



US005143737A

United States Patent [19]

[11] Patent Number: **5,143,737**

Richardson

[45] Date of Patent: **Sep. 1, 1992**

[54] **METHOD TO PRODUCE UNSATURATED MILK FAT AND MEAT FROM RUMINANT ANIMALS**

[75] Inventor: **Thomas Richardson, Davis, Calif.**

[73] Assignee: **The Regents of the University of California, Alameda, Calif.**

[21] Appl. No.: **597,997**

[22] Filed: **Oct. 15, 1990**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 420,905, Oct. 13, 1989, abandoned.

[51] Int. Cl.⁵ **A23K 1/00**

[52] U.S. Cl. **426/002; 426/98; 426/583; 426/601; 426/602; 426/623; 426/630; 426/656; 426/657; 426/658; 426/807**

[58] Field of Search **426/658, 636, 2, 657, 426/89, 98, 583, 601, 602, 807, 656, 623, 630**

[56] References Cited

U.S. PATENT DOCUMENTS

2,035,899	3/1936	Kraft	426/98
2,472,663	6/1949	Kleine	426/98
3,137,631	6/1964	Soloway	426/98
3,295,986	1/1967	Saslaw	426/98
4,216,234	8/1980	Rawlines et al.	426/98
4,248,899	2/1981	Lyon et al.	426/98
4,808,429	2/1989	Freeman	426/98
4,839,179	6/1989	Hirsbrunner	426/98

OTHER PUBLICATIONS

Webb "Byproducts from milk" Avi Publishing Co. Westport, Conn. 2nd Edition (1970) pp. 18-20.

Hawley "The Condensed Chemical Dictionary" Van Nostrand Reinhold Co. New York, NY 10th edition p. 154.

Primary Examiner—Penland, R. B.

Attorney, Agent, or Firm—Phillips, Moore Lempio & Finley

[57] ABSTRACT

The present invention relates to an improved method for the modification of a food for a ruminant mammal such that the mammal will produce a modified milk fat or meat fat which method comprises:

- (a) producing an emulsion of
 - (i) a non-toxic food substance to be encapsulated; and
 - (ii) an acid sensitive nontoxic crosslinkable material which will surround and encapsulate the substance with the proviso that no added crosslinking chemical is present in the emulsion; (b) subjecting the emulsion to reaction conditions which crosslink the crosslinkable material and encapsulate the substance. Specifically, the method is useful to encapsulate emulsified unsaturated fatty acids with a natural protein such as whey protein concentrate containing a reducing sugar, such as lactose, with crosslinking and encapsulating using the Maillard browning reaction. Cattle sheep or goats feed the modified food produce a higher level of unsaturated milk fat and meat fat. These food products having more unsaturated fat and less saturated fat are useful as food for mammals, especially human beings.

8 Claims, 14 Drawing Sheets