COPAL COCOA *Info*

A Weekly Newsletter of Cocoa Producers' Alliance

Issue No. 282 **5th – 9th May 2008**

Cocoa Producers' Alliance

ICCO Daily Cocoa Prices

	ICCO daily price (SDRs/tone)	ICCO daily price (US$/tone)	London futures (#/tone)	New York futures (US$/tone)
5th May	1645.95	2666.22	1404.17	2600.00
6th May	1707.47	2768.65	1428.33	2754.33
7th May	1671.34	2700.86	1422.67	2660.67
8th May	1691.57	2731.32	1440.33	2683.67
9th May	1701.17	2756.95	1457.00	2712.67
Average	**1684.00**	**2725.00**	**1431.00**	**2682.00**

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- The ethical chocoholic

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Do your health a favour, drink Cocoa everyday

International Financial Futures and Options Exchange (LIFFE)
London Futures Market – Summary of Trading Activities
(£ per tonne)

Monday 5th May 2008

Month	Opening Trans	Settle	Change	Daily High	Daily Low	Volume
May 2008		1407	0			
Jul 2008		1423	0			
Sep 2008		1367	0			
Dec 2008		1350	0			
Mar 2009		1324	0			
May 2009		1330	0			
Jul 2009		1339	0			
Sep 2009		1348	0			
Dec 2009		1359	0			
Mar 2010		1358	0			
Totals		**1361**				**0**

Tuesday 6th May 2008

Month	Opening Trans	Settle	Change	High	Low	Volume
May 2008	1411	1456	49	1456	1409	1,713
Jul 2008	1432	1474	51	1479	1423	7,556
Sep 2008	1377	1415	48	1420	1370	1,419
Dec 2008	1360	1396	46	1399S	1352S	1,084
Mar 2009	1338	1371	47	1375	1329	1,679
May 2009	1343	1376	46	1375S	1341S	486
Jul 2009		1385	46			0
Sep 2009	1361	1394	46	1361S	1361S	200
Dec 2009	1373	1405	46	1361S	1361S	275
Mar 2010		1404	46			0
Totals		**1408**				**14,412**

Wednesday 7th May 2008

Month	Opening Trans	Settle	Change	High	Low	Volume
May 2008	1460	1446	-10	1461S	1430	4,508
Jul 2008	1482	1466	-8	1482	1433	6,335
Sep 2008	1416	1410	-5	1422S	1380	1,459
Dec 2008	1398	1392	-4	1406	1365	1,221
Mar 2009	1373	1368	-3	1377	1351	558
May 2009	1375	1373	-3	1378S	1359	87
Jul 2009	1376	1382	-3	1385S	1376S	9
Sep 2009		1391	-3			0
Dec 2009		1402	-3			0
Mar 2010		1401	-3			0
Totals		**1403**				**14,177**

Thursday 8th May 2008

Month	Opening Trans	Settle	Change	High	Low	Volume
May 2008	1429	1457	11	1462	1428	2,470
Jul 2008	1456	1483	17	1488	1445	5,147
Sep 2008	1400	1429	19	1433S	1392	2,545
Dec 2008	1376	1409	17	1412S	1371	2,412
Mar 2009	1350	1385	17	1388S	1349	2,606
May 2009	1361	1390	17	1395S	1361	276
Jul 2009	1367	1400	18	1405	1367S	330
Sep 2009		1409	18			0
Dec 2009		1420	18			0
Mar 2010		1419	18			0
Totals		**1420**				**15,786**

Friday 9th May 2008

Month	Opening Trans	Settle	Change	High	Low	Volume
May 2008	1457	1478	21	1487	1451S	5,204
Jul 2008	1484	1499	16	1512	1475	9,643
Sep 2008	1430	1446	17	1459S	1425	2,351
Dec 2008	1410	1426	17	1440S	1405	2,366
Mar 2009	1388	1399	14	1411S	1381S	2,395
May 2009	1388	1404	14	1415S	1388	261
Jul 2009	1403	1414	14	1422S	1403S	53
Sep 2009	1410	1423	14	1410S	1410S	50
Dec 2009	1423	1434	14	1423S	1423S	100
Mar 2010		1433	14			0
Totals		**1436**				**22423**

Average for the week	**1424**				**13360**
Total for the week					**66,798**

New York Board of Trade
(New York Futures Market – Summary of Trading Activities)
(US$ per tonne)

Monday 5th May 2008

Month	Open	Price	Change	High	Low	Volume
May 2008	0	2690	-50	2690	2690	3
Jul 2008	2 591	2631	10	2635	2583	10,274
Sep 2008	2575	2603	10	2607	2560	1757
Dec 2008	2555	2585	13	2586	2555	248
Mar 2009	2510	2559	9	2559	2504	198
May 2009		2559	7	2559	2559	47
Jul 2009		2563	10	2563	2563	7
Sep 2009		2565	7	2565	2565	0
Dec 2009	2597	2593	1	2597	2593	1
Mar 2010		2618	1	2618	2618	0
Totals		**2586**				**12535**

Tuesday 6th May 2008

Month	Open	Price	Change	High	Low	Volume
May 2008	2840	2781	91	2840	2781	107
Jul 2008	2632	2726	95	2785	2621	4126
Sep 2008	2605	2697	94	2750	2593	939
Dec 2008	2586	2676	91	2733	2585	216
Mar 2009	2563	2645	86	2655	2563	28
May 2009	2563	2649	90	2649	2563	17
Jul 2009		2652	89	2652	2652	16
Sep 2009		2660	95	2660	2660	0
Dec 2009		2684	91	2684	2684	1
Mar 2010		2704	86	2704	2704	0
Totals		**2687**				**5450**

Wednesday 7th May 2008

Month	Open	Price	Change	High	Low	Volume
May 2008		2777	-4	2777	2777	1
Jul 2008	2756	2682	-44	2770	2625	11,445
Sep 2008	2728	2664	-33	2728	2603	1,006
Dec 2008	2689	2644	-32	2689	2581	366
Mar 2009	2565	2620	-25	2639	2565	43
May 2009		2625	-24	2625	2625	7
Jul 2009		2629	-23	2629	2629	1
Sep 2009		2635	-25	2635	2635	0
Dec 2009		2662	-22	2662	2662	1
Mar 2010		2682	-22	2682	2682	0
Totals		**2649**				**12870**

Thursday 8th May 2008

Month	Open	Price	Change	High	Low	Volume
May 2008	2815	2800	23	2850	2800	0
Jul 2008	2672	2709	27	2724	2633	6,950
Sep 2008	2634	2689	25	2701	2626	1,229
Dec 2008	2606	2664	20	2678	2606	775
Mar 2009	2582	2639	19	2650	2582	187
May 2009	2583	2640	15	2645	2583	5
Jul 2009	2650	2640	11	2650	2640	4
Sep 2009		2652	17	2652	2652	0
Dec 2009		2677	15	2677	2677	11
Mar 2010		2699	17	2699	2699	0
Totals		**2681**				**9161**

Friday 9th May 2008

Month	Open	Price	Change	High	Low	Volume
May 2008	2900	2875	75	2900	2875	4
Jul 2008	2705	2741	32	2758	2705	7,289
Sep 2008	2699	2719	30	2730	2693	895
Dec 2008	2673	2696	32	2703	2665	677
Mar 2009	2637	2666	27	2666	2637	406
May 2009	2635	2669	29	2674	2635	198
Jul 2009	2652	2668	28	2668	2647	25
Sep 2009		2677	25	2677	2677	0
Dec 2009		2692	15	2692	2692	10
Mar 2010		2717	18	2717	2717	0
Totals		**2712**				**9504**

Average for the week	**2691**				**12380**
Total for the week					**49,520**

Spot Prices [US$ per tonne]

	5th May	6th May	7th May	8th May	9th May
Main Crop Ghana, Grade 1	3081	3176	3124	3151	3183
Main Crop Ivory Coast, Grade 1	2948	3043	2995	3022	3054
Main Crop Nigerian, 1	2929	3024	2977	3004	3036
Superior Arriba	2954	3049	2972	2999	3031
Sanchez f.a.q.	2974	3069	3044	3071	3103
Malaysian 110	2629	2724	2684	2711	2743
Sulawesi f.a.q.	2874	2969	2912	2939	2971
Ecuador Cocoa Liquor	4455	4616	4711	4759	4815
Pure Prime Press African Type Cocoa Butter	7270	7533	7465	7540	7629
10/12% Natural Cocoa Press Cake	1009	1045	1118	1129	1142

Source: Cocoa Merchants' Association

News

Health and Nutrition

Cultures Encapsulated with Chocolate Food Products Coated with Chocolate and Method of Preparation - health
FLEXNEWS, France
Source: United States Patent and Trademark Office (USPTO)
05/05/2008
Food products are provided comprising a food base and the chocolate or cocoa butter encapsulated pro-biotic, especially lactic acid forming cultures, as a coating or portion or phase of the food product. The food base can include the chocolate or cocoa butter encapsulated pro-biotic as a topical coating or phase or portion. The food base or foodstuff is dried and has a water activity ranging from about 0.1 to about 0.35. The weight ratio of food base to chocolate or cocoa butter encapsulated pro-biotic ranges from about 100:1 to about 100:400. The pieces of the coated food base can be admixed with pieces of uncoated dried food base of the same or different composition to provide desired levels of pro-biotic fortification.

Inventors: O'Toole; John A.; (Medicine Lake, MN)
Correspondence Name and Address:
GENERAL MILLS, INC., P.O. BOX 1113, MINNEAPOLIS, MN - 55440 - US

Assignee Name and Adress: GENERAL MILLS, INC., Minneapolis, - MN

1. A fortified sweetened cocoa butter fat or chocolate composition, comprising:an edible cocoa butter fat;a nutritive carbohydrate sweetening ingredient having a particle size of less than 50 micron in a weight ratio of cocoa butter fat ingredient a sugar ingredient range of about 10:1 to about 10; and,sufficient amounts of freeze dried, viable probiotic cultures homogeneously dispersed there through such as to provide at least 10.sup.3 to about 10.sup.9 colony forming unit's ("cfu") per gram,wherein the chocolate or cocoa butter has a water activity ("A.sub.w") of equal or less than about 0.3.

2. The chocolate or cocoa butter composition of claim 1 having a moisture content of less than 0.5%.

3. The chocolate or cocoa butter composition of claim 2 additionally comprising cocoa powder.

4. The chocolate or cocoa butter composition of claim 3 wherein at least a portion of the nutritive carbohydrate sweetening ingredient is sucrose.

5. The chocolate or cocoa butter composition of claim 4 wherein the viable probiotic cultures includes a lactic acid generating organism.

6. The chocolate or cocoa butter composition of claim 5 wherein the viable pro-biotic culture includes a yogurt culture.

7. The chocolate or cocoa butter composition of claim 6 comprising about 0.01% to 0.15% by weight of freeze dried viable culture.

8. The chocolate or cocoa butter composition of claim 7 wherein the cocoa butter fat ingredient is free of hydrogenated vegetable cocoa butter fats.

9. The chocolate or cocoa butter composition of claim 8 wherein at least a majority of the nutritive carbohydrate sweetening ingredient is sucrose.

10. The chocolate or cocoa butter composition of claim 9 additionally comprising about 1% to about 25% of milk solids.

12. The chocolate or cocoa butter of claim 11 wherein at least a portion of milk solids is non-fat dry milk solids.

13. The chocolate or cocoa butter of claim 12 additionally comprising about 0.1% to 10% of a calcium ingredient having a particle size of less than 50 microns.

14. The chocolate or cocoa butter of claim 12 additionally including vanilla and lecithin.

15. A shelf stable food product, comprising:a dried food base having a water activity ranging from about 0.1 to about 0.35; anda chocolate or cocoa butter encapsulated pro-biotic as a coating or portion or phase of the food product;wherein the weight ratio of food base to chocolate or cocoa butter encapsulated pro-biotic ranges from about 100:1 to about 100:400.

16. The food product of claim 15 wherein the chocolate or cocoa butter has a moisture content of less than 0.5%.

17. The food product of claim 16 wherein at least a portion of the chocolate or cocoa butter encapsulated pro-biotic is applied to the exterior of the dried food base.

18. The food product of claim 17 wherein at least a portion of the food base is in the form of ready-to-eat cereal pieces.

19. The food product of claim 18 wherein at least a portion of the ready-to-eat cereal pieces is in the form of flakes.

20. The food product of claim 19 additionally comprising uncoated pieces of ready-to-eat cereal.

21. The food product of claim 20 wherein at least a portion of the uncoated cereal pieces are in the form of flakes.

22. The food product of claim of claim 17 wherein the food base includes biscuits, cereal bars, candies, cookies, dried fruits, fried grain based snacks, nuts, pretzels and mixtures.

23. The food product of claim of 22 wherein at least a portion of the viable culture is a yogurt culture.

24. The food product of claim 15 wherein the chocolate or cocoa butter is dark chocolate.

25. The food product of claim 24 wherein the dark chocolate is milk chocolate.

26. The food product of claim 17 wherein the coating is discontinuous.

27. The food product of claim 22 wherein the food base is a candy.

28. The food product of claim 25 wherein the food base is a chocolate flavored ready-to-eat cereal.
29. The food product of claim 28 in the form of a loose aggregation of particulates.

30. The food product of claim 28 in the form of a bar.

31. A method for preparing coated food comestible with an inoculated chocolate or cocoa butter coating, comprising the steps of:A. providing a melted chocolate or cocoa butter, comprising:a cocoa butter fat having a melting point ranging from about 25-45.degree. C. (77-113.degree. F.);sugar; and,having a temperature of 50.degree. C. (122.degree. F.) or lessa water activity of 0.3 or less,B. admixing sufficient amounts of freeze dried viable pro-biotic culture to form a homogenously inoculated melted chocolate or cocoa butter having 10.sup.3 to 10.sup.9 colony forming units per gram;C. combining the inoculated melted chocolate or cocoa butter with a comestible base to form a composite comestible base having an inoculated chocolate or cocoa butter potion in a weight ratio of comestible base to inoculated chocolate or cocoa butter portion ranging from about 100:1 to 100:400; andD. cooling the coated comestible to below the melting point of the cocoa butter fat of the chocolate or cocoa butter to form a chocolate or cocoa butter coated comestible having encapsulated viable pro-biotic cultures.

32. The method of claim wherein in step C the food base is heated to at least the melting point of the chocolate or cocoa butter.

33. The method of claim 32 wherein in step B the freeze dried culture is chilled to a temperature below 10.degree. C. (50.degree. F.).

34. The method of claim 33 wherein the chocolate or cocoa butter is a dark chocolate.

35. The method of claim 31 wherein step C is practiced to form an exterior coating to at least a portion of the food base.

36. The method of claim 35 wherein step C is practiced to substantially coat the entire food base.

37. The method of claim of claim 36 wherein step D is practiced to temper the coated food base at below about 25.degree. C. (77.degree. F.) for 50 to 400 minutes to form a cooled tempered chocolate or cocoa butter coated comestible.

38. The method of claim 37 wherein step D is practiced to temper the coated food base at preferably between 10-20.degree. C. (50-68.degree. F.) for about 100 to 250 minutes.

39. The method of claim 38, additionally comprising the step of:E. Applying a polish coating to provide a polished or polish top coat to the chocolate or cocoa butter base coating.

40. The method of claim 39 wherein step E is practiced by applying a slurry of starch in about 85-95% of the slurry of a vegetable oil at under 20.degree. C. (68.degree. F.) to the cooled tempered coated food base in a weight ratio of starch polish slurry to coated food base ranging from about 1:100 to about 10:100.

41. The method of claim 40 additionally comprising the step of:F. applying a sealing coating of a oil at under 20.degree. C. (68.degree. F.) to the polish coated chocolate coated food base.

42. The method of claim 41 wherein step F is practiced oil at under 20.degree. C. (68.degree. F.) and wherein at least a portion of the oil at under 20.degree. C. (68.degree. F.) is edible shellac.

43. The method of claim 41 wherein the about 10%-30% of edible shellac is dissolved in undenatured alcohol to form a sealing solution and wherein the weight ratio of chocolate or cocoa butter coated food base to edible shellac sealing solution ranges from about 100:1 to 100:5.

44. The method of claim 43 wherein step B is practiced with sufficient amounts of freeze dried pro-biotic culture to provide a coated food comestible with an I inoculated chocolate or cocoa butter coating having about 10.sup.6 to about 10.sup.8 cfu/g of the probiotic micro-organism.

45. The method of claim 44 wherein at least a portion of the food base is ready-to-eat cereal.

46. The method of claim 45 wherein the ready-to-eat cereal is in the form of loose pieces.

47. The method of claim 47 wherein at lest a portion of the cereal pieces are in the form of flakes.

48. The method of claim 32 wherein the comestible base is a candy or confection.

49. The method of claim 48 wherein the chocolate or cocoa butter is a milk chocolate.

50. The method of claim 46 wherein the food base pieces are chocolate flavored.

Description

REFERENCE TO RELATED APPLICATIONS

[0001]This application claims the benefit of priority under 35 U.S.C. .sctn. 119(e)(1) of a provisional patent application, Ser. No. 60/481,498, filed Jun. 21, 2004, which is incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002]The present invention relates to food products and to their methods of preparation. More particularly, the present invention relates to live cultures such as yogurt or probiotic cultures encapsulated in chocolate or cocoa butter to provide "loaded" or inoculated chocolate or cocoa butter, to food products bearing or coated with such "inoculated" chocolate or cocoa butter such as breakfast cereals, and to methods of preparation of such inoculated chocolate or cocoa butter and food products.

[0003]Probiotic micro-organisms are micro-organisms which beneficially affect a host by improving its intestinal microbial balance. In general, it is believed that probiotic micro-organisms produce organic acids such as lactic acid and acetic acid which inhibit the growth of pathogenic bacteria such as Clostridium perfringens and Helicobacter pylori. Probiotic bacteria are therefore believed to be useful in the treatment and prevention of conditions caused by pathogenic bacteria. Further, probiotic micro-organisms are believed to inhibit the growth and activity of putrefying bacteria and hence the production of toxic amine compounds. It is also believed that probiotic bacteria activate the immune function of the host.

[0004]There is considerable interest in including probiotic micro-organisms into foodstuffs. For example, many fermented or inoculated milk products are commercially available that contain probiotic micro-organisms. Usually these products are in the

form of yogurts or inoculated pasteurized refrigerated fluid milk. Indeed, yogurt per se is considered to be a good source of such live and active pro-biotic cultures. Also, several infant and follow-up formulas which contain probiotic micro-organisms are also commercially available; for example the BIO NAN..RTM.. formula (Societe des Produits Nestle SA). Typically, these products have high water activity values (e.g., greater than 0.9) and thus provide a moist environment in which moisture is available to maintain the cultures as live and active or viable for the duration of their limited refrigerated shelf life (of generally less than sixty days).

[0005]Similarly, for animals, there has been interest in including probiotic micro-organisms into animal feeds. See for example U.S. Pat. No. 5,968,569 "Pet Food Product Containing Probiotics" (issued Oct. 19, 1999 to Cavadini, et al.). The present invention thus provides improvements in the compositions and methods described therein.

[0006]However as described in the '569 patent, there are two main issues in incorporating probiotic micro-organisms into foodstuffs. First, the foodstuff must be in a form which is palatable to a consumer. Second, the probiotic micro-organism must remain viable during both preparation and storage. The second issue is particularly problematic for foods that are intended for extended shelf lives at room temperature storage such as ready-to-eat ("RTE") or breakfast cereal products. These cereal products, unlike fermented milks, are required to have long storage lives; for example at least a year while the cell counts for many probiotic micro-organisms may fall away completely within one or two days. This is particularly the case if the water activity of the foodstuff is above about 0.5.

[0007]Therefore there is a need for a ready-to-eat cereal product which contains a probiotic micro-organism, is highly palatable, and which is storage stable.

[0008]Fortunately, the art includes numerous descriptions of various encapsulation technologies whereby viable probiotic organisms are encapsulated in matrixes of various formulations comprising starches and/or lipids often with supplemental exotic ingredients. However, the methods of preparing such encapsulated pro-biotics are, in general, complicated often involving two or more levels of encapsulation.

[0009]Accordingly, there is a continuing need for new encapsulated probiotic compositions that can be prepared by following relatively simple methods of preparation. Also, there is a need for encapsulated pro-biotic compositions that do not require selection of exotic or expensive ingredients. There is a need for such products to provide encapsulated viable pro-biotic cultures that can be stored for extended times at uncontrolled or room temperatures that nonetheless provide high levels of viable culture counts.

[0010]Whether or not real or scientifically substantiated, there is also an increasing belief in the health benefits from cocoa products including chocolate. Phytochemicals called flavonoids that are found in cocoa are believed by some to provide two positive effects. One, the antioxidants mitigate arterial damage caused by free radicals. These unstable free radicals may damage the arterial walls by blocking the artery wall lining. The second indicates, that chocolate inhibit platelet aggregation which could cause a heart attack or stroke.

[0011]There have also been studies indicating that cocoa flavonoids relax the blood vessels which inhibit an enzyme that causes inflammation.

[0012]There is also a need for food products such as shelf stable products such as candies or Ready-to-eat or breakfast cereals that include such encapsulated pro-biotics that can be made in mass quantities are commercially practical prices for use as nutritionally fortified products coated

[0013]Surprisingly, the above needs can now be satisfied employing a chocolate or cocoa butter to encapsulate freeze dried viable pro-biotic cultures prepare by easily practiced method of preparation techniques. The chocolate or cocoa butter encapsulates the probiotic cultures. The culture loaded chocolate or cocoa butter can be applied to or otherwise incorporated into any number of dried food substrates such as RTE cereals, cookies, candies, to provide dried culture fortified food products. These dried culture fortified food products provide nutritionally significant quantities of viable pro-biotic cultures for the expected extended shelf lives of the shelf stable food product.

BRIEF SUMMARY OF THE INVENTION

[0014]In one product aspect, the present invention provides chocolate or cocoa butter compositions that include and encapsulate high levels of viable live probiotic cultures. The chocolate or cocoa butter encapsulated pro-biotic comprise a chocolate or cocoa butter and sufficient amounts of freeze dried, viable probiotic cultures such as to provide at least 10.sup.3 to about 10.sup.9 colony forming unit's ("cfu") per gram. The chocolate or cocoa butter encapsulated pro-biotic has minimal

moisture such as to provide a water activity ("A.sub.w") of less than about 0.3. The chocolate or cocoa butter includes a cocoa butter fat ingredient, and a sugar ingredient in a weight ratio range of about 10:01 to about 10:50. The freeze dried culture is homogenously dispersed throughout the cocoa butter fat composition. The cocoa butter fat a melting point of about 25-45.degree. C. (77-113.degree. F.).

[0015]In another product aspect of one and the same invention, food products are provided comprising a food base and the chocolate or cocoa butter encapsulated pro-biotic as a coating or portion or phase of the food product. The food base can include the chocolate or cocoa butter encapsulated pro-biotic as a topical coating or phase or portion. The food base or foodstuff is dried and has a water activity ranging from about 0.1 to about 0.35. The weight ratio of food base to chocolate or cocoa butter encapsulated pro-biotic ranges from about 100:1 to about 100:400. The pieces of the coated food base can be admixed with pieces of uncoated dried food base of the same or different composition to provide desired levels of pro-biotic fortification.

[0016]In its method of preparation aspect, the invention provides methods for preparing coated food comestible with an inoculated chocolate or cocoa butter coating, comprising the steps of:

[0017]Providing a melted chocolate or cocoa butter, comprising: [0018]A cocoa butter fat having a melting point ranging from about 25-45.degree. C. (77-113.degree. F.); [0019]Sugar; and, [0020]Having a temperature of 50.degree. C. (122.degree. F.) or less, [0021]A water activity of 0.3 or less, [0022]Admixing sufficient amounts of freeze dried viable pro-biotic culture to form a homogenously inoculated melted chocolate or cocoa butter having 10.sup.3 to 10.sup.9 colony forming units per gram; [0023]Applying the inoculated melted chocolate or cocoa butter to at least a portion of a comestible base to form a coated comestible base having an inoculated chocolate or cocoa butter coating in a weight ratio of comestible base to inoculated coating ranging from about 100:1 to 100:400; and [0024]Cooling the coated comestible to below the melting point of the cocoa butter fat of the chocolate or cocoa butter to form a chocolate or cocoa butter coated comestible having encapsulated viable pro-biotic cultures.

DETAILED DESCRIPTION OF THE INVENTION

[0025]The present invention relates to live or viable cultures such as yogurt and/or probiotic cultures encapsulated in a chocolate or cocoa butter or loaded chocolate or cocoa butter, to dried food products such as cookies, candies, to provide dried culture fortified food products coated with or containing such chocolate or cocoa butter, and to their methods of preparation.

[0026]The invention provides a dried, ready-to-eat food product in the form of a that includes a coating or filling. The coating or filling contains a probiotic micro-organism. The probiotic micro-organism may be selected from one or more micro-organisms suitable for human or animal consumption and which is able to improve the microbial balance in the human or animal intestine.

[0027]Throughout the specification and claims, percentages are by weight and temperatures in degrees Centigrade unless otherwise indicated. Each of the referenced patents is incorporated herein by reference.

[0028]The principal ingredient of the present fat encapsulated viable cultures is a cocoa butter or a cocoa butter based food such as chocolate. Cocoa butter, of course, is the ivory-colored natural fat of the cocoa bean extracted during the manufacturing process of producing chocolate and cocoa powder. Chocolate or cocoa butter are well known confectionery and food materials art and a wide variety are commercially available. In preferred form, the cocoa butter is pure, i.e., not admixed or blended with other confectionary fats of non cocoa bean origin.

[0029]Chocolate or cocoa butter materials useful herein comprise a solid cocoa butter fat (i.e., a cocoa butter fat that is normally cocoa butter fat at room temperatures), and a sweetening ingredient typically sucrose. In preferred form, the present chocolate or cocoa butter can comprise about 20% to 50%, preferably about 23% to 35% of the chocolate or cocoa butter of a cocoa butter fat ingredient.

[0030]The chocolate or cocoa butter materials useful herein can additionally include a nutritive carbohydrate sweetening ingredient in dry powder form. Broadly, the weight ratio of cocoa butter fat ingredient to sugar(s) ingredient can range from about 10:01 to about 10:50. In preferred embodiments, the chocolate or cocoa butter material can include about 25% to about 75%, preferably about 60% to 70% of the sugar ingredient. Inclusion of such a sugar ingredient has been found to be surprisingly useful in improving the workability or ease of application of the compound coating to a substrate as well as increasing the palatability of products to which the chocolate or cocoa butter is applied or included. While sucrose is most commonly employed all or a portion of the sucrose can by substituted by other common sweeteners including fructose, dextrose glucose, corn syrup solids, maltose. Useful sugars can also include monosaccharides, disaccharides and their various

degradation products. Examples of the pentoses, xylose, arabinose, glucose, galactose, mannose, fructose, lactose, maltose, brown sugar, dextrose. The particle size of the nutritive carbohydrate sweeteners should be sufficiently fine such as to minimize any gritty mouthfeel. Good results are obtained with particle sizes of 1-100 micron, preferably less than 50 micron.

[0031]The chocolate can be a white chocolate or a dark chocolate. Cocoa butter is the base of white chocolate along with milk solids, sugar, vanilla and lecithin. The chocolate can be a dark chocolate and also include cocoa powder (e.g., Dutched cocoa) in amounts ranging from about 0.1% to about 10%, preferably about 3-8%.

[0032]If desired, the chocolate can additionally include mild solids typically non-fat dry milk solids. If present such milk solids can be present in amounts ranging from about 0.1% to about 25%, preferably about 5% to about 15%.

[0033]The chocolate or cocoa butter functions to encapsulate and protect viable pro-biotic cultures as well as to function as a convenient carrier for such pro-biotic constituents. The present loaded or fortified with viable pro-biotic culture chocolate or cocoa butter can comprise sufficient amounts of dried viable pro-biotic culture such as to provide about 10.sup.3 to about 10.sup.12 colony forming units pre gram ("cfu/g") of loaded chocolate or cocoa butter upon consumption. The probiotic micro-organism can be selected from one or more micro-organisms suitable for human or animal consumption and which is able to improve the microbial balance in the human or animal intestine. Such dried pro-biotic cultures are commercially available and are generally available in the form of freeze dried powders. Of course, some loss in the viability of the culture will occur during even good method of preparation practices as well as during distribution and storage. However, good results within the above cfu/g range are obtained when the fortified cocoa butter fat includes about 0.01% to about 0.1% of the freeze dried culture powder. In more preferred variations, the fortified chocolate or cocoa butter comprises sufficient amounts of dried viable culture to provide about 10.sup.6 to about 10.sup.9 cfu/g of chocolate or cocoa butter. In preferred form, the chocolate or cocoa butter can comprise about 0.015% to about 0.1% of freeze dried viable pro-biotic culture. Inmost preferred form the chocolate or cocoa butter can include about 0.01% to 0.03% freeze dried viable culture.

[0034]In preferred form the pro-biotic micro-organisms comprise or at least include at least one lactic and/or acetic acid bacteria, i.e., microbes that produce lactic acid, acetic acid and the like by decomposing carbohydrates such as glucose and lactose. In more preferred form, the cultures at least comprise one lactic acid forming culture. Morphologically, they are gram-positive, and are bacillus or micrococcus. They do not form an endospore, but are mobile. Physiologically, they are anaerobic, and are catalase-negative. The use sugar as the only source of energy. They convert sugar into lactic acid by 50% or more.

[0035]Categorically, the lactic acid bacteria includes: Lactobacillus, Leuconostoc, Pediococcus, Streptococcus and the like. Further they include bifidobacterium microbes which produce lactic acid by less than 50% of the glucose. Morphologically, the bifidobacterium belong to bacillus, and are grown into various kinds depending on the growing conditions. They are similar to the Lactobacillus, but they are acid non-resistant, and convert glucose into lactic acid and acetic acid at a ratio of 2:3.

[0036]The probiotic micro-organism may be selected from one or more micro-organisms suitable for human or animal consumption and which is able to improve the microbial balance in the human or animal intestine. Examples of suitable probiotic micro-organisms include yeasts such as Saccharomyces, Debaromyces, Candida, Pichia and Torulopsis, moulds such as Aspergillus, Rhizopus, Mucor, and Penicillium and Torulopsis and bacteria such as the genera Bifidobacterium, Bacteroides, Clostridium, Fusobacterium, Melissococcus, Propionibacterium, Streptococcus, Enterococcus, Lactococcus, Staphylococcus, Peptostrepococcus, Bacillus, Pediococcus, Micrococcus, Leuconostoc, Weissella, Aerococcus, Oenococcus and Lactobacillus. Specific examples of suitable probiotic micro-organisms are: Saccharomyces cereviseae, Bacillus coagulans, Bacillus licheniformis, Bacillus subtilis, Bifidobacterium bifidum, Bifidobacterium infantis, Bifidobacterium longum, Enterococcus faecium, Enterococcusfaecalis, Lactobacillus acidophilus, Lactobacillus alimentarius, Lactobacillus casei subsp. casei, Lactobacillus casei Shirota, Lactobacillus curvatus, Lactobacillus delbruckii subsp. lactis, Lactobacillus farciminus, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus reuteri, Lactobacillus rhamnosus (Lactobacillus GG), Lactobacillus sake, Lactococcus lactis, Micrococcus varians, Pediococcus acidilactici, Pediococcus pentosaceus, Pediococcus acidilactici, Pediococcus halophilus, Streptococcusfaecalis, Streptococcus thermophilus, Staphylococcus camosus, and Staphylococcus xylosus. The probiotic micro-organisms are preferably in powdered, dried form; especially in spore form for micro-organisms which form spores.

[0037]Preferred for use herein are cultures that include yogurt cultures such as Lactobacillus bulgaricus, Streptococcus thermiphilus, Lactobacillus acidopilus, and mixtures thereof.

[0038]It will be appreciated that the viable pro-biotic culture is combined with the chocolate or cocoa butter (as described in more detail below) while the culture is in a state of suspended animation or somnolence. That is, once freeze dried, the viable cultures are handled with care to minimize exposure to moisture that would reanimate the cultures since once reanimated, the cultures can experience high rates of morbidity unless soon cultured in a high moisture environment or medium. Likewise, the

cultures are preferably handled to reduce exposure to high temperatures (especially when combined with exposure to moisture) to reduce morbidity.

[0039]The present chocolate or cocoa butter are low moisture compositions (0.1% to 5%), preferably essentially moisture free (i.e., less than 0.5%) and importantly have a water activity ranging from about 0.1 to about 0.3. Selection of such low water activity chocolate or cocoa butter compositions is important to providing encapsulated culture compositions that provide high levels of viable encapsulated pro-biotic cultures at room temperature storage conditions for the expected 6-12 month storage conditions required for shelf stable food products distribution such as for breakfast cereals.

[0040]The chocolate or cocoa butter can additionally include adjuvants to improve the flavor, appearance and nutritional properties of the compound coating.

[0041]Useful materials include, for example, colors, flavors, high potency sweeteners (sucralose, or potassium acesulfame, and mixtures thereof. Alitame, neotame, saccharin and cyclamates can also be employed although, current food regulations do not permit usage of these sweeteners in certain products. Thaumatin can also be used and provides the advantage of flavor masking off flavors), preservatives, nutritional fortifying ingredients and mixtures thereof. If present, such optional materials can collectively comprise from about 0.01% to about 25% by weight of the present products, preferably about 1% to 10%. One common ingredient is ordinary table salt or sodium chloride.

[0042]In embodiments, the present products comprise a calcium ingredient of defined particle size in an amount effective to provide the desired calcium enrichment. The present food products find particular suitability for use in the inclusion of or topical application to in child oriented products such as candies and Ready-to-eat cereals. Children are in particular need of additional calcium. Good results are obtained when the present aerated confectionery compositions comprise sufficient amounts of calcium ingredients to provide the total calcium content of the composition to from about 50 to 2500 mg per 28.4 g (1 oz) serving (dry basis) (i.e., about 0.15% to 10% by weight, dry basis) of calcium, preferably about 100 to 1500 mg calcium per 28.4 g (1 oz.), and more preferably about 200 to 1500 mg calcium/oz.

[0043]Useful herein to supply the desired calcium levels are calcium ingredients that supply at least 20% calcium. Preferred for use herein are calcium ingredients selected from the group consisting of food grade calcium carbonate, ground limestone, calcium phosphate salts and mixtures thereof.

[0044]More preferably, any insoluble component such as mineral fortifying ingredient (e.g. calcium carbonate or a calcium phosphate salt for calcium fortification) is added in the form of a fine powder having a particle size such that 90% has a particle size of less than 15 micron, preferably 10 .mu.m or less in size and for best results under 2 microns.

[0045]Flavor ingredients can include any cocoa butter fat soluble flavorant especially vanilla and various citrus and/or mint flavors. Of course, certain ingredients, e.g., calcium carbonate, can provide not only nutritional properties but also improve color.

[0046]The chocolate or cocoa butter substrate preferably contains antioxidants (e.g. about 1-400 ppm of the cocoa butter fat ingredient) as a preservative to reduce the action of oxygen on sensitive micro-organisms.

[0047]The chocolate or cocoa butter encapsulating the micro-organisms of the present invention formulated as described above finds particular suitability for use as an easy and cost effective way of delivering viable cultures in a dry ready-to-eat product. Accordingly, in one aspect, this invention provides a dried, shelf stable product comprising a dry coating or filling coca butter based and containing a probiotic micro-organism as a useful intermediate product.

[0048]In another product aspect of the present invention, food products are provided comprising a food base and the chocolate or cocoa butter encapsulated pro-biotic intermediate product as a coating or portion or phase of the composite food product. The food base can include the chocolate or cocoa butter encapsulated pro-biotic as a topical coating or phase or portion. The food base or foodstuff is dried and has a water activity ranging from about 0.1 to about 0.35. The weight ratio of food base to chocolate or cocoa butter encapsulated pro-biotic ranges from about 100:1 to about 100:400. The pieces of the coated food base can be admixed with pieces of uncoated dried food base of the same or different composition to provide desired levels of pro-biotic fortification. For example, a chocolate encapsulated viable cultures at high levels can be formed into shaped and sized ships (e.g., having a piece count of about 0.5-100/g) such as are commonly used as a candy. These fortified pieces can then be blended with pieces of equivalent shape, size, color, etc. that are unfortified to provide an overall blend having desired levels of fortification per unit weight. Also, the fortified chocolate can be formed into suitably sized and shaped pieces such as conventional chocolate bars and other candies, e.g., truffles, or chocolate coated peanuts or raisins. Of coarse any number of candy bar products comprise a confectionary base or core that are enrobed or chocolate coated. In still other variations, the

chocolate encapsulated dried active culture can be formed into a variety of shaped and sized pieces per se. The chocolate can also be admixed with crisp pieces such as crisp rice pieces and the admixture formed into bars or slabs.

[0049]The present compound coating encapsulated microorganisms find particular suitability for use as a phase or portion or layer, especially a coating, for shelf stable food base such as ready-to-eat or also referred to as breakfast cereals. While in the present description particular attention is such RTE cereal products, the skilled artisan will appreciate that the present invention finds utility in a wide variety of dried (i.e., having an Aw ranging from about 0.1-0.35) shelf stable ready-to-eat composite products (or "comestibles" herein) intended to be distributed and sold at room temperatures. Such comestibles can include biscuits, cereal bars, candies, cookies, dried fruits, fried grain based snacks, nuts, pretzels, popped popcorn and mixtures thereof intended for human consumption.

[0050]Breakfast cereal products are well known and the art is replete with references that describe their formulation and methods of preparation. Generally, such products are prepared from dried cooked cereal or gelatinized starch doughs. The doughs include one or more these starch ingredients. Suitable starch ingredients are, for example, grain flours such as corn, rice, wheat, beets, barley, soy and oats. Also mixtures of these flours may be used. The flours may be whole flours or may be flours which have had fractions removed; for example the germ fraction or husk fraction may be removed. Rice flour, corn flour and wheat flour are particularly suitable; either alone or in combination. The starch source will be chosen largely on the basis of the nutritional value, palatability considerations, and the type of cereal product desired.

[0051]The cooked cereal dough can include one or more ingredients intended to improve the appearance, flavor or nutritional properties such as vitamins, minerals, flavoring agents, coloring agents, antioxidants.

[0052]If desired, sources of insoluble fiber may also be included; for example wheat bran, corn bran, rice bran, rye bran and the like. Further, if desired, a source of soluble fiber may be included, for example, chicory fibers, inulin, fructooligosaccharides ("FOS"), soy oligosaccharides, oat bran concentrate, guar gum, carob bean gum, xantham gum, and the like. Preferably the soluble fiber selected is a substrate for the micro-organism selected, or such that the soluble fiber and micro-organism form a symbiotic relationship for promoting beneficial effects. The maximum level of soluble fiber is preferably about 20% by weight; especially about 10% by weight. For example, for pet foods, chicory (an inexpensive source of inulin) can be included to comprise about 1% to about 20% by weight of the feed mixture; more preferably about 2% to about 10% by weight.

[0053]Depending upon the desired form of the cereal product, the starch content of the feed mixture may be varied. For example, for an expanded cereal product, the feed mixture preferably includes up to about 80% by weight of starch. However, for a flaked product, it is not necessary to use large amounts of starch in the feed mixture since it is possible to flake an unexpanded product.

[0054]It has been found that chocolate or cocoa butter encapsulated probiotic micro-organisms remain viable for extended periods of time when formulated into a coating on or as a filling in a dried RTE cereal product. This is surprising since probiotic micro-organisms ordinarily die off rapidly. This is particularly the case for dried, cooked foods which generally have a water activity of above about 0.5; levels at which probiotic micro-organisms ordinarily die off rapidly. Therefore the invention offers the advantage of a ready-to-eat cereal product which is highly palatable and which contains a shelf stable source of probiotic micro-organisms.

[0055]The food base can be in the form of a breakfast cereal, or a convenience food such as a cereal bar or a loose aggregation of disparate particulates of possibly more than one type. For human foods, the food base is a breakfast cereal fabricated from a cooked gelatinized starch matrix or cereal dough and is preferably in the form of flakes, shreds, biscuits, squares and puffed pieces. Especially preferred for use herein are flakes fabricated from cooked cereal coughs, e.g., corn flakes and/or wheat flakes. The gelatinized matrix is preferably produced by extrusion cooking a starch source which can optionally include minor amounts of one or more protein ingredients. Due to the popularity of chocolate for children, in the preferred embodiment not only is the chocolate coating a dark chocolate but also the food base, especially the ready-to-eat cereal food base, is also chocolate flavored. In one variation, the chocolate breakfast cereal base is formulated to include itself a sweetener. Since fabrication of puffed breakfast cereals are difficult to fabricate with sugar levels higher than 15% of the base, in certain variations, the cereal base can be formulated to include a high potency heat stable sweetener such as sucralose and/or acesulfame.

[0056]In one preferred embodiment, breakfast cereal flakes are provided with an exterior coating on at least a portion of their surface of the compound coating encapsulating the dried viable microorganisms. In more preferred form, the flakes are provided with a coating on at least one major surface and preferably on both major surfaces to encase the flake in the coating.

Method of Preparation

[0057]In a further aspect, this invention provides methods for preparing food comestibles including an inoculated chocolate or cocoa butter coating.

[0058]The methods can include a step of providing a low moisture (A.sub.w.ltoreq.0.3) melted compound homogeneously admixed with dried pro-biotic cultures. As described above, the chocolate or cocoa butter includes a cocoa butter fat constituent having a melting point ranging from about 25-45.degree. C. (77-113.degree. F.). The chocolate or cocoa butter can be heated to its melting point or slightly above (i.e. preferably mono more than about 5.degree. C. (41.degree. F.) above its melting point) to provide a melted chocolate or cocoa butter. In other less preferred variations, chocolate or cocoa butter having lower melting points (e.g., up to 30.degree. C. (86.degree. F.)) can be heated up to about 50.degree. C. (122.degree. F.) before admixture with the dried culture. In a preferred variation, the culture is a freeze dried culture. Also, preferably the culture is chilled to below 10.degree. C. (50.degree. F.) prior to admixture with the melted cocoa butter fat. Importantly, the chocolate or cocoa butter is low in free moisture (i.e., A.sub.w.ltoreq.0.3) so as to minimize exposure of the dried viable culture to minimize the waking up of the culture from its somnolence state. The dried culture is admixed to the melted cocoa butter fat along with any supplemental ingredients such as lactic acid (for flavor) to form. In preferred form, this step can include the sup-steps of proving a melted chocolate or cocoa butter, and admixing therewith sufficient amounts of freeze dried viable pro-biotic culture are admixed to form a homogenously inoculated melted chocolate or cocoa butter having 10.sup.3 to 10.sup.9 colony forming units per gram.

[0059]Thereafter, the methods can include a step of combining the melted chocolate or cocoa butter admixed with the viable dried culture with a dried food base (i.e., having an A.sub.w ranging from about 0.1 to 0.35) to form a warm composite food comestible. In preferred variations, the food base includes quantities of RTE cereal pieces especially in flake form. In a preferred practice technique, a quantity of RTE cereal flakes are fed to an enrober or other suitable coating device and a quantity of the melted chocolate or cocoa butter is applied to the RTE cereal flakes. In the confectionary art, this coating step is sometimes referred to as a "grossing" step. In a preferred variation, a the quantity of cereal flakes are provided having a temperature above the melting point of the chocolate or cocoa butter, e.g. warmed to about 40-60.degree. C. (104-140.degree. F.). To the warmed food base pieces, the melted chocolate or cocoa butter can be applied in the form of a spray to provide a topical coating of the melted chocolate or cocoa butter. Optionally, but preferably, the spray is assisted by applying the melted chocolate or cocoa butter through a spray nozzle with a co-spray of air. The mixture of warm food base and melted chocolate or cocoa butter is tumbled for time sufficient to provide an even coating of the chocolate or cocoa butter on the food base pieces. Good results are obtained, for example, when the tumbling is continued for about 20-40 minutes. The tumbling, of course, is to be practiced to balance the evenness of the resulting coating against the undesirable production of cereal fines caused by the tumbling action. In one variation, the weight ratio of chocolate or cocoa butter to food base can range from about 1:1 to about 4:1, preferably about 2.5:1 to 2.5: cocoa butter fat to cereal base. In one variation the flake has a thickness of 1 mm and a top coating of 1-2 mm and a bottom coating of like thickness.

[0060]In another example, the food base pieces can be fed into a fluidized bed onto which the melted chocolate or cocoa butter and pro-biotic culture mixture is sprayed thereon. Alternatively, the pieces can be fed into a rotary coater into which the mixture is sprayed. As a further alternative, the pieces can be caused to fall in a curtain and the melted chocolate or cocoa butter and dried culture coating mixture sprayed onto the curtain.

[0061]In other variations, the chocolate or cocoa butter with culture can be applied to only a portion of the food base. For example, the food base can be a cookies, a granola bar or other cereal bar having at least one upper major face or surface and to which the chocolate or cocoa butter is applied as a topical coating or as a line or pattern of coating. In another variations, the chocolate or cocoa butter is formed as a base layer to which granola or other food base is applied to form a two layer bar. In other variations, the food base includes RTE cereal pieces, e.g., biscuits having opposed major surfaces, to which the coating is applied to only one major surface. In still other variations, the chocolate or cocoa butter can be a filling layer or portion such as in a composite cookie having upper and lower cookie pieces, e.g., disks, with an intermediate filling layer provided by the chocolate or cocoa butter with viable culture encapsulated therein. For a filled cereal product, the mixture of the probiotic and micro-organism and melted chocolate or cocoa butter is filled into the central bore of each piece. It will be appreciated however that regardless of the application technique, exposure of the dried culture to moisture is to be minimized.

[0062]Thereafter, the present methods can provide a tempering step to allow the fortified chocolate coating to cool from the application temperatures (above the meting point of the constituent cocoa butter fat) of the grossing step to below the melting point of the chocolate or cocoa butter to solidify thereby forming a solid coating or portion on or in the food base. In a preferred form, the warm composite food comestible is allowed to temper at below about 25.degree. C. (77.degree. F.), and preferably between 10-20.degree. C. (50-68.degree. F.), for 50 to 400 minutes, preferably about 100 to 250 minutes to form a

chocolate or cocoa butter coated comestible having encapsulated viable pro-biotic cultures. In preferred form, the tempering step is practiced quiescently, i.e., without or with only mild agitation or movement.

[0063]Especially in those embodiments where the chocolate or cocoa butter forms an exterior coating, the present methods of preparation can further include a polishing step. The polishing step includes applying a polish coating to provide a polished or polish top coat to the chocolate or cocoa butter base coating so as to reduce abrasion loss of the chocolate or cocoa butter coating during any subsequent handling of the product. In a preferred variation, a polishing solution is applied to the tempered coated RTE cereal flakes whereby loss of the coating in the packaging or carton is reduced (i.e., to reduce "fines"). The polishing solution can be an oil slurry of starch having low moisture contents. The oil content can range from about 85% to 95% liquid edible oil (i.e., a lipid ingredient that is liquid at room temperatures), about 0-3% moisture, preferably about 2-3% moisture and the balance starch such as corn starch. In preferred form, the liquid oil is winterized to form a clear chilled oil. The oil/starch slurry is preferably applied chilled to under 20.degree. C. (68.degree. F.) and is applied to the still chilled tempered coated pieces in, for example, an enrober. Chilled conditioned air (e.g., 5-20.degree. C. (41-68.degree. F.)) is supplied to the enrober to remove the moisture, if any, associated with the polishing oil/starch slurry. The ratio of coated base to polishing slurry can range from about 100:1 to about 100:10, preferably about 100:2 to about 100:5.

[0064]The present methods of preparation can further include a sealing step. The sealing step includes applying a sealing coating to improve resistance to moisture pick-up. Improved resistance to moisture pick-up provides advantages of minimizing the loss of viable culture counts upon extended storage. In more preferred embodiments, the present methods include both the polish step and the sealing step. The sealing step includes applying a moisture barrier edible material to the polish coated chocolate coated food base.

[0065]In one variation, the sealing step involves applying an edible shellac to the polished chocolate or cocoa butter coated food base. For example, a sealing solution of edible shellac is dissolved in undenatured ethanol (at 10-30% solids). The shellac solution is applied chilled (0.degree. C.-20.degree. C. (32-68.degree. F.)) to chilled polish coating bearing chocolate or cocoa butter coated cereal base pieces. In preferred form, for convenience, the tempering, polishing step and sealing step are all performed in a chill room (0.degree. C.-20.degree. C. (32-68.degree. F.)). In other variations, the sealing or moisture barrier edible material can be those blends of edible shellac and other materials as are described in the patents to Seaborne, et al. ; namely: U.S. Pat. No. 4,710,228 "Edible Coating Composition And Method Of Preparation" (issued Dec. 1, 1987); or U.S. Pat. No. 4,810,534 "Methods For Preparing A Low Water Permeability, Edible Film" (issued Mar. 7, 1989); U.S. Pat. No. 4,820,533 "Edible Barrier For Composite Food Articles" (issued Apr. 11, 1989); or U.S. Pat. No. 4,874,618 "Package Containing A Moisture Resistant Edible Internal Barrier" (issued Oct. 17, 1989). The ratio of chocolate or cocoa butter coated food base to edible shellac blend can range from about 100:1 to 100:5.

[0066]Conveniently, the edible shellac sealing solution is applied to the same enrober after completion of the polish application step. Chilled or conditioned air is applied to or continued to remove or evaporate the alcohol.

[0067]The food base pieces are dried to a moisture content below about 10%. For breakfast cereals, moisture contents of about 1% to about 3% by weight are preferred.

[0068]The dried, ready-to-eat cereal product so prepared conveniently contains about 10.sup.4 to about 10.sup.10 cfu/g of the probiotic micro-organism of the dried cereal product; preferably about 10.sup.6 to about 10.sup.8 cfu/g of the probiotic micro-organism.

[0069]If desired, however, the coated RTE cereal product function as an intermediate product and the intermediate product can be blended with uncoated RTE cereal base. In a preferred technique, smaller quantities of coated comestible base pieces can be prepared in one facility or location, packaged in bulk and shipped to a second facility for blending with larger quantities of uncoated cereal base of similar or different cereals. In this manner, only a minority portion of the cereal is subjected to the coating operation (and the possibly of damage, e.g., the formation of fines during processing and shipment). For example, quantities of the dried coated pro-biotic culture containing cereal product can be blended with in a ratio of about 100:1 to about 100:1000, preferably about 100:100 to about 100:500. In more preferred form, the coated comestible base is packaged and shipped under refrigerated conditions to assist in providing high levels of culture viability in the intermediate. In this practice, the intermediate product is purposefully overfortified with culture such as to provide the finished blended product with desired levels of fortification. For example, if the intended finished product is desired to have about 2.times.10.sup.9 cfu/g, then the intermediate product can be prepared to have about 10.sup.10 cfu/g such that the intermediate fortified food product base can be admixed with unfortified RTE cereal base at a level of about 1:4 fortified base to unfortified base to provide a finished blended product having desired levels of culture.

[0070]The dried cereal product can further include additional added particulates such as dried fruit (e.g., raisins, dried berries and citrus fruits), nuts, other cereals, dried milk produce (such as dried yogurt etc) can be dry mixed with or agglomerated with the coated cereal. If desired, the dried cereal may be further coated with protective agents or flavoring agents, or both. This can also be carried out prior to or during coating or filling of the dried pieces with the mixture of the probiotic and micro-organism and carrier substrate provided that measure are taken to minimize exposure of the viable cultures to moisture that would awaken the cultures prematurely.

[0071]The culture fortified food products including RTE cereals are intended for distribution, storage and sale are room temperatures for extended times (up to nine months) while nonetheless providing high levels of viable culture fortification (although some loss over time of culture counts can be expected).

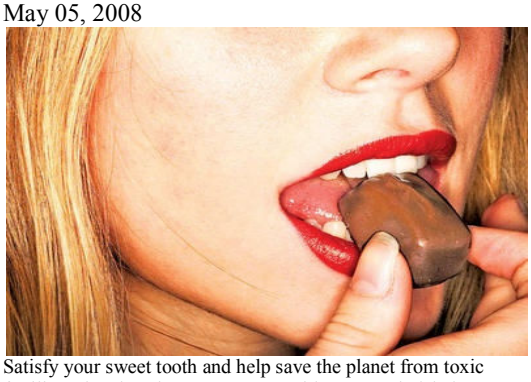
[0072]The amount of the dried, ready-to-eat cereal product to be consumed by the human or animal to obtain a beneficial effect will depend upon the size and age of the human or animal. However an amount of the dried, ready-to-eat cereal product to provide a daily amount of about 10.sup.6 to about 10.sup.12 cells of the probiotic micro-organism would usually be adequate.

[0073]While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

The ethical chocoholic

Metro Canda - Edmonton, Canada

May 05, 2008



Satisfy your sweet tooth and help save the planet from toxic fertilizers by choosing cocoa treats with an organic label.

Chocolate can be a guilty pleasure. But according to new scientific findings, a daily dark chocolate fix can lower blood pressure, reduce diabetes risk and even boost memory. It can also aid in preserving the world's dwindling rainforest.

Jewel of the rainforest

>> Cacao trees, the source of cocoa beans that are processed to make chocolate, are grown in tropical regions all over the world. These small trees thrive under the lush canopy of the rainforest where they obtain the correct amount of humidity, precipitation, shade, wind and nutrients. Along with coffee, cocoa beans are one of the few food crops that can coexist with a forest.

Unfortunately, cocoa beans can be grown in full sunlight as well as shade. For very poor cocoa farmers, the lure of increased income from higher yields is a strong incentive for them to pull out their axes and chop down trees, creating sunny plantations with little biodiversity in flora and fauna.

Ecological impact

>> Sadly, as world demand for chocolate grows, more cocoa is being grown on large, unshaded, monocrop plantations. This farming method not only destroys the dwellings of rainforest creatures but also degrades the conditions cacao trees need to grow properly. Why take such an ecologically devastating action? Because, in the short term, chemical-intensive cacao plantations produce more fruit pods.

That's bad news, not only for the farmers, but also for the macaws and monkeys who've lost their habitat. To counteract the effects of global warming, we need all the trees we can get.

Look for the fair trade logo

>> On the bright side, you can take a bite out of deforestation and put a few more dollars in farmers' pockets by choosing chocolate from sustainable sources of cocoa beans. Chocolate displaying the fair trade logo ensures cocoa farmers are reasonably compensated for their crop. This means they can afford to invest in health care, schooling for their children, and more Mother Nature-friendly agricultural practices such as planting native shade trees. An organic label on your sweet treat helps save the planet from toxic fertilizers and pesticides.

Production and Quality

Cameroon: ANAFOR launches Savanna Cocoa Mix Farming Project
AllAfrica.com, Washington
Lukong Pius Nyuylime
5 May 2008
Cocoa production in Cameroon's savanna zone is expected to receive an added boost as from July this year following the introduction of a new project by the Forest Development Support Agency (Agence Nationale d'Appui au Développement Forestier), ANFOR. The project which sets out to step up production and improve the revenue of growers in the region was presented recently in Yaounde to experts during the first ever Cameroon Forest Day.

"In order to reduce the rate of deforestation caused by cocoa growers to extend their plantations, we will, as from July this year, launch a new project which consists in planting cocoa together with other tree crops in the savanna zone in Mbam", Hortense Ngono, ANAFOR technical team member, said in her presentation. The Mbam Division, the pioneer region to host the project has humid characteristics made possible by its transitional position between the forest and savanna zones of Cameroon. "The humid nature of the region greatly favours the growing of cocoa plants", Ngono told participants. The project, she said, will greatly help in the fight against poverty by enabling farmers to grow a multiplicity of crops at a time and on the same farm. "Besides cocoa trees, farmers will be supplied with high yielding nurseries of avocado, plume, oil palm, coconut etc", she said

The new project, she said, has a duration of 30 years and will benefit 3,217 cocoa growers all belonging to 16 different farmers' unions. "ANAFOR will help farmers acquire land, train them on Mixed farming techniques and enable them to open plantations on over 1,700 hectares of land", she said. The first phase of the project ends in 2011 and the total cost is estimated at 2,154,000 Euros, about CFA 13 Billion.

ANAFOR was created in 2002 and has as mission to provide financial avenues and technical assistance for the implementation of Cameroon's forest development programme.

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Stakeholders discusses challenges facing farmers in Asante-Akim South
Accra Daily Mail, Ghana
May 06, 2008
A stakeholders meeting to discuss measures to address challenges facing farmers in the Asante-Akim South District has been held at Juaso.

The meeting, organised by the District Agriculture Development Unit of the Ministry of Food and Agriculture (MOFA), was aimed at devising pragmatic solutions to the numerous challenges facing farmers in the district and was attended by farmers, traders, processors and MOFA officials.

Prominent among the challenges identified were the lack of storage facilities, insufficient veterinary officers, high cost of labour as well as the lack of irrigation facilities for vegetable production. Other factors, which also took centre-stage in the discussions, were poor infrastructure, particularly road networks and the late release of inputs by government to farmers.

According to the participants, the problems had rendered most farmers handicapped, thereby affecting food production in the district.

The MOFA officials were entreated to take concrete steps to address the plight of farmers in the area by not only enhancing food production but also to encourage the youth to go into farming.

Mr Yaw Owusu Donkor, District Director of Agriculture, assured the farmers of the commitment of his outfit to address the situation and urged them to exercise restraint. He said in the face of the numerous challenges facing them, it was imperative for farmers to engage the services of agricultural extension agents to ensure higher yields.

Mr Albert Obour, District Co-ordinator of the Cocoa Disease and Pest Control (CADAPEC), implored cocoa farmers to ensure that their farms were sprayed four times a year to ensure higher yields. He urged them to monitor the activities of the spraying gangs of the Mass co

Netherlands EU's Largest Producer of Cocoa Butter
NIS News Bulletin, Netherlands
07/05/08
THE HAGUE, - The Netherlands is by far the most important producer of cocoa butter in the EU. In 2006, the Netherlands produced some 200 million kilos, worth more than 650 million euros, data from the Central Bureau for Statistics (CBS) show.

In 2006, the Netherlands imported nearly 450 million kilos of cocoa beans worth more than 550 million euros. The value of the extracted cocoa butter totalled 650 million euros. This is more than twice as much as the value generated in France, the second-biggest cocoa butter maker in Europe (320 million).

Most Dutch cocoa products are exported. The beans are imported mainly from Ivory Coast, Ghana and Nigeria. Imported beans are largely processed into chocolate and semi-finished products like cocoa butter and cocoa powder.

Although substantial, the Netherlands' cocoa beans import is smaller than its import of semi-finished cocoa products and chocolate, which had a total value of 800 million euro in 2006. In 2006, the Netherlands exported cocoa products with a total value of 2 billion euros. Cocoa butter and chocolate had the highest export value, both accounting for about 700 million euros.

Dutch consumers spent nearly 600 million euros on chocolate products in 2006. The average Dutchman ate 4.75 kilos of chocolate, over 100 grams more than in 2005.

Nigerian Cocoa-Bean Exports Jump 27% in First Quarter (Correct)
Bloomberg
By Dulue Mbachu
May 7, 2008
(Bloomberg) -- Cocoa exports from Nigeria, the world's fifth-biggest grower of the chocolate ingredient, jumped 27 percent in the first quarter, the Federal Produce Inspection Agency said, without providing a reason for the increase.

Shipments climbed to 71,709 metric tons in the first three months of 2008, from 56,458 tons a year earlier, the Lagos-based agency said in a statement handed to Bloomberg News today. The data represents beans officially inspected and certified fit for export and don't take into account cocoa smuggled out of the country by exporters avoiding quality control checks and payment of duties, it said.

Nigeria ranks behind Ivory Coast, Ghana, Indonesia and Cameroon as the world's largest cocoa producer. Exports from the west African country rose to 140,148 tons last year, from 130,074 tons a year earlier, according to the agency. Output is forecast to rise to 173,000 tons in 2007-2008, compared with 160,000 tons the previous season, according to the International Cocoa Organization's Web site.

Following is a monthly breakdown of export data provided in the agency. Figures are in metric tons:

	2008	2007
January	33,904	31,186
February	28,103	19,791
March	9,700	5,480

To contact the reporter on this story: Dulue Mbachu in Lagos via Johannesburg at pmrichardson@bloomberg.net

Follow The Chocolate Tier

Sun-Sentinel.com, FL –

By Faye Levy | Tribune Media Services

May 8, 2008

A tier of chocolates (Staff Photo / May 7, 2008)

Have a look at the chocolate aisles in the supermarket and you'll see that chocolate isn't what it used to be. When I was growing up, there was milk chocolate for snacking, and unsweetened and semisweet squares for baking, as well as semisweet chocolate chips. Now we have a great number of selections. At good markets, you can choose between 60 percent, 70 percent or even 80 percent or higher dark chocolate. The percentage refers to how much pure cocoa bean the chocolate contains.

Chocolate is made from beans that grow in pods on the cacao tree in Central and South America and in Africa. The beans are roasted, and then their centers, called nibs, are ground to make chocolate liquor (which contains no alcohol). If the fat, known as cocoa butter, is removed from the chocolate liquor, what is left is cocoa powder.

The percentage of cacao means the proportion of chocolate liquor, cocoa butter and cocoa powder, which chocolate producers use in varying proportions. Sometimes it's labeled cacao mass or cocoa percentage. The higher the percentage of cacao, the deeper the chocolate flavor. When a percentage is included, "dark" has become the adjective of choice instead of semisweet and bittersweet.

Unsweetened chocolate is 100 percent cacao, and for most palates it is too bitter to be enjoyed on its own. White chocolate has a mild, sweet taste because it is made of cocoa butter, milk and sugar, and no cocoa powder. Although most consider chocolate accented with citrus, coffee, mint or other flavors eating chocolates, Maurice and Jean-Jacques Bernachon of the famous Bernachon Chocolaterie in Lyon recommend using them in desserts as well. In their book, La Passion du Chocolat, they make ganache with cinnamon chocolate, moka ganache with coffee-flavored chocolate, and even tea ganache from tea-flavored chocolate.

Mexican chocolate is a flavored chocolate generally used to make hot chocolate. Seasoned with cinnamon and sugar, it comes in six-sided bars and is less smooth than European and American chocolate. According to the Bernachons, Aztec Emperor Moctezuma liked cocoa's bitterness and added chilies to give it an even "wilder" taste. When the Spanish brought cocoa to the Old World, the Europeans added sugar to tame it. In our newfound appreciation of bitterness, some of us share Moctezuma's predilection. I've even found chocolates flavored with chilies.

In some specialty markets you can see chocolates with such names as Caraibe, from the Caribbean, or Manjari, from Madagascar, made by chocolate producers who, like wine makers, highlight the origins of their cacao beans. Cacao beans, like grapes and coffee beans, differ in flavor and quality depending on where they grow.

Some tout the merits of specific cacao varieties growing on one estate, like varietal wines made from grapes from a single vineyard. Valrhona, a French company, calls its top-of-the-line chocolates Grand Crus, the term that designates France's time-honored Bordeaux wines. Ghirardelli, an American company, gives advice on matching different chocolates with other foods and with beverages, similar to sommeliers' advice on pairing wine and foods.

Part of the reason for Americans' growing taste for dark chocolate might be the encouraging news from nutritionists. Our beloved snack can be good for us. But sugar and milk fat, which are found in generous proportions in white and milk chocolate, are not what the dietitian orders. The caveat is, chocolate in moderate quantities can be healthful, as long as it is dark chocolate — the darker the better.

The Market

DJ Liffe Softs: Coffee Up On Industry Buying, Cocoa Unchanged - market
Trading Markets (press release),
By Sarah McFarlane, Dow Jones Newswires
May 07, 2008
LONDON, May 07, 2008 (Dow Jones Commodities News via Comtex) -- -- Liffe's robusta coffee rose on small volumes of industry buying in quiet markets Wednesday, while cocoa was unchanged.

COFFEE

July robusta coffee traded up $5, or 0.2%, at $2,145 a metric ton, with 1,386 lots traded, as of 0953 GMT. Profit-taking over the last three sessions has kept downward pressure on the market. Industry has provided some underlying support, buying to take advantage of the lower prices. "Funds and speculators are still the main drivers of the market," and with their activity limited at the moment, the market isn't doing much, said a London-based broker.

New York's most-active arabica futures trade up 15 points, or 0.1%, at $1.3375 a pound, as at 0953 GMT.

COCOA

July cocoa was unchanged GBP1,474/ton, with 3,604 lots traded, as of 0954 GMT.

Cocoa continued its climb back towards its recent range, recovering from last week's sharp fall in price. "Chart wise we still have a way to return to the levels the markets were trading at last Thursday...but the markets are not far off and seemed to have returned to these levels with ease," said the Sucden daily report.

New York's most-active cocoa futures traded up $8, or 0.3%, at $2,734/ton, as of 0954 GMT.

DJ Liffe Softs: Cocoa down on Lackluster Trading; Coffee Rises - market
Trading Markets (press release),
By Sarah McFarlane, Dow Jones Newswires
May 08, 2008
LONDON, May 08, 2008 (Dow Jones Commodities News via Comtex) -- -- Liffe cocoa fell Thursday despite a strong finish to the previous session, while robusta coffee traded slightly higher.

COCOA

July cocoa traded down GBP11, or 0.8%, at GBP1,455 a metric ton, with 828 lots traded, as at 1029 GMT.

After a strong start to the week, where cocoa looked like it might rebound to last Thursday's levels, early in the session it was rangebound and trading light volumes. "The market has a bit of a negative tone," said a London-based broker, noting its inability to sustain recent momentum.

New York's most-active cocoa futures traded down $32, or 1.2%, at $2,650/ton, as at 1030 GMT.
COFFEE

July coffee traded up $4, or 0.1%, at $2,120/ton, with 1,285 lots traded, as at 1031 GMT.

Hovering just above Wednesday's fresh three month low of $2,096/ton, the July contract continued to trade below its recent range early in the session.

A stronger U.S. dollar has also weakened the market, said traders. "Industry has enough cover now...no one is going to buy it here so it's trading sideways," said a London-based broker.

Vietnam is understood to be withholding around 100,000 tons of coffee from the market, which is supporting prices, said the broker.

New York's most-active arabica futures trade up 5 points at $1.3113 a pound, as at 1032 GMT.

Processing & Manufacturing

Malaysia & Indonesia to cooperate in Jatropha Industry
Bernama, Malaysia
May 05, 2008
KUALA LUMPUR, May 5 (Bernama) -- Malaysia and Indonesia have agreed to cooperate in development of the jatropha industry under the ambit of renewable energy, the Plantation Industries and Commodities Ministry said Monday. The cooperation will cover research and development (R&D) activities related to agronomic practices, breeding of quality seeds and processing technologies, the ministry said in a statement.

This followed the third joint committee meeting on bilateral cooperation on commodities which was held recently in Bali, Indonesia. Plantation Industries and Commodities Minister Datuk Peter Chin Fah Kui led the Malaysian delegation while the Indonesian delegation was headed by the country's Agriculture Minister Dr Anton Apriyantono.

The jatropha industry is expected to grow rapidly in the coming years as oil from the jatropha curcas plant can be used to produce biodiesel. Malaysia and Indonesia at the meeting reaffirmed their earlier commitment to allocate six million tons of crude palm oil (CPO) for biodiesel production. "In this context both countries will encourage domestic utilisation of biodiesel in the related sectors," the ministry said.

At the meeting, both countries also agreed to assist each other in producing standard quality cocoa beans and cocoa products through various collaborations. "Cocoa production and processing in both countries should follow the Good Agricultural Practices to ensure that the cocoa beans and cocoa products meet the quality and food safety requirements of global consumers," the ministry said. "Both countries also agreed to promote enhanced participation of the private sector, taking into consideration of the social, economic and the environmental elements of the cocoa industry," it said.

For pepper, Malaysia and Indonesia agreed to enhance cooperation in development of the industry through exchange of information, development of organic pepper and product development as well as product quality by addressing issues related to cultivation and processing.

In addition, both countries agreed to participate in trade exhibitions in each other's country, the ministry said. In this effort, Malaysia will extend an invitation to Indonesia to participate in the Malaysia International Commodity Conference & Showcase (MICCOS) exhibition in July 2009 in Kuala Lumpur.

Area cocoa plant near completion
The Humboldt Industrial Park in Hazle Township home to Archer Daniels Midland Co. facility.
Wilkes Barre Times-Leader, PA
By Jerry Lynott jlynott@timesleader.com
May 10, 2008
HAZLE TWP. – As one phase of the project nears completion, another has begun with the hiring of workers at the Archer Daniels Midland Co. cocoa processing plant in the Humboldt North Industrial Park. The Decatur, Ill.–based agricultural products processor has been advertising for maintenance technician and production worker positions at the 500,000-square-foot structure.

The production facility at the heart of the $95 million project is expected to be operational by midsummer, said company spokeswoman Beth Ragan. When completed, the workforce at the facility will number around 210.

Two years ago the company announced the selection of the Humboldt site for the state-of-the-art production facility. The company had been looking to build somewhere within the Mid-Atlantic region in response to the growing demand for its products. It produces cocoa under the Ambrosia, De Zaan and Merckens brands used as ingredients in the candy and confection, beverage, baking and cereal, dairy and snack food markets, according to the company Web site.

The Humboldt plant will be ADM's sixth cocoa processing facility in North America. The closest is in Glassboro, N.J. The company also has facilities in South America, Africa, Europe, Asia and Australia. ADM indicated nearly all of the local jobs would be for hourly workers with a few salaried positions, according to a project overview provided to local governmental bodies in 2006.

Luzerne County, the Hazleton Area School District and the Hazle Township board of supervisors agreed to offer the company incentives to build through the Local Economic Revitalization Tax Assistance Act. The act, designed to encourage economic development, provides a tax-free period to companies that make improvements to real estate. The project, built on 77 acres in the park, is not located in a Keystone Opportunity Zone, which also offers tax abatements.

Business & Economy

Chocoholics go ga-ga for cocoa with a conscience
Cambridge Chronicle, MA
By Evelyn Ratigan/Correspondent
May 05, 2008
Cambridge - Chocoholics checked their Hershey's Kisses and Mars Bars at the door of Mariposa Bakery in Cambridge last Friday for a taste of environmentally and socially responsible chocolates.

For a tax-deductible door fee of $35, about 40 taste testers were treated to a plate of 10 different types of international organic and fair-trade chocolate and a choice of red wines, coffee, tea and hot chocolate. The event was cosponsored by EcoLogic, an organization that provides rural communities in Latin America with alternatives to deforestation, and the Alliance for Cultural and Economic Exchange.

"[Chocolate] releases the same chemical that you get from sexual activity or smoking marijuana, so take your pick," said Judy Logback, who founded the Kallari Association, an independent cooperative of Amazon cocoa producers and artists. Logback directed the tasting of organic and free-trade chocolates, two made by Kallari growers.

During the tasting, Logback gave a presentation and fielded questions from taste testers about the foundation's efforts to fight deforestation in Latin America, the chocolate-making process, and chocolate's health and other physical benefits.

Diane Carazas, a public health advisor from Ashland who said she "never can go back to Hershey's," said the tasting was a great opportunity to help out with conservation and to learn about chocolate and the rainforest.

The Alliance provided the chocolate for the testing, which was EcoLogic's first public fundraiser. Several "incredibly supportive" local businesses donated gift cards and gift baskets for the raffle, said Gabriela Artavia, EcoLogic's spokeswoman. Carol Madsen, president and founder of the Alliance, said she proposed the idea of a chocolate tasting to raise money and to teach people about "the distinctions of chocolate and what's happening in the rainforest." Madsen said she was interested in supporting EcoLogic because the groups' efforts will raise awareness and help those in the rainforest who would otherwise not have a chance for education or a way to make a sustainable living.

David Nicholson, a first-year graduate student at Brandeis University's Sustainable International Development program, said he heard about the event from a professor. Nicholson said he was always skeptical about the concept of fair-trade, but decided it was "cool to see that the process is genuine." He said a friend of his once lectured him about eating a commercial brand of chocolate popular in the U.K. "I didn't really listen, but maybe I should."

Malaysia eyes Ghana in bid to boost Cocoa Grind
Reuters
06/05/2008

Cocoa garden in Ghana. Photo by Longwayround.

Accra, May 5 - Malaysia wants to invest in cocoa processing capacity in Ghana to strengthen the Asian country's growing role as a leading grinder, a trade mission from Kuala Lumpur said on Monday during a visit to West Africa.

Ghana is the world's second biggest cocoa grower after neighbouring Ivory Coast and harvested a record 740,000 tonnes in the 2005/06 crop year. Ghana is keen to promote more local grinding to maximise revenues from the industry. "We consider Ghana a favourable and appropriate place to establish a joint venture in cocoa grinding," Nurmala Abdul Rahim, deputy secretary general at Malaysia's

Ministry of Plantation Industries and Commodities, told Reuters during a visit to Ghana's Cocobod cocoa regulator. "Our talks here will also centre on our plans to import more beans from Ghana," Rahim said. "Ghana is well known for high quality cocoa and it is part of our reason for coming." Cocobod has a monopoly on cocoa bean exports from Ghana.

Malaysia, whose output has slumped from a peak of 247,000 tonnes in 1990, now imports most of its cocoa from Indonesia, the world's third biggest grower with projected 2008 production of 570,000 tonnes. Malaysia imports 13 percent of its total grinding requirements from Ghana at present.

Ishmael Azhar, Director-General of the Malaysian Cocoa Board, said Malaysia had no plans to revive domestic cocoa production despite the high market price that the crop has attracted in recent years. "Our focus is to consolidate and expand grinding, we believe it is something that is going for us and we are glad to have Ghana which we can rely on to achieve this dream," he told Reuters. Delegates said no agreement had been struck, but they were scheduled to meet Ghana's finance minister during the visit to discuss tax incentives and related issues.

Candy merger could sate China's Chocolate Craving
Source: Reuters
07/05/2008
New York, May 6 - The merger of two famous U.S. candy companies should make it easier to distribute venerable brands like M&Ms and Snickers in China, where the craving for chocolate has grown with the country's wealth.

Last week, privately held Mars Inc. teamed up with billionaire Warren Buffett to buy the top chewing gum manufacturer Wm Wrigley Jr Co for $23 billion. The merger creates the No. 1 confectionary company in the world and increases M&Ms candy maker Mars' geographic base.

Chocolate confectionary retail sales in China reached $813 million in 2007 and were projected to climb 50 percent to $1.23 billion in 2012, Euromonitor International data showed. With China's sweet tooth and Mars' increased marketing clout, world cocoa supplies could tighten temporarily and elevate chocolate prices, analysts said.

As Wrigley has a bigger presence in the world's most populated country China, the merger was expected to give Mars a marketing boost, analysts said. "That should provide a very good growth vehicle for both of those companies as both being very mature companies, well-established industries," said Sterling Smith, vice-president with Futuresone in Chicago.

Smith said the merger could lead to a 5 percent increase in Chinese cocoa demand by the end of 2009. "With China's population being so huge, a 5 percent or 7 percent increase in demand is enormous. If we see two years of 5 percent increases in a row, we could be looking at disturbing prices, potentially," Smith said.

Sterling projected the new cocoa plantations that would be required to meet any increase in demand from China would take years to establish and become productive, causing large price increases.

Wrigley is the top confectionary company in China, which had an estimated population of 1.3 billion in 2007. Wrigley had a 9.7 percent company share in Chinese confectionary retail sales in 2006, according to Euromonitor. Mars is No. 5 for confectionary sales, at a 2.2 percent company share but it is the top chocolate company, accounting for 13.2 percent of chocolate retail sale value in China. This was a steady decline from 14.4 percent in 2001, Euromonitor data showed.

Western brands like M&Ms have done well in part by promoting their cartoon-like mascots as toys, said Matthew Crabbe, managing director of consumer research firm Access Asia. The merged company could create scale and added presence, using strength in one brand to promote others. But Crabbe warned that any consumer backlash against one brand also could hurt the others, although currently there are no negative associations with any of the brands.

Chinese cocoa products suffered a public relations blow last year, when many cocoa domestic grinders were reported to have been using cocoa shells rather than beans to make powder for coating in chocolate making, beverages and ice cream. ID:nSP151678

COCOA DEMAND SEEN INCREASING, BUT SLOWLY

New York-based commodities analyst Judy Ganes-Chase of J Ganes Consulting said it was too early for the market to bid up the price of cocoa in response to a possible increase in cocoa demand in China as a result of the merger. "It will increase but it's not a rapid-fire pace. Given the size of the population, even small percentages can add up to a lot of beans," Ganes-Chase said.

China's economy is rapidly growing and the standard of living for many has quickly improved. "Once you get a chance to enjoy the finer things in life, why should the U.S. have the monopoly on zits," said Jack Scoville, a vice-president for Price Group in Chicago. "Overall, demand for commodities in general, I expect to stay strong ... a lot of that is based on Far East demand and especially Chinese demand," Scoville said.

If chocolate continues to increase its popularity in Asia, there will be off-and-on shortages of cocoa over the next few years, he said.

Cocoa farmers in Ghana get a boost
Afrik.com, France
By Abwao Oluoch in Ghana
8 May 2008

Ishmael Musah has always wanted to ascend to the highest academic level available in Ghana but blames the death of his father, a former civil servant, and the lack of resources for slowing his ascent to university.

The 22-year old has tried for three years to save money to enable him pay his school fees, but the savings have always fallen short of the amount required to meet the cost of university education in Ghana, leaving him more demoralised.

But Musah has pegged all his hopes for getting a university education on a prosperous cocoa harvest this year out of a five-hectare cocoa farm that he inherited from his late father, thanks to a new initiative to raise cocoa yields across Ghana.
The United Nations Development Programme (UNDP), in collaboration with several donor organisations enjoying the funding of the Japanese government, have embarked on an ambitious anti-poverty plan in the hinterland of Ghana's cocoa-rich Ashanti region.

"My greatest desire was to continue with my education after I completed my senior high school but the continuation has become a problem, I think this is where our government should come in to assist needy cocoa farmers," said Musah. Ghana's cocoa farmers are barely able to meet their daily food needs despite producing hundreds of thousands of tonnes of one of the world's commercially-viable cash crops.

For 11 years, Musah and his father have been growing cocoa but the yield has often been disappointingly low, making it much more difficult for the farmers to cope. However, Musah sees a glimmer of hope among the cocoa farmers in Bonsaaso in Ghana's Amansie West District in the larger Ashanti region, which is the country's leading source of cocoa, but has remained largely 'deprived.'

The UNDP/Japan backed anti-poverty initiative, which targets a whole package of improvements in health care, education, infrastructure and agriculture productivity, is promising to change the fortunes of some 15,000 cocoa farmers in the Ashanti region.

Musah, using his education, has taken to the forefront of assisting other cocoa farmers to increase the crop yields by learning to harness better and fast-yielding varieties of cocoa to increase the crop production and speed up the poverty reduction plan. "I am a facilitator on how to plant new varieties of cocoa seedlings. I have been conducting training activities for several other farmers on how to care for these seeds because for myself, I have realised that I need 430 trees for every acre," he said.

UNDP is supporting the Millennium Villages Project, a pilot initiative on how best to save communities from the extreme poverty by empowering them to increase crop yields, increase access to health care and education.

The Ghana project was first piloted in 2006 among 10 different villages but has now extended to 30 others, covering about 400 square kilometers. The people in these villages each have a school, a community health-centre and some have vehicles donated to them. The vehicles are given to ease the transportation of essential crop produce to the market in an initiative also aimed at empowering the farmers to get in contact with the market. Ghana's small-scale farmers have over the years relied on the traditional seed varieties that mature after seven years and produce less output for every acre of the planted crop.

Isaac Kankam-Boadu, an agriculture Specialist working with the Bonsaaso-based Millennium Villages Project, says Ghanaian cocoa farmers have the capacity to triple their production if the right kind of farming skills were applied. "There is more hope for the Ghanaian farmers because as production increases and we support them to get hybrid seeds, their earnings would

definitely improve," Boadu said. The Millennium Villages Project, funded by a Japanese grant through the UNDP, allows the Ghanaian cocoa farmers to get a 50 percent subsidy on seedlings and key inputs.

Boadu said the project had trained 26 facilitators like Musah to offer key lessons to other farmers on how to increase the cocoa yields. "This is a practical approach to extension services. We know that the problem with cocoa farming has been weeding, which is required three times but is often not carried out or they do it once and not on time," Boadu explained.

Ghana is one of the world's leading producers and exporter of cocoa beans. However, the cocoa farmers are considered most deprived with the cocoa farms lacking access to the market, as the roads are impassable during heavy rainy seasons. In Ghana's Watreso village, 360 km west of capital Accra, another cocoa farmer, Kwassi Addai, laments the neglect of the cocoa farmers, even as they struggles to make ends meet. "With the nation and the plant, I am not in charge...I am powerless, I am not in control of the collection and distribution of the crop. It is the responsibility of the government to determine how they want to assist the farmer and manage the drop," said Addai, 30. He produces 10 bags of cocoa every season, which he sells at US$75 for every 64-kg bag.

Ghana exports 750,000 metric tonnes of cocoa to the international market yearly, mostly collected from farmers like Addai and Musah, but the government is aiming to produce more than one million metric tonnes this year, if disease curbs and better farming is applied. "We have carried out certain training programmes on how to maintain the seedlings, pruning and disease management. I weed my five acres on time with the help of community labour but I think the government should assist more," Musah said. He earns slightly more from his five acres and says the ''production is growing''. In the 2006/07 harvest, Musah collected 22 bags which he sold at US$55 dollars per bag.

Labour Issues

'Slave' story an important issue
Chilliwack Times, Canada
The Times
Friday, May 09, 2008

Editor:

We read with interest the article entitled "Think About Chocolate Slaves" published in the April 29 edition of your newspaper. This is an issue of great importance to all members of our association. Our trade association on behalf of the Canadian cocoa/chocolate industry, has been part of a major global industry strategy to bring about meaningful change in West Africa that includes the Ivory Coast. On an issue as important as this one, words (and numbers) matter.

While any instance of trafficked children or any form of abusive child labour is totally unacceptable, it is important to note that cocoa is grown on more than two million family-run farms in West Africa, most on small holdings of four to seven hectares in the Ivory Coast. Studies show that on the vast majority of these farms, children, like on most Canadian farms, help out as family members.

Without question, there are serious issues: children helping out instead of attending school, child injuries due to undertaking unsafe tasks and adherence to internationally acceptable labour standards. This brings us to the Harkin Engel Protocol. The article mentions that Nestle signed the Cocoa Protocol in 2001 and "by 2005, the company had failed to fulfill its promise. The chance of freeing these slaves has disappeared." This statement is without any foundation. In point of fact, the protocol never "disappeared" and is the force behind the development of an effective certification process that is driving ongoing, positive change in labour practices and responsible cocoa growing in West Africa.

By July, 2008, 50 per cent of the West African cocoa production will be certified as per the protocol with the assistance of NGO partners and the governments of Ghana and Ivory Coast. This includes an internationally accepted verification process. By the fall of 2009 certification will be deployed sector-wide. The challenge has been unprecedented: no other industry has ever developed a certification system involving a population base of 10 million people roughly a third the size of Canada's. The chocolate industry has provided financial and technical support to West African governments in the development of a sustainable and verifiable certification process as well as funding the development of remedial programs and a host of socio-economic community undertakings.

The CMAC and our members are also partners with the World Cocoa Foundation (WCF) working with West African cocoa farmers and their families in such endeavours as farmer field schools to educate farmers on safe, responsible labour practices while helping them earn more for their cocoa crops through better growing and selling techniques. Canadian civil society and CIDA have played a role.

We appreciate the opportunity of adding to this discussion and hope that this information provides you with some further insight into this most complex issue. To learn more about the work of the WCF we would suggest you visit www.worldcocoa.org. Also please visit the CMAC website www.confectioncanada.com and click on to "Responsible Cocoa Growing."

Thank you to the Chilliwack Times for writing about this important issue. We trust that our comments clearly establish that this is not a "hidden problem well kept" by any chocolate company and not only can "we do something about child labour" industry along with its governmental and civil society partners have undertaken unprecedented programs to eliminate abusive child labour practices. Our commitment must be, and is, holistic, sustainable and long term. *John Rowsome, President, Confectionery Manufacturers Association of Canada*

Others

Food prices change life for Ivorian cocoa farmers
Reuters
By Ange Aboa
May 7, 2008
GOGOKRO, Ivory Coast (Reuters) - Rising food prices are changing the diets and farming priorities of families in the fertile forests of Ivory Coast who make a living from cash crops like cocoa and coffee.

Peasant farmers, many of them immigrants from nearby countries, built the West African country into the world's top cocoa grower and the gem of France's former African empire in the decades following independence in 1960. Cocoa prices are good this season, with U.S. futures up by 50 percent in the past year. But they have failed to keep pace with surging world prices for basic foods like rice.

Ivory Coast is largely self-sufficient in maize and other common African starches like cassava, plantain and yams. But imported rice remains the staple for many Ivorians, and a doubling of world rice prices in the past year have pushed up local costs. These increases are especially hard on African families whose household income goes largely on food. Many farmers here already grow some rice for their own consumption, especially on wet low-lying land near rivers and streams that is unsuitable for cocoa and other crops.

State promotion and hefty subsidies briefly made Ivory Coast a net rice exporter in the late 1970s but commercial production waned due to economic problems and liberalisation. Today the country of 18 million people imports over half the rice it eats. "When there was no more support, everybody just grew it for themselves. But now rice has got so expensive, we will again start producing not just for ourselves but for sale, to get a little money," elderly farmer Augustin Kouakou told Reuters.

As he spoke in Gogokro village, 30 km (19 miles) northeast of the nominal capital Yamoussoukro, half a dozen women bent double in a waterlogged hollow, rhythmically plucking rice seeds from khaki sacks and plunging them deep into the muddy water. "We are not quitting cocoa, but we will do both because that way it will cost less to eat," Kouakou said.

BACK TO ROOTS AND BANANAS?

An estimated 6 million people depend to some extent on the cocoa industry for their livelihood, and higher prices for food crops are changing not only farming, but eating habits too. "My children are used to eating rice all year long," said Antoine Beli, a cocoa farmer near the second port of San Pedro. "We can't say we won't buy rice any more, but my wife and I can eat foutou, yam or plantain banana instead of rice, and save a little on buying rice," he said.

Foutou, a mixture of crushed manioc and boiled plantain, is one of the acquired tastes of Ivorian cuisine -- along with stewed agouti, or bush rat. "I can't ask my children to change just like that, but if they start eating foutou, yam and plantain once a week like us, they will get used to it and start to like it," he said.

Ivory Coast has large commercial plantations growing bananas and pineapples for export, and palm oil for cooking or industrial use, especially in southern coastal areas. But most cocoa and coffee is grown by smallholders, often in small fields carved out by hand from the lush tropical forest.

El Hadj Kimde Adama, who farms cocoa near the western town of Soubre at the heart of Ivory Coast's cocoa belt, said he had no choice but to grow more food if he was to feed his three wives and 20-odd children. "With prices so high, we're all going to start producing a bit of everything in our fields. For example, I have started doing a bit more maize and rice this year to sell some and keep the rest for myself," he said. "We will grow some ourselves, and buy only what we have to. Otherwise we won't make it through," he said.

Ghana: Roads Leading to Cocoa Communities to Be Tarred
Ghanaian Chronicle (Accra)
8 May 2008
Alfred Adams & Zam Samin
THE Regional Minister, Mr. Anthony Evans Amoah, has said that a total of 89 kilometres of roads,leading to cocoa communities in the Sehwi-Juaboso District of the region, would be constructed, and tarred by the close of this year.

Addressing a durbar of the chiefs and people of Essam, in the Juaboso District, the Regional Minister mentioned the Juaboso, Dadieso, Nkwanta Junction and Bonsukrom roads, as cocoa roads, which are to be tarred under the 2nd phase of the cocoa construction roads project.

The rest are Kwame-Bikrom, Adabokrom, Kum-Kwanso and Yaw-Matwa, all cocoa growing communities.

The Minister however announced that six communities would also be connected to the national grid, though he failed to mention the names of the communities.

On his part, Nana Ntaa Adu, Chief of Bonza and the Kwamuhene of the Sehwi Wiawso Traditional Area, appealed to the government to build a Teacher Training College in the Sehwi District, to square with other Districts, which could boast of Teacher Training colleges.

TIT BITS

(Source: Business Recorder – www.brecorder.com)

London coffee, cocoa and sugar jump
LONDON (May 07, 2008): London robusta coffee, cocoa and white sugar futures all surged on Tuesday as a rally in crude oil to record highs and a sagging dollar triggered widespread buying across commodities markets, dealers said.

US MIDDAY: coffee slips, cocoa mixed
NEW YORK (May 07, 2008): Arabica coffee futures trading on ICE Futures US inched down in early trade on Tuesday, while cocoa futures were mixed, with both markets experiencing quiet dealings. July arabica down 0.65 cent at $1.3195 per lb at 9:19 am (1319 GMT), dealing from $1.3185 to $1.334. The rest down 0.15 to 0.65 cent.

US MIDDAY: coffee, cocoa down
NEW YORK (May 08, 2008): Arabica coffee futures trading on ICE Futures US dropped about 2 percent in early trade on Wednesday, while cocoa slipped nearly 3 percent, on heavy pressure from the strong dollar. July arabica contract was down 2.20 cents or 1.7 percent at $1.314 per lb at 9:20 am (1320 GMT), trading from $1.3115 to $1.339. The rest down 1.95 to 2.30 cents.

London coffee, cocoa edge down
LONDON (May 08, 2008): London robusta coffee and cocoa futures slipped in moderate trading on Wednesday on profit taking and sluggish buying interest capped by a firmer US dollar, dealers said. London white sugar futures seesawed in light, choppy trade in sympathy with oil prices. Many traders were away from their desks for an industry gathering in New York culminating in a dinner later on Wednesday.

New York cocoa soars to end firm
NEW YORK (May 08, 2008): US cocoa futures settled sharply higher on Tuesday after a late-day buying spree marked by a bullish chart and fund buying that triggered buy stops. The surge came on the heels of the rallying crude oil market and faltering dollar, dealers said. "Oil's going up, so is cocoa.

London coffee jumps, sugar sags
LONDON (May 09, 2008): London robusta coffee futures closed higher on Thursday, tracking the rise in New York arabica futures which rallied on a smaller-than-expected Brazilian crop forecast, dealers said. London cocoa futures settled modestly higher, while white sugar ended lower driven by declines in raw sugar prices and crude oil, they said.

US MIDDAY: coffee firm, cocoa mixed
NEW YORK (May 09, 2008): Arabica coffee futures trading on ICE Futures US got a boost from top producer Brazil's 2008/09 crop estimate in early trade Thursday, which was below private estimates, while cocoa looked for direction in choppy action.

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