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(54) **BABY-FOOD COMPOSITIONS CONTAINING EGG YOLK AND METHODS THEREFOR**

(75) Inventors: **Richard C. Theuer**, Raleigh, NC (US); **Gerald E. Shaul**, Canajoharie, NY (US); **Terry L. Rocklin**, Fort Plain, NY (US); **Mary Beth Cool**, Canajoharie, NY (US); **Virginia A. San Fanandre**, Canajoharie, NY (US)

(73) Assignee: **Beech-Nut Nutrition Corporation**, St. Louis, MO (US)

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(51) **Int. Cl.**[7] **A21D 4/00**
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(58) **Field of Search** 426/614, 801, 426/321

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,013,799	A	* 3/1977	Smalligan et al.	
4,607,052	A	8/1986	Mendy et al.	514/547
4,670,285	A	* 6/1987	Clandinin et al.	
4,758,592	A	7/1988	Horrobin et al.	514/549
4,776,984	A	10/1988	Traitler et al.	260/412.2
4,795,650	A	1/1989	Groobert	426/306
4,918,063	A	4/1990	Lichtenberger	514/78
4,977,187	A	12/1990	Horrobin	514/560
5,053,387	A	10/1991	Alexander	514/2
5,120,760	A	6/1992	Horrobin	514/458
5,130,449	A	7/1992	Lagarde et al.	554/186
5,134,129	A	7/1992	Lichtenberger	514/78
5,158,975	A	10/1992	Guichardant et al.	514/560
5,178,873	A	1/1993	Horrobin et al.	424/422
5,215,746	A	6/1993	Stolle et al.	424/92
5,221,668	A	6/1993	Henningfield et al.	514/23
5,223,285	A	6/1993	DeMichele et al.	426/72
5,234,702	A	8/1993	Katz et al.	426/72
5,246,717	A	9/1993	Garwin	426/2
5,290,573	A	3/1994	Holub	426/2
5,308,832	A	5/1994	Garleb et al.	514/2
5,340,594	A	8/1994	Barclay	426/49
5,403,826	A	4/1995	Cope et al.	514/21
5,415,879	A	5/1995	Oh	426/2
5,445,822	A	8/1995	Bracco	424/401
5,457,130	A	10/1995	Tisdale et al.	514/560
5,480,872	A	1/1996	Cope et al.	514/21
5,492,938	A	2/1996	Kyle et al.	514/786
5,516,801	A	5/1996	Horrobin et al.	514/560
5,520,938	A	5/1996	Brunnquell	426/106
5,603,959	A	2/1997	Horrobin et al.	424/490
5,604,216	A	2/1997	Horrobin	514/182
5,614,244	A	3/1997	Heick et al.	426/582
5,656,319	A	8/1997	Barclay	426/574
5,665,375	A	9/1997	Meier et al.	424/439
5,670,540	A	9/1997	Horrobin et al.	514/549
6,149,964	A	* 11/2000	Theuer et al.	

FOREIGN PATENT DOCUMENTS

EP	0 443 047 B1		8/1991
EP	0 775 449 A1		5/1997
EP	775449	*	5/1997
JP	57-115159		7/1982
JP	59-39258		3/1984
JP	62-120340		6/1987
JP	01-160989		6/1989
WO	89/11521 A1		11/1989
WO	96/00016 A1		1/1996
WO	97/26804		7/1997

OTHER PUBLICATIONS

Simopoulos et al. "Egg yolk as a source a long–chain polyunsaturated fatty acids in infant feeding" Am. J. Clin. Nutr. 1992. vol. 55. pp. 411–414.*

Ono et al. "Water Activity–Adjusted Enzymatic Partial Hydrolysis of Phospholipids to Concentrate Polyunsaturated Fatty Acids" 1997 JAOC. vol. 74, No. 11. pp. 1415–1417.*

Spock, "Baby And Child Care," Pocket Books, Inc., 1963, pp. 132–133.

Jackson, et al., Am. J. Clin. Nutr. 1989;50:980–2, "Weaning foods cannot replace breast milk as sources of long–chain polyunsaturated fatty acids".

Simopoulos, et al., Am. J. Clin. Nutr. 1992;55:411–4, "Egg yolk as a source of long–chain polyunsaturated fatty acids in infant feeding".

Ono, et al., JAOS, vol. 74, No. 11, 1997, "Water Activity–Adjusted Enzymatic Partial Hydrolysis of Phospholipids to Concentrate Polyunsaturated Fatty Acids".

Auestad et al., Visual Acuity, Erythrocyte Fatty Acid Composition, and Growth in Term Infants Fed Formulas with Long Chain Polyunsaturated Fatty Acids for One Year, *Pediatric Research* 41(1):1–10 (1997).

Biagi et al., The Effect Of Famma–Linolenic Acid On Clinical Status, Red Cell Fatty Acid Composition And Membrane Microviscosity In Infants With Atopic Dermatitis, *Drugs Exptl. Clin Res.* XX(2):77–84 (1994).

(List continued on next page.)

Primary Examiner—Anthony J. Weier
(74) *Attorney, Agent, or Firm*—Harness, Dickey & Pierce, P.L.C.

(57) **ABSTRACT**

Baby-food compositions containing about 5% to about 25% egg-yolk solids and an acidulant in an acceptable, shelf-stable, baby-food preparation is set forth. The acidulant can be an acid, a cultured food substance containing lactic acid or a fruit or vegetable component which contributes acidity to the composition or a combination thereof. Also described are methods for preparing and using the compositions.

25 Claims, No Drawings