

1 de novo FA: short chain FA (14 carbons or less) synthesized exclusively in the mammary gland from butyrate and acetate, two precursors that come from rumen fermentation.

2 Mixed FA: 16 carbon FA derived from mammary gland synthesis (*de novo*) or the blood (feed or mobilization of body reserves).

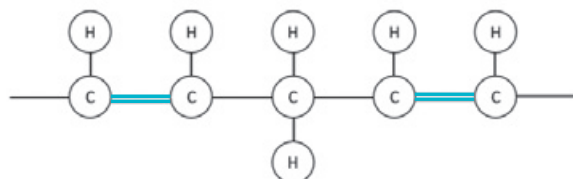
3 Preformed FA: long chain FA (15, 17 and 18 carbons or more) mainly derived from feed or mobilization of body reserves.

Polyunsaturated: FA with more than one double bonds, an increase in the milk reflects an increase in the ingestion of polyunsaturated FA or a problem with biohydrogenation. All polyunsaturated FA are preformed FA.

Rumen Biohydrogenation

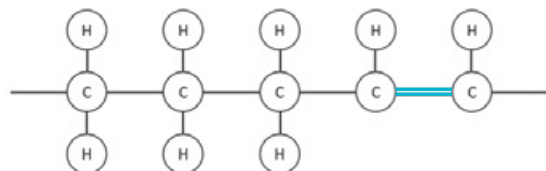
Polyunsaturated FA

(several double bonds)
18:3 and 18:2



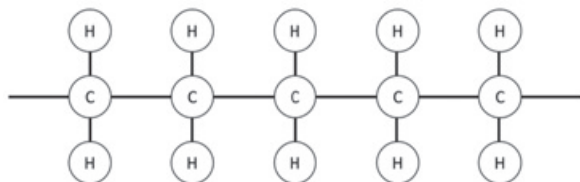
Monounsaturated FA

(1 double bond)
18:1



Saturated FA

(No double bonds)
18:0



Sources of Polyunsaturated Fatty Acids:

The majority of forages and linseed are sources of 18:3 FA, whereas cereals, soybeans and corn supply mostly 18:2 FA

Polyunsaturated FA have antimicrobial properties, so bacteria hydrogenate them to make them less "toxic"

Increased Polyunsaturated FA caused by:

- ▶ Increased intake of polyunsaturated FA
 - Increase in the quantity of feeds containing polyunsaturated FA
 - Introduction of a new feed containing polyunsaturated FA
- ▶ Rumen problem impeding proper biohydrogenation