TITLE

BITE-SIZE NUTRITIONAL PRODUCTS HAVING A FILLING AND METHODS FOR USING SAME

BACKGROUND

[0001] The present disclosure generally relates to compositions and methods for providing nutrition in a tasty and convenient manner. More specifically, the present disclosure is directed to bite-size nutritional products having a filling and methods for using same before, during and/or after exercising, or as a nutritious snack.

[0002] There are many types of nutritional compositions currently on the market. Nutritional compositions can be targeted toward certain consumer types, for example, young, elderly, athletic, etc., based on the specific ingredients of the nutritional composition. For example, it is well established that carbohydrate ingestion during or before exercise improves endurance performance, as well as shorter duration exercise. One manner in which to provide the proper amounts of carbohydrates required for endurance performance is in the form of a solid performance bar having a specific carbohydrate composition. Known performance bars, however, may be difficult to consume during exercise, may be too dense or heavy for consumption before or during exercise, or may have a chalky or bland taste. Additionally, these large bars may be physically bulky, awkward, and difficult to consume.

[0003] One goal of nutritional support, therefore, is to provide nutritional products that can very efficiently provide individuals with a delicious, healthy and nutritious bite-size snack, while at the same time providing a snack product that is easy to consume.

[0003A] EP 2 098 126 A1 discloses a filing comprised by a dried food product, i.e. a carbohydrate bar, along with a crust.

SUMMARY

[0004] The present disclosure relates to bite-size nutritional products having a dough portion and a filling. In an embodiment, the present disclosure is directed to a bite-size

nutritional product having a dough portion including a carbohydrate source having a glucogenic:fructogenic carbohydrate ratio ranging between about 1.5 to about 2.5 with at least

EXAMPLE 4 Sample formulation

Table 4: Bite-size carbohydrate-based chocolate nutritional product formulation

Description	%
CORE	
Dry	
MALTODEXTRIN	14.30
SWT DR CRANBERRIES	7.77
COCOA, RED	5.96
ULTRANOR MPI 9060 UM01/X150	5.83
FRUCTOSE DRY	5.83
SOY CRISP RICE	5.44
SALT FINE PREPARED FLOUR	0.39
LIGHT ROAST PEANUT FLOUR	0.10
LIQUIDS	
EVAP CANE JUICE INVERT SYRUP	23.10
FLN CRANBERRY WONF	0.70
OIL, CANOLA, DRUM	0.22
FLN GYLCEROL	0.37
COATING	
MILK CHOCOLATE	15.00
BREADER	
CHOCOLATE CRUMB	9.00
QUICK OATS / QUICK ROLLED OATS	6.00
TOTALS	**100.00**

[00143] It should be understood that various changes and modifications to the presently preferred embodiments described herein will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the ~~spirit and~~ scope of the present subject matter and without diminishing its intended advantages. It is therefore intended that such changes and modifications be covered by the appended claims.

CLAIMS

1. A bite-size carbohydrate-based product comprising: a dough portion having a carbohydrate source comprising a glucogenic:fructogenic carbohydrate ratio ranging between about 1.5 to about 2.5 with at least 60% of the energy content of the bite-size carbohydrate-based product coming from the carbohydrate source; and a filling encased by the dough portion, wherein the sodium ranges from about 200 mg to about 400 mg of sodium per 100 g of the bite-size carbohydrate-based product, ~~and~~ wherein the filling is ~~in a form selected from the group consisting of powder, paste, puree, gel, cream, dispersion, colloid, liquid,~~ semi-liquid, ~~and combinations thereof~~ and wherein the filling comprises from about 10% to about 20% by weight of the product.

2. The bite-size carbohydrate-based product according to Claim 1, wherein the dough portion, the filling or the dough portion and the filling individually further comprise at least one of: a fat, a fiber a protein, a particulate, an active ingredient, a flavor, and combinations thereof.

~~3. The bite-size carbohydrate-based product according to Claim 2, wherein the protein source comprises a protein blend comprising soy protein isolates, whey protein isolates, calcium caseinate and combinations thereof.~~

~~4~~3. The bite-size carbohydrate-based product according to Claim 2 ~~or claim 3~~, wherein the active ingredient is conjugated linoleic acid.

~~5. The bite-size carbohydrate-based product according to any one of Claims 1 to 4, wherein the filling comprises from about 10% to about 20% by weight of the nutritional product.~~

~~6~~4. The bite-size carbohydrate-based product according to ~~any one of~~ Claim~~s~~ 1 ~~to 5~~, further comprising a coating.

~~7~~5. The bite-size carbohydrate-based product according to Claim ~~6~~4, the coating further comprising a plurality of particulates selected from the group consisting of nuts, fruit, oats, crispy cereal crumbs, flakes, breading, and combinations thereof.

~~8~~6. The bite-size carbohydrate-based product according to ~~any one of~~ Claim~~s~~ 1 ~~to 7~~, wherein the bite-size carbohydrate-based product comprises an energy content of about between about 30 kcal to about 45 kcal, and wherein at least 70% of the energy content of the bite-size carbohydrate-based product comes from the carbohydrates.

~~9~~7. The bite-size carbohydrate-based product according to ~~any one of~~ Claim~~s~~ 1 ~~to 8~~, wherein the dough portion has a protein source that provides the bite-size product with about 20% to about 40% protein by weight of the product.

8. The bite-size carbohydrate-based product according to Claim 2, wherein the protein source comprises a protein blend comprising soy protein isolates, whey protein isolates, calcium caseinate and combinations thereof.

~~10~~9. The bite-size carbohydrate-based product according to ~~any one of~~ Claim~~s~~ 1 ~~to 9~~, the dough portion further comprising a source of fat, wherein the source of fat provides about 25% of the energy of the bite-size product.

~~11~~10. The bite-size carbohydrate-based product according to Claim~~s~~ 1 ~~to 9~~, the dough portion further comprising a source of fat, wherein the source of fat provides fat in an amount of up to about 9 g/300 cal per bite-size protein-based product.

1~~2~~1. The bite-size carbohydrate-based product according to Claim~~s 1 to 1~~1, wherein the dough portion has a protein source that provides the bite-size protein-based product with about 2 g to about 4 g of protein per bite-size protein-based product.

132. A method for providing nutrition to an athlete, the method comprising the steps of: providing a bite-size carbohydrate-based product comprising a dough portion comprising a carbohydrate source comprising a glucogenic:fructogenic carbohydrate ratio ranging between about 1.5 to about 2.5 with at least 60% of the energy content of the bite-size carbohydrate-

based product coming from the carbohydrate source, a filling encased by the dough portion, and sodium; and providing personalized guidelines for consuming the bite-size carbohydrate-based product, wherein the personalized guidelines provide the recommended amount of the bite-size carbohydrate-based product to consume before and during exercising based on at least one of a characteristic of the athlete and a training regimen of the athlete.

~~14. The method according to Claim 13~~, wherein the bite-size carbohydrate-based product is selected from the group consisting of those claimed in any of Claim 1 to Claim 1~~2~~1.

1~~5~~3. The method according to Claim ~~13 or claim 14~~12, wherein the characteristic of the athlete is selected from the group consisting of weight, height, age, gender and combinations thereof.

1~~6~~4. The method according to ~~any one of~~ Claim~~s 13 to 15~~ 12, wherein the training regimen is selected from the group consisting of running, swimming, cycling, hiking, football, basketball, baseball, soccer and combinations thereof.

1~~7~~5. The method according to ~~any one of~~ Claim~~s 13 to 16~~ 12, wherein the personal guidelines are further based on the duration of the training regimen of the athlete.

1~~8~~6. The method according to ~~any one of~~ Claim~~s 13 to 17~~ 12, wherein training regimen is determined based on a sport.

~~19. The method according to any one of Claims 13 to 17~~, or wherein training regimen is determined based on a personal objective.

~~20~~17. The method according to Claim 1~~9~~6, wherein the personal objective is selected from the group consisting of weight-loss, muscle building and combinations thereof.

~~21~~18. The method according to ~~any one of~~ Claim~~s 13 to 20~~ 12, wherein the personalized guidelines provide the recommended amount of the bite-size carbohydrate-based product to

consume after exercising during recovery based on at least one of the characteristic of the athlete and the training regimen of the athlete.

~~22~~19. The method according to ~~any one of~~ Claim~~s 13 to 21~~ 12, further comprising enhancing the performance of an athlete~~.~~

~~23. The method according to any one of Claims 13 to 22~~, or further comprising improving recovery of an athlete after exercising.

~~24~~20. The method according to ~~any one of~~ Claim~~s 13 to 23~~ 12, further comprising selling a bite-size carbohydrate-based product, the method further comprising the steps of: providing a plurality of bite-size carbohydrate-based products in a package, and selling the bite-size carbohydrate-based product package and the guidelines to an athlete.

~~25~~21. A nutritional kit comprising a plurality of bite-size carbohydrate-based products and personalized guidelines on how many of the bite-size carbohydrate-based products an athlete should consume before and during exercising, the bite-size carbohydrate-based products comprising a dough portion comprising a carbohydrate source comprising a glucogenic:fructogenic carbohydrate ratio ranging between about 1.5 to about 2.5 with at least 60% of the energy content of the bite-size carbohydrate-based product coming from the carbohydrate source, a filling encased by the dough portion, and sodium~~.~~

~~26. The nutritional kit according to Claim 25~~, wherein the bite-size carbohydrate-based product is selected from the group consisting of those claimed in any of Claim 1 to Claim 1~~2~~1.

~~27~~22. The nutritional kit according to Claim ~~25 or claim 26~~21, wherein the personalized guidelines provide at least one of:

the recommended amount of the bite-size carbohydrate-based product to consume before and during exercising based on a physical characteristic of the athlete; or

the recommended amount of the bite-size carbohydrate-based product to the athlete before and during exercising based on the training regimen of the athlete.