



# COPAL COCOA Info

A Weekly Newsletter of Cocoa Producers' Alliance

Issue No. 196

11<sup>th</sup> – 15<sup>th</sup> September 2006

## ICCO Daily Cocoa Prices

	ICCO daily price (SDRs/tonne)	ICCO daily price (US\$/tonne)	London futures (£/tonne)	New York futures (US\$/tonne)
11 <sup>th</sup> September	1057.24	1563.34	863.67	1515.00
12 <sup>th</sup> September	1058.92	1566.15	861.00	1515.33
13 <sup>th</sup> September	1067.64	1577.72	865.00	1529.33
14 <sup>th</sup> September	1059.98	1568.71	853.67	1522.33
15 <sup>th</sup> September	1051.51	1554.60	852.67	1505.33
<b>Average</b>	<b>1,059.06</b>	<b>1,566.10</b>	<b>859.20</b>	<b>1,517.46</b>

## Up-coming Events

- 15<sup>th</sup> International Cocoa Research Conference, 9<sup>th</sup> – 14<sup>th</sup> October 2006, San José, Costa Rica

### In the News:

- Cocoa May Decline ..... on Outlook for Ivory Coast and Ghana Crops
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## New Research Shows That Chocolate May Be Good For You

*Have you had your cocoa today?*

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

**Monday 11th Sept. 2006**

Month	Opening Trans	Settle	Change	Daily High	Daily Low	Volume
Sep 2006	814	812	-2	818	811	2,092
Dec 2006	849	848	-2	855	847	3,761
Mar 2007	868	865	-3	872	864	1,082
May 2007	884	878	-3	884	878S	199
Jul 2007	898	892	-3	898	898	44
Sep 2007	909	906	-3	909	907	338
Dec. 2007	917	916	-4	917	917	3
Mar-08		929	-4			0
May-08		938	-3			0
Jul-08		949	-2			0
<b>Totals</b>		<b>893</b>				<b>7,519</b>

**Tuesday 12th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	812	814	2	818	803S	6,334
Dec 2006	847	845	-3	849	838	4,076
Mar 2007	862	862	-3	862	856	1,004
May 2007	875	876	-2	875	870	847
Jul 2007	889	889	-3	889	885	418
Sep 2007	903	903	-3	903	899	260
Dec. 2007	913	914	-2	913S	910	167
Mar-08		927	-2			0
May-08		936	-2			0
Jul-08		946	-3			0
<b>Totals</b>		<b>891</b>				<b>13,106</b>

**Wednesday 13th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	812	815	1	815	809	20,708
Dec 2006	844	850	5	851	842	24,055
Mar 2007	862	866	4	867	859	2,978
May 2007	873	879	3	879S	872	490
Jul 2007	887	892	3	893	886S	74
Sep 2007	901	906	3	905S	900S	34
Dec. 2007	920	917	3	920	918	40
Mar-08		930	3			0
May-08		939	3			0
Jul-08		949	3			0
<b>Totals</b>		<b>894</b>				<b>48,379</b>

**Thursday 14th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	815	813	-2	817	806	2,706
Dec 2006	849	838	-12	852	837	5,669
Mar 2007	866	855	-11	867	855	893
May 2007	880	868	-11	880	868	117
Jul 2007	892	881	-11	893	881	1,177
Sep 2007	898	894	-12	898S	898S	45
Dec. 2007	911	904	-13	913	911	6
Mar-08		916	-14			0
May-08		926	-13			0
Jul-08	944	936	-13	944	944	5
<b>Totals</b>		<b>883</b>				<b>10,618</b>

**Friday 15th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	N/A	N/A	N/A	N/A	N/A	N/A
Dec 2006	837	837	-1	845	835	4,301
Mar 2007	855	854	-1	860	852	1,566
May 2007	867	867	-1	875	865	248
Jul 2007	880	880	-1	887	878	674
Sep 2007	892	893	-1	892	892	1
Dec. 2007		904	0			0
Mar-08		914	-2			0
May-08		924	-2			0
Jul-08		934	-2			0
Sep-08		943				0
<b>Totals</b>		<b>895</b>				<b>6,790</b>

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

**Monday 11th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	1400 <sup>B</sup> 1430 <sup>A</sup>	1413	-2	1420	1420	81
Dec 2006	1483 1487	1478	-2	1497	1475	3386
Mar 2007	1527 1528	1518	-2	1534	1515	409
May 2007	1548 <sup>B</sup> 1554 <sup>A</sup>	1542	-3	1553	1550	509
Jul 2007	1574 <sup>B</sup> 1582 <sup>A</sup>	1569	-3	1592	1575	71
Sep 2007	0 0	1592	-2	0	0	60
Dec 2007	0 0	1616	-2	0	0	0
Mar 2008	0 0	1641	-2	0	0	0
May 2008	0 0	1662	-3	0	0	0
Jul 2008	0 0	0	0	0	0	0
<b>Totals</b>		<b>1403</b>				<b>4,516</b>

**Tuesday 12th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	0 0	1412	-1	1398	1398	2
Dec 2006	1468 1473	1477	-1	1484	1464	4129
Mar 2007	1509 1510	1516	-2	1522	1505	984
May 2007	1535 1540	1540	-2	1545	1535	102
Jul 2007	1560 0	1567	-2	1560	1560	70
Sep 2007	1580 <sup>B</sup> 1585 <sup>A</sup>	1591	-1	1580	1580	185
Dec 2007	0 0	1615	-1	0	0	0
Mar 2008	0 0	1640	-1	0	0	0
May 2008	0 0	1660	-2	0	0	0
Jul 2008	0 0	1682	1682	0	0	346
<b>Totals</b>		<b>1570</b>				<b>5,818</b>

**Wednesday 13th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	1430 0	1434	22	1430	1430	1
Dec 2006	1472 1477	1499	22	1504	1472	5032
Mar 2007	1517 1518	1534	18	1540	1516	1023
May 2007	1536 <sup>B</sup> 1542 <sup>A</sup>	1557	17	1558	1550	355
Jul 2007	1563 <sup>B</sup> 1569 <sup>A</sup>	1584	17	1580	1580	63
Sep 2007	0 1593 <sup>A</sup>	1607	16	1610	1610	193
Dec 2007	1610 0	1628	13	1625	1610	21
Mar 2008	0 1642 <sup>A</sup>	1653	13	1663	1663	1
May 2008	0 0	1677	17	0	0	0
Jul 2008	0 0	1699	17	0	0	0
<b>Totals</b>		<b>1587</b>				<b>6,689</b>

**Thursday 14th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	1400 <sup>B</sup> 1450 <sup>A</sup>	1431	-3	1445	1445	8
Dec 2006	1500 1502	1488	-11	1503	1486	2336
Mar 2007	1536 1537	1523	-11	1538	1522	731
May 2007	1558 <sup>B</sup> 1560 <sup>A</sup>	1547	-10	0	0	0
Jul 2007	1584 <sup>B</sup> 1587 <sup>A</sup>	1573	-11	1577	1577	50
Sep 2007	0 0	1597	-10	0	0	25
Dec 2007	0 0	1620	-8	0	0	0
Mar 2008	0 0	1645	-8	0	0	0
May 2008	0 0	1667	-10	0	0	0
Jul 2008	0 0	1689	-10	0	0	0
<b>Totals</b>		<b>1578</b>				<b>3,150</b>

**Friday 15th Sept. 2006**

Month	Opening Trans	Settle	Change	High	Low	Volume
Sep 2006	0 0	0	0	0	0	3805
Dec 2006	1477 1482	1473	-15	1492	1471	853
Mar 2007	1514 1515	1508	-15	1521	1506	75
May 2007	1535 <sup>B</sup> 1540 <sup>A</sup>	1532	-15	0	0	26
Jul 2007	1558 <sup>B</sup> 1565 <sup>A</sup>	1557	-16	1560	1557	98
Sep 2007	1585 <sup>B</sup> 1590 <sup>A</sup>	1580	-17	1580	1580	35
Dec 2007	0 0	1602	-18	1614	1612	0
Mar 2008	0 0	1627	-18	0	0	0
May 2008	0 0	1649	-18	0	0	0
Jul 2008	0 0	1671	-18	0	0	
<b>Totals</b>		<b>1420</b>				<b>4,892</b>

**Spot Prices (US \$ per tonne)**

	11 <sup>th</sup> Sept.	12 <sup>th</sup> Sept.	13 <sup>th</sup> Sept.	14 <sup>th</sup> Sept.	15 <sup>th</sup> Sept.
Main Crop Ghana, Grade 1	1845	1844	1866	1855	1840
Main Crop Ivory Coast, Grade 1	1755	1754	1776	1765	1750
Main Crop Nigerian, 1	1736	1735	1757	1746	1731
Superior Arriba	1886	1885	1907	1896	1881
Sanchez f.a.q.	1700	1699	1721	1710	1695
Malaysian 110	1466	1465	1487	1476	1461
Sulawesi f.a.q.	1510	1509	1539	1528	1513
Ecuador Cocoa Liquor	2488	2486	2523	2505	2480
Pure Prime Press African Type Cocoa Butter	3867	3865	3922	3894	3854
10/12% Natural Cocoa Press Cake	808	807	819	813	805

Source: Cocoa Merchants' Association-

# News

## **Cocoa May Decline ..... on Outlook for Ivory Coast and Ghana Crops**

Sept. 13, 2006

(Bloomberg) -- Cocoa may fall in London, resuming a decline that has seen prices drop for three of the past four weeks, on speculation that production in West Africa in the coming season will exceed the previous harvest. The drop, which sent cocoa futures to a nine-month low last month, followed higher crop estimates by the International Cocoa Organization for Ivory Coast and Ghana, the world's two biggest growers of the beans used in chocolate. Higher output from the harvest that starts next month may end a two-year supply deficit. "I would say you're talking about a surplus" in the new season, said Sholom Sanik, a broker at Toronto-based Friedberg Mercantile Group, which invests in cocoa. "You can probably expect production to be a little higher because of good weather conditions."

Cocoa futures for December delivery fell 1 pound, or 0.1 percent, to 844 pounds (\$1,582) a metric ton at 9:58 a.m. in London on Euronext.liffe. The contract has dropped 6.4 percent since Aug. 10.

## **'Green' consumers push for organic cocoa**

By Catherine Boal

13/09/2006 - The burgeoning organic chocolate market is taking off thanks to an increase in ethical consumerism and the willingness of confectionery makers worldwide to exploit the trend. According to the Pesticide Action Network, cocoa is second only to cotton in its high use of pesticides, however organic production of the beans entails natural methods of pest control and has been praised for its contribution to sustainable farming. A general drive towards conscience-led eating has resulted in the confectionery market scrambling to keep up with ethical consumers, particularly in the chocolate sector where customers are becoming increasingly aware of the economic and environmental concerns surrounding cocoa production.

Last year, Cadbury Schweppes acquired the organic brand Green & Blacks which is now the UK's leading supplier of organic chocolate and, since 2003, has been sourcing its cocoa beans from co-operatives in Belize and the Dominican Republic. Marketing director Mark Palmer told confectionerynews.com: "It is more expensive to produce organic cocoa so for farmers the main concern is stability, a guaranteed order at a high price." But results at Green & Blacks are testament to the fact that consumers are willing to shell out more for organic chocolate – in the last four years, sales have grown from £10m (€14.8m) to £50m (€73.8m) According to Palmer the increase in support is part of a wider move to more ethical consumerism: "There has been a groundswell of support for green issues and a lot of consumers are tuning into environmental concerns. In the past, organic cocoa wasn't popular because there was a lack of an end user."

Market researchers Leatherhead International report that the UK organic chocolate market is the largest in the EU with sales of \$35m (€27.3m) in 2005. And the popularity of the chocolate in that country is continuing undiminished. A survey commissioned by the UK retailer Sainsbury's and published in August indicates that 11 per cent of Britons will buy organic chocolate and biscuits over the next month.

But it's not just the British market that is feeling the need to go organic – figures provided by Mintel's Global New Product Database (GNPD) show that 170 new organic chocolate products have been launched globally in the past year. These include organic Dark Chocolate Squares from Green & Blacks and orange flavoured truffles from Nestlé. However the Federation of Cocoa Commerce (FCC) chief executive Philip Sigley told confectionerynews.com that organic cocoa still has a long way to go worldwide, especially in the US where consumers are less keen to deviate from their normal confectionery choices. He said: "The organic market is quite small, demand is growing but it is still tiny at the moment. In the US, sales of organic chocolate are around \$8m – a very small percentage."

## **ADM expands European cocoa sector**

By staff reporter

13/09/2006 - Ingredients manufacturer Archer Daniels Midland (ADM) has increased its chocolate production in Europe with the takeover of a plant in England. The company has bought Classic Couverture from UK owners Edward Billington & Son. ADM did not comment on the terms of the agreement but local press reports indicate the price of the acquisition could have reached £10m (€14.7m)

US based ADM are a key supplier of the global confectionery industry, trading cocoa powder under the De Zaan brand name to bakeries, chocolate makers and sweet producers. President Mark Bemis said: "This acquisition provides a solid platform for ADM Cocoa's expansion in European industrial chocolate manufacturing, allowing us to better serve our customers' finished chocolate needs." "Classic Couverture's state-of-the-art manufacturing plant in Liverpool complements our existing facilities in Europe, allowing us to maximize synergies between operations." In addition to its advance in Europe, ADM is currently building a chocolate plant in North America which is due to begin production by mid 2007. Sales at the company, who are one of the world's largest processors of cocoa and own 250 processing plants, reached \$36.6bn (€28.8bn) for the fiscal year ending in June.

The Decatur-based company is also one of the world's largest processors of soybeans, corn and wheat, as well as a leader in the production of soybean oil and meal, ethanol, corn sweeteners and flour. Specialist chocolate manufacturer, Classic Couverture was bought by Billington & Son in 2000. Edward Billington & Son is one of the UK's largest private confectionery companies, its core business being its unrefined sugar sector.

### **From Ecuador to Madagascar, Premium Master Chocolatier Introduces Single-Origin Cocoa Bars**

Thursday September 14, 2006

Source: Lindt & Sprungli

STRATHAM, N.H., Sept. 14 /PRNewswire/ -- Lindt & Sprungli, creator of exceptionally crafted Swiss chocolate recipes, will introduce single-origin cocoa bars to its Excellence product line with the debut of the Origins Collection. The Collection, which includes higher percentage, dark chocolate cocoa bars originating from Ecuador and Madagascar, will be available at Lindt retail locations and Target stores nationwide in October. To expand the collection, Lindt will add a third bar sourced from Peru in early 2007. "Consumer interest and the upward momentum of the premium chocolate category are driving the emergence of single-origin chocolate," said Thomas Linemayr, CEO and President of Lindt USA. "The Origins Collection showcases Lindt's deep passion for craftsmanship, innovation and locating the world's finest ingredients."

Following the successful wine and coffee models, single-origin chocolate, or chocolate derived from cocoa in a select region, is exuberant and nuanced in flavor. The Excellence Origins Collection is available in two distinct flavor profiles, which are unique to each country:

\* Excellence Origins Ecuador 75% Cocoa Bar: Made from "Arriba" cocoa beans, which derive from the lowlands of the coast of Ecuador, the Excellence Dark Origin bar, combines fruity and nutty flavors.

\* Excellence Origins Madagascar 65% Cocoa Bar: Delicious with a full-bodied Orange Brandy, and made with "Sambirano" cocoa beans, which give the bar its vanilla flavor, the Excellence Dark Origin Madagascar bar derives from the northwest part of Madagascar.

Also new to the Excellence collection is the Intense Mint bar. Made with extra fine dark chocolate and cool mint, Excellence Intense Mint will debut in Lindt stores and select retail locations this September.

About the Excellence Collection

Lindt's Excellence Collection uses only the finest quality cocoa beans. Created especially for the chocolate gourmet, the collection reflects the company's 160 years of craftsmanship and expertise. Excellence is available at Lindt Chocolate stores and major retail and wholesale outlets nationwide. The Excellence Collection flavor portfolio consists of 70% Cocoa, 85% Cocoa, Intense Pear, Intense Orange, White with Coconut, Extra Creamy and Toffee Crunch.

About Lindt

Founded in 1845, Lindt & Sprungli is a global leader in the premium chocolate category, offering high-quality products in more than 80 countries. Lindt & Sprungli operates eight production facilities in Europe and the United States and employs 6,300 worldwide. Lindt USA operates more than 100 retail stores throughout the country and maintains wide distribution through extensive retail and wholesale channels. For more information on Lindt, visit <http://www.lindtusa.com>.

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### **DCE warns cocoa spraying gangs**

Nkwantaso (B/A)

Sept 17, 2006

GNA - Squadron Leader Benjamin Anane Asamoah (rtd), Dormaa District Chief Executive (DCE) has warned of stiff penalties for any cocoa sprayer or supervisor who would attempt to divert any chemicals meant for the cocoa spraying exercise. Such acts, he said, had the tendency not only to derail government policy but also to discredit the government, defeating the laudable objectives of the programme. The DCE gave the warning at a meeting with 90 spraying gang members and supervisors at Nkwantaso, near Kwaku-Anya in Nkrankwanta cocoa district to acquaint himself with their problems and how to address them.

Squadron Leader Asamoah acknowledged President J.A. Kufuor's personal commitment to seeing that the cocoa industry regained its glory in quality and production. He said the District Assembly and the district directorate of the Ministry of Food and Agriculture would collaborate to strengthen the process of monitoring and supervision of all segments of agriculture in the district to ensure that farmers received their fair share of technology and market.

The DCE called on farmers, opinion leaders and traditional authorities to support government efforts at revamping the agricultural sector and making Ghana self-sufficient in food and foreign exchange earnings. The chief cocoa farmer, Nana D.D. Opong, called on his colleague cocoa farmers to work hand-in-hand with the gangs to ensure maximum coverage of their farms. He appealed to government to add chemicals for 'Akate' during subsequent exercises to rid their farms of all pests and diseases. 17 Sept. 03

### **Rising output costs strains in Ghana's cocoa industry**

AFRICAN ECHO NEWS

Sunday 17. Sep 2006

Some private cocoa buyers in Ghana were struggling to break even as the rising production costs strained the infrastructure in the world's second largest producer of the crop, the head of a buyers' association has said. Output in the country increased from 500 000 tons in the 2002/3 season to 736 000 tons in 2003/4, leading to shortages in warehousing space and slower quality checks as Ghana's industry regulator, Cocobod, deals with the extra beans.

For those buyers who borrowed heavily to finance their cocoa purchases, any delay in their expected sales to Cocobod will massively hit their cash flow. "It has been extremely difficult for us to break even in the last two years. It hasn't been easy to buy and sell at the pace we want to," said Ali Basma, the president of the Licensed Cocoa Buyers' Association of Ghana. Cocoa buyers are a crucial part of Ghana's cocoa production chain, under which cocoa is bought from the farmer by private buyers and sold to Cocobod for export. Basma said that additional warehouses and a better relationship with the Cocobod management, under new chief executive Isaac Osei, should improve the trading conditions in the coming season.

The buyers' push to deliver their cocoa to Cocobod as fast as possible can put them on a collision course with the regulator's quality control division, which checks the cocoa when it's upcountry, and again for a second time at the port. And this means that cocoa can be rejected at the second check, forcing buyers to sort their beans again, part of stringent control measures that help Ghana demand a premium for its beans. "That double check standard really affects us. We want the quality to be preserved but not by making the buyers suffer for it," Basma said.



## New Research Shows That Chocolate May Be Good For You.

Nutritionists used to think that the health benefits of chocolate had more to do with remembering Valentine's Day than with preventing heart disease. With lots of fat and even more calories, chocolate had no healthful qualities whatsoever...or so they thought.

Scientists today, however, are subjecting brave volunteers to clinical trials of chocolate. Their goal: to find compounds in chocolate that fight heart disease, boost the immune system, and even make people live longer.

The current interest in chocolate follows the discovery that red wine appears to prevent heart disease. Four years ago, a couple of nutritionists investigating red wine decided to test some chocolate from a nearby vending machine. They discovered huge quantities of antioxidants, the same good-for-you chemicals in fruits, vegetables, wine, and tea. Since their discovery, candy companies such as Mars have sponsored scientists across the country in the pursuit of happiness and a healthful chocolate bar.

In the ensuing feeding frenzy, researchers have announced that chocolate contains more antioxidants than your favorite green and orange vegetables. This past February, a university group sponsored by Mars reported that, like aspirin, chocolate thins the blood, which helps prevent heart attacks. Mars also funded a nutritionist to investigate the historical use of chocolate as a medicine, perhaps searching for additional health claims. Scientists debate whether the chemicals in chocolate have a positive effect. But if the candy companies have their way, your doctor might someday prescribe chocolate for your health.

### Finding virtues in vice

The chemicals responsible for the buzz about chocolate and red wine are plant compounds bearing long and cumbersome names like polyphenols, flavonoids, and cyanidins. Most scientists simply use the name phenols. Plants make phenols to protect their cells from damage and disease (even sunburns). Fruits and vegetables are loaded with phenols, which protect the precious seeds inside. Many studies have shown that eating lots of fruits and vegetables seems to protect people too; they have lower incidences of cancer, heart disease, colds, and other illnesses.

It could be that fruits and vegetables have this effect because they contain fewer calories and fat than meat and dairy products. Researchers have shown that phenols seem to make a heart healthy, but the results don't prove that only phenols that fight heart disease. In the recently completed "Seven Countries Study," researchers analyzed the diets and diseases of several nations. They found that although people in France typically eat foods that are higher in fat, calories, and cholesterol than Americans, their hearts are healthier and their cholesterol levels are lower. The reason fewer people die from heart disease in France than in America? Authors of the study say it's copious amounts of red wine.

The deep red color and strong, sometimes even bitter taste of red wine come from the phenols in grapes. The phenols work their magic by preventing a chemical reaction called oxidation turns cholesterol into plaque on artery walls—hence the name antioxidants. This buildup is the most common cause of heart disease, and the French have been unwittingly protecting themselves by drinking red wine. Chocolate contains the same phenols as red wine.

So what exactly are phenols? Phenols are simple molecules, made of a few oxygen and hydrogen atoms. They course through the body, neutralizing molecules called free radicals that skulk around the bloodstream. Free radicals are missing an essential ingredient, an electron, so they try to scavenge electrons from cells. This damages the cells. Antioxidants contribute an electron in defense. The body has its own set of riot police to stop the radicals, but the system breaks down as the body ages. Scientists think the attacks by free radicals, and the damage they cause, leads to heart disease and some kinds of cancer, as well as the general deterioration of the body with age.

Like the antioxidants in red wine, the phenols in chocolate battle the oxidation reaction that lead to the buildup of plaque. This buildup narrows the arteries, slowly cutting off the oxygen supply—or strangling—the heart muscle.

## Chocolate as medicine

Humans have enjoyed red wine and chocolate for thousands of years, but probably not for their phenols. The agreeable effects of wine on the human body are well known, and the drink tastes pleasant. Chocolate beans, however, are extremely bitter, a taste associated with poisonous plants.

"You'd have to be pretty tough to sit down and chew these suckers up," University of California at Davis nutritionist Louis Grivetti says of chocolate. Mars sponsored his historical research of chocolate as medicine. Ancient Central American societies probably first used cocoa beans for their tannins, to tan animal hides and make leather. The tannins, which are another type of phenol, are acidic and soften the hides. The same tannins produce the tart taste and red color of wine and cranberries. Grivetti suspects that a dog or a child snacking on a garbage heap ate some of the beans leftover from the stewing process used to extract the tannins. When the nibbler didn't die, observant adults realized they could safely eat the beans. That first exploratory tasting led to an exciting discovery, Grivetti hypothesizes.

"Ancient societies exhaustively searched for and used mind-altering compounds," says Grivetti. "If you chew the bean, you do have a slight mental change." That change is due to caffeine and other stimulants.

The Olmec and other Mexican cultures used chocolate as a stimulant as far back as three thousand years ago, taken as a drink made from pulverized cocoa beans. The active ingredients producing this effect are caffeine, our favorite legal stimulant, and theobromine, its lesser-known cousin. Caffeine revs up the nervous system, suppressing tiredness, but theobromine affects other parts of the body. It dilates blood vessels and stimulates muscles, which may be why the Aztecs used it as nature's version of Viagra. The Aztec emperor Montezuma typically drank a special concoction called chocolatl before visiting his harem, and some newlyweds would share a cup of elixir before their wedding night. Notes taken by Spanish conquistadors show that chocolatl was a frothy combination of cocoa beans, spices, and honey.

Despite its stimulants, ancient and modern doctors prescribed chocolate as a tranquilizer. The calming and soothing effects are likely the results of amines, which mimic the actions of certain brain chemicals. One compound duplicates a hormone that produces the pleasurable feelings of love. In 1996, researchers from the University of California at San Diego reported the presence of another chocolate chemical that turns on a particularly interesting part of the brain—the same one activated by marijuana. Perhaps the hippies baking marijuana brownies in the 1960s actually hit upon this link.

Evidence for the length of humanity's devotion to chocolate comes from a small village in central Honduras. Chocolate is the reason why people have continuously occupied the village for more than three thousand years, says archaeologist John Henderson of Cornell University. Sites this old are rare in the Old World and even rarer in the New World. The village is located in the Ulua Valley, carved by a periodically flooded river. The reason people repeatedly rebuilt on top of their flood-ravaged homes was the lure of a rich supply of cocoa beans, says Henderson.

Pottery shards in the river silts come from finely made bowls common to the Olmec, a culture that flourished in communities far to the west of the village. "The pottery shares the shape and decorative style," says Joyce. The markings on the bowls indicate they held a drink for the elite of the Olmec society—the only people permitted to drink chocolate, says Joyce. She and Henderson think the Olmec traded the pottery for beans from plentiful cacao trees surrounding the village.

With all these historical uses, should it be a surprise that chocolate could have true disease-fighting properties? Chocolate not only hinders plaque buildup—new results show there is another line of attack. The phenols in chocolate actually thin your blood, thus inhibiting blood clot formation. Nutritionists from UC Davis reported these results in February at the annual meeting of the American Association for the Advancement of Science.

In a study led by UC Davis nutritionist Carl Keen, researchers gave human volunteers about a tablespoon of cocoa powder (provided by Mars), much like unsweetened baking cocoa you buy at the grocery store. The cocoa powder was mixed with water and a little sugar to take the bitter edge off the taste. Keen also gave subjects of this not so inhumane human trial water with caffeine as a control. He wanted to be sure caffeine wasn't affecting the blood. About two hours after the subjects drank the cocoa mixture, the levels of phenols peaked in their bloodstream, fading away after a total of six hours. That means the health benefits fade away too.

Although the effects are temporary, "we're quite excited by the data," says Keen. He explains that the health benefits of the blood thinning and clotting prevention are like those of aspirin. Many doctors prescribe aspirin to patients suffering from heart disease, since blood clots are the major cause of heart attacks. The clots get stuck in the narrow confines of plaque-clogged arteries. In addition, thinner blood is easier for world-weary hearts to pump. "The rather clear message is that with reasonable serving sizes we're seeing beneficial effects," says Keen. "People should not throw away their bottle of aspirin, but perhaps one should view chocolate as part of a healthy diet."

In a related study, UC Davis heart specialist Tissa Kappagoda found that chocolate makes blood vessel tissue relax. Using an extract made from cocoa beans, he immersed segments of rabbit aortas in a bath of water and cocoa extract to see if the tissue reacted to the extract. The relaxation was also touted as good for your heart, since the relaxation widens arteries and veins and could lower blood pressure. The results are preliminary, cautions Kappagoda. The effects may not be the same when the phenols have to go from the stomach to the bloodstream.

#### A lot of health in a little kiss?

Doctors now recommend a daily glass or two of red wine to their patients, but maybe they should be prescribing a little chocolate as well. It turns out that an average bar of dark chocolate contains more phenols than a cup of red wine, even more than a serving of beets, spinach and citrus.

"There's a couple of foods that fulfill the idea of a magic bullet, like tea and wine. Chocolate is one of them," says phenol expert Joe Vinson, a chemist at the University of Scranton in Pennsylvania. Vinson studies the phenol content of food. He's analyzed fruits, red wine, vegetables, even herbs and spices. "Chocolate just stands out, it's much higher than anything else," he says.

Late last year, Vinson made headlines when he published the results of his work on chocolate. He found that a 1.5 ounce serving of dark chocolate has about 1/5 teaspoon of phenols. A cup of red wine has half that amount. In terms of phenol content, dark chocolate offers four times more phenols than a beet and ten times as much as an orange. Milk chocolate has a little less than red wine, and instant hot chocolate mix has practically none, reports Vinson. The best way to get chocolate phenols is through unsweetened baking cocoa, he says. The cocoa has almost twice the amount of dark chocolate, with no added fat or sweeteners.

Despite all the remarkable things chocolate may do for the heart, scientists are still trying to figure out exactly how phenols interfere with diseases. "They may be wonderful, but we don't know why and we don't know how," says Gary Beecher, a member of the USDA's Food Composition Laboratory in Beltsville, Maryland. No one really knows how the phenols get from the stomach into the bloodstream.

Even Keen admits they can't prove that it's phenols like flavonoids that thin the blood. "We don't know for sure it's flavonoids," he says. "It could be other things in the chocolate," such as the high concentrations of copper and magnesium.

Another drawback for those who want to use chocolate as a health supplement is the fact that phenols don't stay in the bloodstream for long. Researchers at the Netherlands National Institute of Public Health showed that the concentration of the phenol epicatechin peaks in the bloodstream about two to three hours after eating chocolate. Phenols totally disappear after about six hours, a result supported by Keen's study. You'd have to eat chocolate morning, noon and night to get a lasting effect, an option only for extreme chocoholics. Phenols also tend to bind to proteins, which means that eating milk chocolate or hot chocolate made with milk could prevent the absorption of phenols into the bloodstream.

The lack of understanding isn't stopping candy companies from pursuing health claims, though. "Food companies are working on these things like crazy," says Vinson.

Health claims are great marketing tools. Quaker Oats, claiming its oatmeal lowers cholesterol, has turned around its sagging market, with more oats sold every year. Sales of Cheerios rose 13% in one year after General Mills received permission to say the cereal is healthful.

Despite claims to the contrary, could Mars really be funding chocolate studies for a purely scientific purpose? Probably not, since the company hired a public relations firm to handle the attention garnered by the results of

the UC Davis study. The future of chocolate may lie in enhancing its antioxidant properties until they outweigh the fat and calories. "The real reason candy companies are sponsoring this research is that they want to be able to put a label on candy bars that says that this bar contains antioxidants," says Beecher.

Already, chocolate bars in Japan advertise their phenol content in big letters on the front of the wrapper. According to a food industry newsletter, chocolate manufacturers are working on approval in Japan to promote the anti-aging effects of chocolate, and the U.S. isn't far behind. Someday, you may be able to accept that Valentine's gift with a pure heart, kept clean by chocolate.

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## TIT BITS

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### **US MIDDAY: cocoa softens**

NEW YORK (September 13, 2006): US cocoa futures finished a shade down Tuesday, though a flagging dollar glued prices to a two-week trading range, traders said. The New York Board of Trade's cocoa contract for December delivery settled off \$1 at \$1,477 a tonne after trading from \$1,464 to \$1,484. March shed \$2 to end at \$1,516 and back months declined \$1 to \$2.

### **US MIDDAY: cocoa advances**

NEW YORK (September 14, 2006): US cocoa futures landed on positive ground Wednesday, fuelled by speculative and trade buying amid bullish technical signals on the price charts and a softer dollar, traders said.

### **New York cocoa softer**

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### **Brazil cocoa arrivals fall**

SAO PAULO (September 14, 2006): Brazilian 2006/07 (May/April) cocoa arrivals from Bahia and other states totalled 1.82 million 60-kg bags by September 10, down 7 percent from 1.97 million bags a year ago, the Bahia Commercial Association said Wednesday.

### **US MIDDAY: cocoa futures dip**

NEW YORK (September 15, 2006): US cocoa futures dipped Thursday, pressured by light speculative selling in an otherwise quiet session marked by thin trading volume, traders said. The New York Board of Trade's cocoa contract for December delivery fell \$11 to settle at \$1,488 a tonne after trading from \$1,486 to \$1,503.

### **New York cocoa futures advance**

NEW YORK (September 15, 2006): US cocoa futures landed on positive ground on Wednesday, fuelled by speculative and trade buying amid bullish technical signals on the price charts and a softer dollar, traders said.