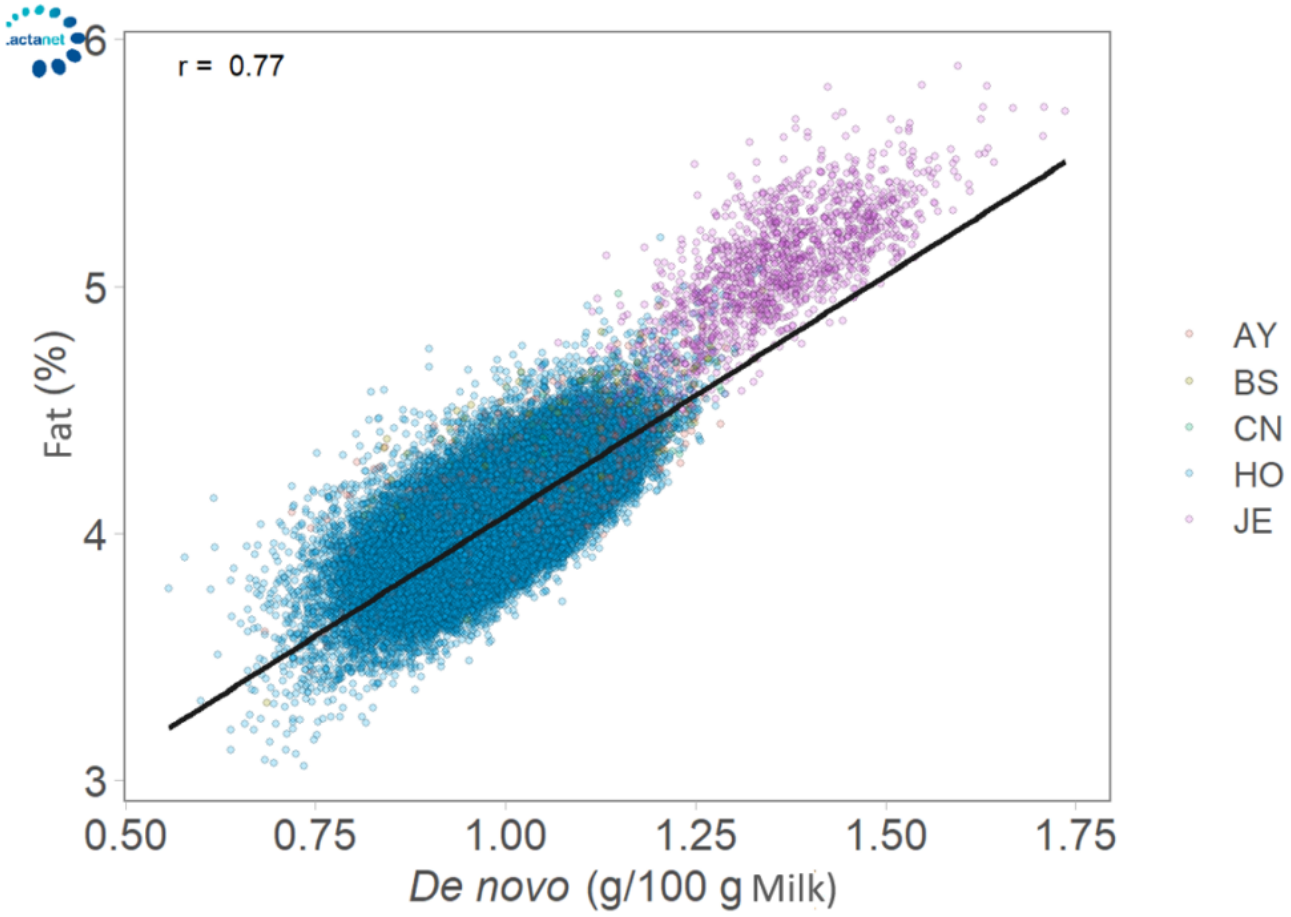
There are three groups of fatty acids, so what makes the *de novo* group so important? The data from Quebec clearly demonstrates that herds with more *de novo* fatty acids also have higher fat and protein levels in their milk. This relationship has also been demonstrated elsewhere in the world.

More de novo Fatty Acids = More Fat

This seems straightforward because the *de novo* fatty acids make up a part of the milk fat. As you can see in Figure 1 if the *de novo* group goes up, the fat goes up, and this is the case regardless of the cow breed (this graph uses data from Quebec herds on milk recording). There is also some other interesting information here that shows the importance of the connection between *de* novo fatty acids and milk fat. Even if the *de novo* group only makes up 25% of the milk fat in terms of quantity, the

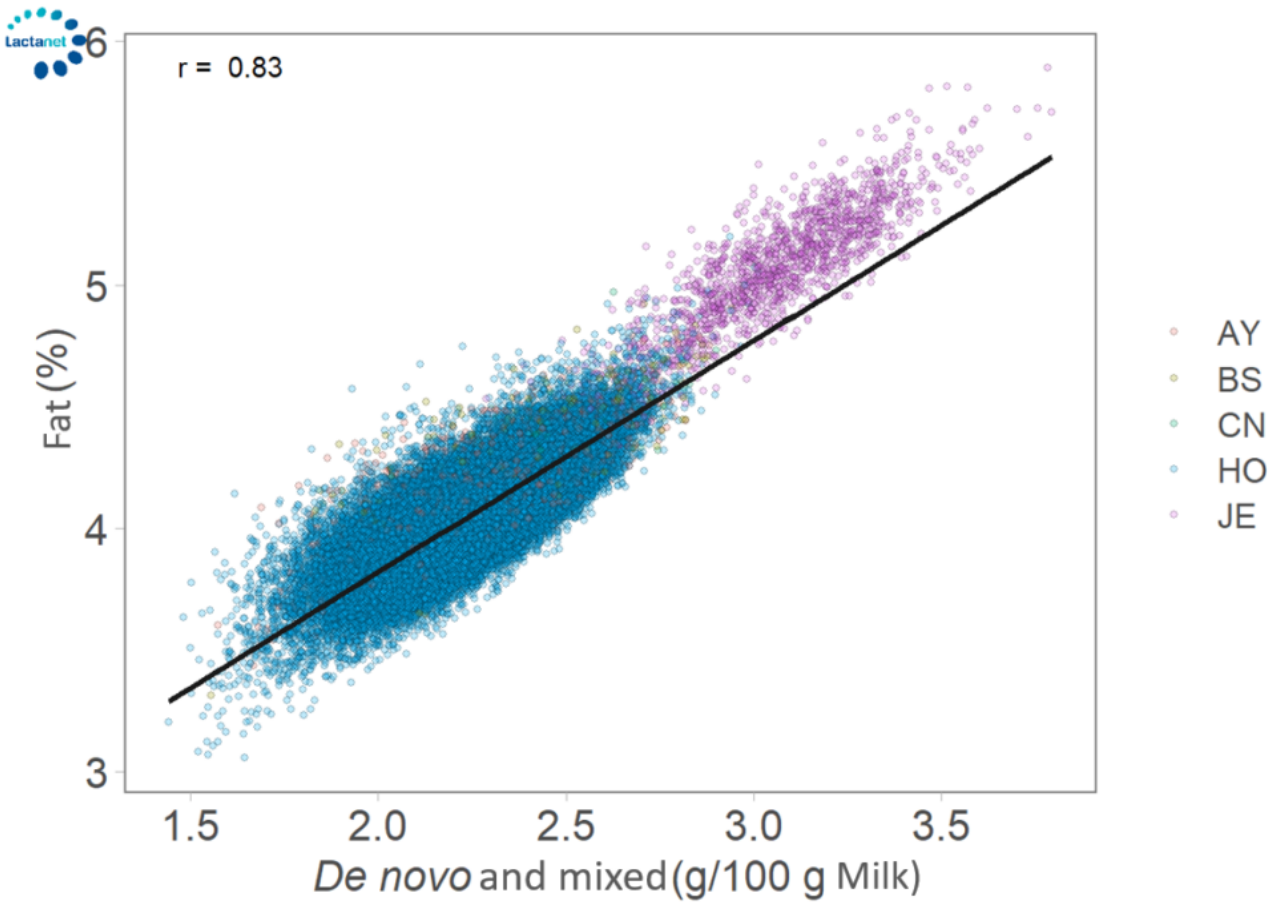
correlation between the *de novo* group and the percentage of milk fat is 77%! Therefore, if the *de novo* fatty acids are low, it is worth looking into why and trying to find a solution.

Figure 1



The relationship becomes even stronger when we combine the *de novo* + mixed fatty acids (Figure 2) therefore, we want both of these fatty acid groups to be high.

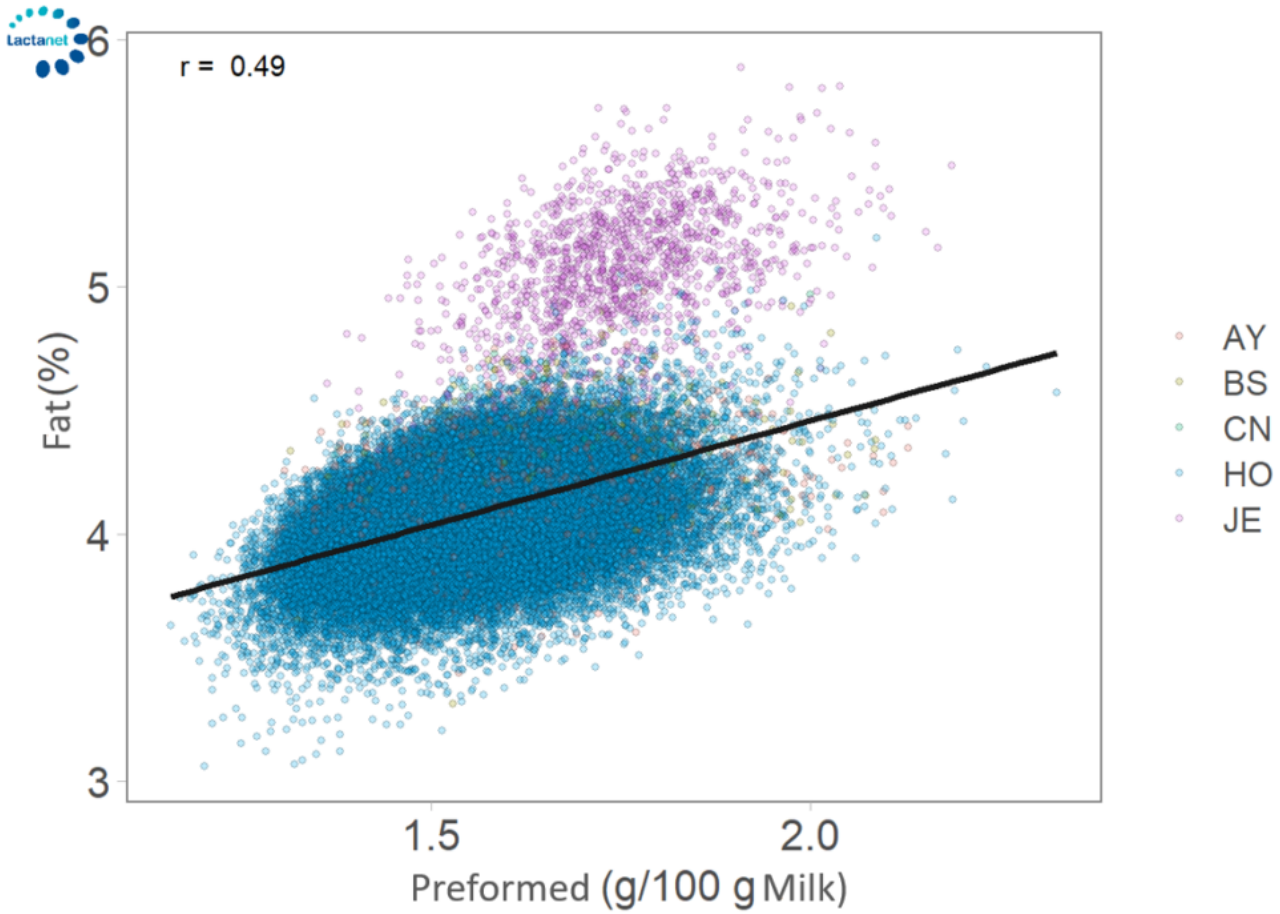
Figure 2



What about the preformed group?

The preformed fatty acids are also connected to milk fat, but less significantly than the *de novo* group, even though this group of fatty acids makes up almost 40% of the milk fat.

Figure 3



More de novo = More True Protein

Now this is getting interesting!

If the *de novo* group goes up, the true protein in the milk also goes up. This is proof that the *de novo* group can be an indicator of rumen health. In fact, rumen fermentation helps cows to use their ration efficiently, and therefore be able to produce the volatile fatty acids that are used to build *de novo* fatty acids. When the rumen microbes are working well, they can build more microbial protein, which contributes to the synthesis of milk protein as well as any other metabolic functions that require protein, for example the synthesis of lactose (and thus milk!).

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