DATE: April 10, 2015
TO: Directors & Members
FROM: Rob Vandenheuvel, General Manager

MPC FRIDAY MARKET UPDATE

<table>
<thead>
<tr>
<th>CHICAGO CHEDDAR CHEESE</th>
<th>CHICAGO AA BUTTER</th>
<th>NON-FAT DRY MILK</th>
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Weekly Average, Cheddar Cheese

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Barrels

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DRY WHEY

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Barrels

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FRED DOUMA’S PRICE PROJECTIONS...

Apr 10 Est: Quota cwt. $15.54 Overbase cwt. $13.85 Cls. 4a cwt. $13.53 Cls. 4b cwt. $14.17

Last Week: Quota cwt. $15.55 Overbase cwt. $13.85 Cls. 4a cwt. $13.53 Cls. 4b cwt. $14.19

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MARKET COMMENTARY: (By Sarina Sharp, Daily Dairy Report, sarina@dailydairyreport.com)

Milk & Dairy Markets

It is always disheartening to recollect 2009, but the milk powder market forced such a comparison this week. CME spot nonfat dry milk (NDM) prices dropped 4.75ȼ and closed at $0.93/lb. today, marking the spot market’s lowest level since August 2009. Traders were not deterred by the milestone; they exchanged 15 loads of NDM at the spot market, and options volume climbed.

The butter and cheese markets were much quieter. Spot butter gained 1.25ȼ and closed at $1.7525. Cheddar blocks dropped 0.25ȼ Monday and then held at $1.5775. Barrels gained 1.5ȼ and reached $1.61. Class III contracts settled a little higher than last Thursday. Most Class IV contracts posted double digit losses.

Overseas markets are fading, but domestic demand has been formidable. This divergence has allowed milk powder prices to wallow at multi-year lows, while cheese and butter prices are comparatively strong. Indeed, the cheese and butter markets have proven themselves able to shake off pressure from falling prices in Europe and Oceania.

Over the past three weeks, German and Dutch butter prices have fallen by more than €200/metric ton. After adjusting for butterfat and currency fluctuations, this amounts to a drop of roughly 14ȼ/lb. Over the same period, the weekly average CME spot butter
price has gained 6.7c. German cheese quotations have held steady in euro terms, but, due to the strong greenback, they are down more than 3c/lb. when priced in dollars. Meanwhile, weekly average Cheddar block prices have climbed 1.75c since late March.

Last year, the cheese and butter markets demonstrated their ability to hold strong in the face of a collapse in overseas prices. For much of 2014, U.S. inventories of cheese and butter were quite low. That is no longer the case. There was 5.3% more cheese in cold storage on February 28 than the year before, and stocks are building. Demand for cheese for immediate delivery has been robust, and manufacturers have been coy. This has helped to support nearby cheese prices. But milk trucks are lining up at cheese plants around the country, and at some point cheese makers will look to sell more aggressively. When they do, the U.S. cheese market is likely to come under pressure.

Butter supplies are far from burdensome, but manufacturers are adding to inventories now that Easter and Passover demand has passed. Lower milk output in California may help the butter market to avoid becoming oversupplied. With limited potential for exports, either butter production or prices will need to decline.

Today’s prices are not enough for dairy producers in areas with higher production costs. However, historically low feed costs and high beef prices have mitigated on-farm losses. Even in the drought-stricken West, alfalfa is around $65/ton cheaper than it was a year ago, and grain costs are notably lower as well. With the help of last year’s profits, dairy producers are likely to plod along, lamenting their smaller milk checks and slowly increasing cull rates. Contraction is likely, but it will be a long, drawn-out process.

For the week ending March 28, dairy producers culled 59,120 head. This was 2.4% greater than the same week a year ago. For the year to date, dairy cow slaughter is 3% ahead of last year’s pace. Culling in Region 9, which includes California and Arizona, is 12.6% greater than the first three months of 2014.

Grain Markets
May corn futures dropped to $3.77/bushel on Friday, down nearly a dime from last week. May soybeans closed at $9.515, down 34.5c. USDA updated its monthly World Agricultural Supply and Demand Estimates on Thursday. The agency reconciled its balance sheets with estimates from the recent Grain Stocks report, so this month’s revisions were widely expected and unremarkable.

Brazil’s agricultural agency, CONAB, increased its outlook for national soybean production to 94.3 million metric tons, which is slightly more than a million metric tons above its previous estimate and 9.5% above 2014. This kept the pressure on the soy complex Friday. The soybean meal market has dropped below the previous 2015 lows, and technical traders are eying the fall trough, around $290/ton as a key support level. The weather will determine where the markets go from here.

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WITH THE CALIFORNIA WATER SITUATION A NATIONAL STORY, AN INTERESTING READ IN THE WASHINGTON POST: (By Rob Vandenheuvel)  By now, you’ve all certainly read and heard about the draught conditions in California, with blame parceled out to different groups, depending on who you’re talking to.  (As far as this Editor is concerned, I’d just refer you to our article from more than a year ago about the absolute stupidity of releasing 700,000 acre-feet of fresh water in the Sacramento-San Joaquin Delta out to the Pacific Ocean in the name of saving a 3-inch fish known as the Delta Smelt: http://www.milkproducerscouncil.org/updates/012414.pdf. Where were all these national reporters then?)

Of course, we know the recent attention is due to the announcement by Governor Jerry Brown of new mandates on water agencies to cut back water usage by 25%. As this issue has unfolded in the papers and news programs throughout the country, there’s been a significant rise in criticism of California Agriculture, as our industries are not subject to these particular mandated cuts.

Fortunately, not everyone has bought into the anti-agriculture hype, and this past week a columnist at the Washington Post published a column on the issue entitled, “How you might be contributing to California’s water woes.” In case you missed it, the article is definitely worth the read. As such, I’ve copied the article below, with credits to the Washington Post.

How you might be contributing to California’s water woes
By Philip Bump, April 8, 2015

In the wake of California Gov. Jerry Brown’s decision to enact mandatory restrictions on the use of water given the state’s ongoing, historic drought, people nationwide have become obsessed with almonds. Not in the sense that people are buying and eating lots of almonds, mind you. In the sense that suddenly everyone with even a tenuous connection to the Internet is an expert on the water usage of various agricultural products.

Each almond, you may have heard, requires one gallon of water to grow. Which, you may also have heard, is part of the reason why agriculture uses a stunning 80 percent of California’s water -- and yet was not asked by Brown to curtail its usage at all.

Here’s the problem. The factoid about the almonds lacks context; a lot of other foods use much more water by weight. The one about how much water agriculture uses, meanwhile, is surprisingly subjective. Including water reserved for environmental purposes, agriculture only uses about 41 percent of the state’s water. And that figure almost certainly doesn’t capture what is happening on the ground in California agricultural areas over the past 24 months.

There’s a city in central California about an hour southeast of Fresno called Visalia. To get there, you fly into Fresno Air Terminal, FAT, and head south on the 99, between neatly planted rows of eucalyptus trees and past several smaller farming towns, including Selma, the raisin capital of the world. The air smells like manure and dust, and, if you’re like me, it will trigger your allergies. The region consistently has among the lowest air quality in America.

Visalia is in the northwest corner of Tulare County, where Mark Watte owns a farm and dairy. Watte -- whose name my phone kept autocorrecting to “water” -- has about 1,000 milk cows and grows alfalfa, corn and wheat as feed. He added pistachio trees about a decade ago and and recently, almonds. After struggling to keep up his output last year, he expects to have to cut back this year.

“It’s going to be 40 to 50 percent” that won’t get water, he told me by phone. “We have some crops that we just won’t irrigate. Alfalfa’s one of them. We’ll just quit irrigating it in the summer and if we don’t get water, we won’t irrigate.” The effect on his bottom line? He’ll use what water he gets to protect his highest-value crops, like those nut trees. So he expects to see a 25 percent decrease in income.
That phrase -- “get water” -- is an important one. Watte pays for the water he uses and, in most years, controls how much he buys. When there is no water, though, he can’t. And recently, there hasn’t been much water.

On the east side of the Central Valley are the Sierra Nevada Mountains and Sequoia National Park. (When you disembark at FAT, you walk through an artificial forest meant to welcome visitors who plan to visit the mountains’ giant redwoods.) In normal years, snow falls in the mountains in the winter and then melts during the spring and summer, collecting in rivers. One of those rivers is the Kaweah, which originates up in the mountains and then collects in a man-made lake east of Visalia. The lake was formed when the county built the Terminus Dam in the 1950s in response to flooding that swept through Visalia in the 1930s. Now, it’s a key part of the region’s water system.

The map below [available at the weblink at the top of this article], provided by the Kaweah Delta Water Conservation District (of which Watte is vice president), shows how that water gets from the lake to the rest of the region. It’s a complicated, intricate web of natural and man-made systems. Lake Kaweah and Lake Success (formed by another dam) are in the Sierra foothills. Their water flows into rivers and canals, and is then shunted into smaller waterways. Those waterways are usually ditches, owned and maintained by about 20 ditch companies, who are to agricultural water what the delivery guy is to your pizza place: The ones who get it to your door.

The dam and lake are maintained by the Army Corps of Engineers. But most of the water in the lake is the property of farmers and ditch companies, having decades ago bought storage in the lake. There’s an organization comprised of the companies and some farmers, that meets in the spring and decides how and when to release water from the lake. In good years, water can flow out of the lake, into rivers, and into ditches for 60 to 90 days, from June through August. In bad years, like 2014, it’s 20 days.

Normally, as I said above, snow falls in the Sierras and melts slowly to fill the lake. Thanks to the lack of snowfall in the Sierras over the winter and months of little rain on the valley floor, this year the lake could end up well below normal, perhaps only reaching 70,000 acre-feet of water. (An acre-foot is the standard unit of measurement, representing the amount of water that can cover a one acre area one foot deep.) The lake can hold 185,000 acre-feet.

Farmers pay for a certain number of acre-feet to flow into their irrigation systems, sometimes going into storage ponds, water batteries on their land. Ditch companies and government bureaus sell water to farmers, opening and closing gates to allow the proper amount to flow into their property.

Jeff Tashjian, who grows lemons and oranges on the east side of Tulare County -- and who is my brother-in-law - - has seen how the price of water has changed over the course of his two decades in the business. “I can remember when water was, 50, 60 dollars an acre-foot,” he told me. The price varies by location: Farms uphill from the water source pay more, because it needs to be pumped. Farms further west from the source pay more, too, since it’s more expensive to shunt it over there.

When there’s less water, the law of supply and demand also kicks in. “Last year, they had a little water left over, and they were telling the farmers it was around $400 an acre-foot,” said Tashjian. Farmers bought it to store, in case of emergency, like a well going dry. Then the company got hold of more water. “If you want some,” he was told, “it’s $1,500 an acre-foot.” Buying water in hard times, in other words, can be as much as 30 times more expensive.

The preventive measures make sense. Groundwater levels had already been dropping over time, as the graph above shows. The aquifer from which water in the area is drawn has had two million acre-feet more withdrawn than it should have, according to Watte. “The only way we can pump less water is to farm less land,” he said. “That’s looming.”

But worse drought means less water through the system of ditches and canals, which means more pumping groundwater. More pumped groundwater means wells run dry. Jeff Ritchie, who farms a wide array of crops
ranging from walnuts to cotton, said that the drought is the worst he’s seen. “We’re having to go in and drill deeper to take the place of the ones that are dry,” Ritchie told me. When the canals and rivers are flush with water after heavy rain- or snowfall, the groundwater is replenished, as is seeps into the ground. With the drought, that doesn’t happen.

There’s one other way in which agriculture east of Visalia gets water: The Friant-Kern Canal. It’s marked on the map above, and brings water down from the Friant Dam on the San Joaquin River, past the outskirts of Visalia, and down to Bakersfield. Tashjian gets water for some of his fields from the Friant; it’s the one that saw the spike in prices in 2014. Such north-south water projects are legendary for their contentiousness in California history, of course. Last year, The Atlantic thoroughly (and fascinatingly) detailed the state and history of that system.

In Tulare County, the problem is slightly more localized. For the first time ever last year, the Friant allocated zero percent of its contractually obligated water for irrigation in the area. Earlier this year, the Bureau of Reclamation announced that it expected another “zero allocation.”

A state decision in February not to allow increased pumping for agriculture met with protest from farmers who get water through the Friant system. State Water Resources Control Board Director Thomas Howard argued against the pumping, given the historically low population levels for certain types of fish. Which offers a nice anecdote for answering the question of how much water is used for what.

Agriculture uses 80 percent of the state’s water only if you exclude water that is reserved for environmental purposes. A report from the Public Policy Institute of California (from which the graph above is derived), explains what that water is used for: “water in rivers protected as ‘wild and scenic’ under federal and state laws, water required for maintaining habitat within streams, water that supports wetlands within wildlife preserves, and water needed to maintain water quality for agricultural and urban use.” It’s everything that’s not in the bottom half of the circle above. Agriculture uses far, far more water than urban areas, but it, too, has constraints.

The limitations placed on water use for environmental purposes clearly frustrated the farmers that I spoke with. In part, that’s due to a long series of legal and political battles, which the farmers feel as though they usually lose. (They aren’t without their allies; California Republican Carly Fiorina blamed environmentalists for the state of the drought.) But the tension is particularly sharp given recent critiques of water use by agriculture.

“We do what the rest of the world can’t do so well,” Watte said. “We grow processing tomatoes. Almonds. Pistachios. Table grapes. Garlic and onions. All of these things that we supply a significant amount of the nation and the world’s supply. What would they rather have us do with that water?”

“Garbanzo beans don’t take much water,” he added. “Should we just grow garbanzo beans?”

In response to the almond critique, the Los Angeles Times created a graphic showing how much water it took to grow an ounce of various types of food. Almonds are low on the list. Beef, which requires crops be grown and then fed to the animals, as on Mark Watte’s farm, uses much more per ounce. The number of ounces of almonds produced for market, though, means they use more water statewide, as Bloomberg notes. Scale is important.

Where the blames falls for agriculture’s water use is open to interpretation. According to Watte’s data, making a cheeseburger -- the lettuce, tomato, bun, cheese and meat patty -- uses 698.5 gallons of water. “Who is the real consumer of that water?,” he asks. Is it the farmer? The produce itself? His implication, of course, is that it is you.

The farmers I spoke with have been and are making changes aimed at reducing their water consumption. After all, it’s expensive. Historically, walnut trees are flooded, because the roots like deep moisture. That meant literally flooding the grove and letting the water seep into the ground. (Which, at least, helps rebuild ground water.) Newer groves have microdrip systems, which costs more to install, a few thousand dollars per acre, but reduces the amount of water that’s used.
That holds for other crops, too. “Ten years ago, a common yield [of processing tomatoes] would be 40 tons to the acre using 36 to 40 inches of water,” Watte said. “Now they’ve doubled their yield using 24 inches of water.” Tashjian’s citrus trees used to use furrowed irrigation, in which water would be turned on from a tap and rows of ditches would be filled with water until it seeped into the ground. It took five to six days to irrigate his entire crop. Now, he has buried irrigation lines running between the trees, with fan jets that are set to particular pressures and patterns. The irrigation only takes one day, saving both water and electricity.

Still, he’s considering other ways to cut down on water. Maybe moving the irrigation lines underneath the trees, so the water is shielded from evaporation better. (This is the Central Valley of California, after all, where temperatures routinely head north of 100 degrees in the summer.) That switch, though, might affect the trees. He’s also thought about running the irrigation at night, but that could mean being slower to detect problems. This isn’t just a drought problem for him. It’s also an economic one.

Asked to explain why he wasn’t mandating reductions from agriculture, Gov. Brown told ABC News last Sunday that “they’re not watering their lawn or taking long showers -- they’re providing most of the fruits and vegetables of America to a significant part of the world.”

“If you don’t want to produce any food and import it from some other place, theoretically, you could do that,” he said. “But that would displace hundreds of thousands of people and I don’t think it’s needed.”

Incidentally, the amount of water used in California in February was down only 2.8 percent versus 2013, the lowest figure since last July. Some places, including cities down south, saw their usage go up. Wealthy Southern Californians use three times as much water as the non-wealthy, according to one study. Perhaps they deserve a nickname.

I propose: “Almonds.”

*Philip Bump writes about politics for The Fix. He is based in New York City.*

REMINDER: USDA’S “OUTREACH MEETINGS” ON THE CA-FMMO IN EARLY MAY: (By Rob Vandenheuvel) As a reminder, USDA has announced three “Outreach Meetings” in California on the issue of a CA-Federal Milk Marketing Order (FMMO). As noted on the announcement, “The outreach meetings will give USDA the opportunity to explain the FMMO rulemaking process and allow proposal sponsors the opportunity to explain the technical details of their submissions.” You can find more details on the meetings at: http://www.ams.usda.gov/AMSv1.0/CAOutreach. The schedule is pasted below, and all attendees are encouraged to pre-register for the meetings (registration links are found below as well). Producers are strongly encouraged to make plans to attend one of these sessions.

**Tuesday, May 5, 2015**
California State University, Chico
Bell Memorial Student Union, Room 203
Corner of West 2nd and Chestnut Streets, Chico, CA 95927
Registration: http://events.constantcontact.com/register/event?llr=kttdtdataoeidk=a07eaorptixa7a11db4

**Wednesday, May 6, 2015**
Piccadilly Inn Airport
5115 E. McKinley Avenue, Fresno, CA 93727
Registration: http://events.constantcontact.com/register/event?llr=kttdtdataoeidk=a07eaou1p9vdecca442

**Thursday, May 7, 2015**
Los Angeles County Farm Bureau
41228 12th Street West, Palmdale, CA 93551
Registration: http://events.constantcontact.com/register/event?llr=kttdtdataoeidk=a07eaouh6i1fd5eba72