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Mercaris Special Report

Spring Planting 2019:

Floods, Mud, and Yields

Introduction

This year's extreme weather conditions have reshaped the outlook for U.S. agriculture. These conditions are expected to have a measurable, and noticeably different impact on organic field crops compared to conventional field crops. Differences in organic production including the concentration of production in different states, use of cover crops, crop rotations, and planting dates all contribute to a different decision making pattern for organic farm managers.

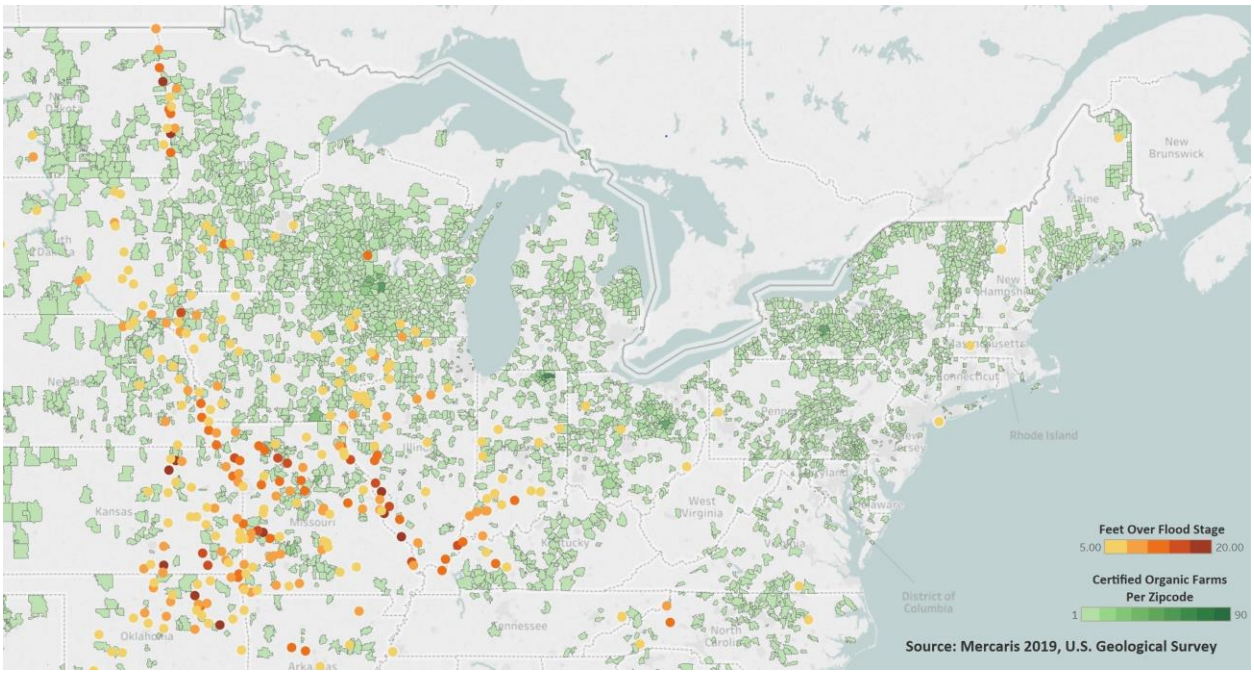
Throughout this special report, Mercaris addresses the various impacts on organic crop production caused by the unprecedented spring of 2019. Through conversations with stakeholders along the organic agriculture supply chain, Mercaris has collected insights into how organic production has shifted in response to this year's weather. In producing this special report, Mercaris provides a clearer view of the risks to the 2019/2020 harvest, providing insights for the organic industry to better prepare for the year to come.

Key Findings

- Less than 3% of U.S. organic field crop acres were located in areas impacted by this spring's most significant **flooding**, as the majority of organic field crop operations are located away from the Mississippi and Missouri River valleys.
- During a recent survey of organic farmers conducted by Mercaris, when asked if planting decisions were changed this year due to weather (**precipitation**), 56% of respondents answered "yes".
- 29% of respondents indicated an intention to file for Prevented Planting insurance on at least some portion of certified organic farm acreage.
- 98% of survey respondents indicated plans to plant a fall harvested cash crop. 80% of respondents indicated they will be planting some organic corn, while 71% indicated they will be planting some organic soybeans.
- 33% of respondents indicated an inability to plant some organic corn acres, while 12% indicated an inability to plant some organic soybean acres.
- The survey found that many farmers chose to plant soybeans this year, following a reduction in the number of planted organic corn acres, with 100% of farmers who adjusted their planting decisions planting soybeans.
- Across the Midwest, summer cover crops will be vital this year to compensate for significant organic winter wheat and organic winter alfalfa production losses.
- In general, organic farmers are expected to be more reliant on summer cover crops compared to conventional farmers, limiting the overall loss of total planted organic acreage, but with a likely reduction in cash crops planted.

Flooding

Graph 1: U.S. Flooding and 2018 Organic Field Crop Operations



In measuring the impact of the wet spring on U.S. organic crop production, the first potential cut to the number of planted organic acres resulted from significant regional flooding following persistent above average precipitation. To gain an understanding of the impact of flooding on organic crop acres, Mercaris mapped the concentration of certified organic field crop farms per zip code along with flood stage data acquired from the United States Geological Survey (USGS). Data from USGS indicating WaterWatch Stations that reported water crest levels in excess of five feet above flood stage was collected from March 1 through June 27, 2019. Flood stage is a “calculation of the stage at which overflow of the natural banks of a stream begins to cause damage in the local area from flooding”.

The comparison shows that significant flooding has indeed been widespread, and most recently concentrated primarily along the Missouri River, across Missouri, and along Southern Indiana. While there are a number of organic farms located along the Mississippi and Missouri Rivers and in states that have experienced significant flooding, the larger majority of organic farms are located outside of the most impacted zones. Organic field crop production is historically concentrated in large areas around the Great Lakes region of the U.S. which has not been as significantly impacted by the waves of flooding across the river valleys of the Midwest. For example, in 2018 the state of Wisconsin contained 1,362 USDA Certified organic field crop farms based on Mercaris estimates, or 12% of the U.S. total. However, only 20 of these organic farms were located in the areas with the most significant flooding.

Table 1: Mercaris Estimated U.S. Organic Field Crop Acres in Flooded Regions

State	Acres[1]	State	Acres[1]
Arkansas	3,855	Montana	20,685
Iowa	3,746	North Dakota	13,441
Illinois	4,733	Nebraska	8,199
Indiana	1,529	Ohio	2,371
Kentucky	2,281	South Dakota	13,445
Minnesota	5,038	Wisconsin	3,181
Missouri	3,517		
U.S. Total	**86,021**		

Source: Mercaris 2019

1. Based on Mercaris Estimated 2018 Organic Acres Harvested

In total, 210 certified organic field crop operations were located in areas impacted by the most significant flooding; just 2% of the Mercaris estimated U.S. total organic field crop operations. Mercaris estimates that, at most, 86,021 acres of organic field crop land is located in these affected areas, or slightly less than 3% of the U.S. total. It's important to note that, although it appears the wide majority of organic operations have been spared outright flooding, there are other problems organic farmers continue to face with planting and yields associated with above average precipitation. However, the percentage of acres lost to flooding appears to be less for organic farmers than for conventional farmers.

Prevented Planting

Table 2: Mercaris 2019 U.S. Organic Planting and Prevented Planting Insurance Survey

	Famers	Share of Total	Reduced Crop Acres Planted		Crop Acres Planted	
			Corn	Soybeans	Corn	Soybeans
No Change in Planting Due to Weather	20	44%	-	-	85%	65%
Changed Planting Due to Weather						
No PPI Claim	12	27%	75%	25%	75%	100%
PPI Claim	13	29%	62%	23%	69%	54%
Total	**45**	**100%**	**38%**	**13%**	**78%**	**71%**

Source: Mercaris 2019

PPI Claim: Prevented Planting Insurance Claim

Flooding was not the only barrier to planting this year as continuous bouts of rain offered farmers few opportunities to put tractors in fields. Crop producers have options to recoup at least some of their losses should planting be prevented altogether. One of the most widely discussed options is the opportunity to file for a Prevented Planting insurance provision with the U.S. Department of Agriculture's Risk Management Agency (USDA RMA). Simply put,

Prevented Planting insurance allows a farm manager to reclaim a portion of their losses should the farmer be unable to plant a specific set of crops due to weather-related issues prior to a cut-off date.

Though it is never an easy decision to forgo a growing season for any reason, for organic farm managers the decision to file for Prevented Planting insurance is made more complex by the requirements of an organic production system. A major limitation is the reduced opportunity to produce a summer cash crop, due to the use of rotational growing practices. Unlike a conventional farmer who can adjust planting decisions at the direction of market prices, organic farmers rely on crop rotations for soil integrity and pest control. As such, not every year brings the opportunity to produce a high value crop in every field. As a result, losing the opportunity to harvest a potentially profitable crop can carry a heavier financial weight for organic farmers.

Another factor of organic crop rotation—cover crops—presents its own challenges for organic farm managers when determining to file a Prevented Planting claim. When a cover crop is planted in place of a summer cash crop, the cover crop is often harvested as organic livestock fodder, or used for grazing purposes. This practice is particularly common along the upper Midwest and states bordering the Great lakes where organic dairy producers are most concentrated.

With the wet and cold winter that preceded this year's wet and cold spring, the quality of this year's organic winter wheat and winter alfalfa crop, usually fed to organic dairy cows, have been reported as being in very poor condition. For organic dairy producers this has created tight feed supplies over the coming year, incentivizing farmers to plant some kind of harvestable or grazeable crop, regardless of the guaranteed revenues of Prevented Planting insurance. As a restriction of Prevented Planting insurance claims, if a crop is planted after a claim is filed, that crop cannot be harvested or grazed until September 1; however, the USDA RMA did adjust this date from November 1 for 2019. Even with this adjustment the use restriction may prove too limiting for organic farmers, despite the short-term economic benefits of filing an insurance claim.

All factors considered; it appears there will be a measurable loss to the total number of planted organic corn and soybean acres following Prevented Planting insurance claims. A recent farmer survey conducted by Mercaris found that 13 of the 45 respondents, representing 29% of reporting farmers, do intend to file a Prevented Planting insurance claim this season. However, of those 13 farmers who indicated their intention to file Prevented Planting insurance, 85% indicated their intention to still plant some combination of organic corn and/or soybean acres. Also, of the 13 operations filing Prevented Planting, organic corn was by far the most common crop not planted as a result of weather, with 62% of respondents indicating a reduction in acres. The impact on organic soybean planting was a smaller, but still significant 23%.

For organic corn, the data indicates 17% of the survey group reduced organic corn planting in exchange for a Prevented Planting insurance claim. The impact on organic soybeans is a much smaller 7% reduction in planting intentions, however this number likely overstates the impact as

it does not account for any shifts in acres away from organic corn and towards organic soybeans. Overall, the survey results show that organic farmers have had to significantly adjust their planting decisions, and are using USDA RMA Prevented Planting insurance as a tool to cope with this year's growing conditions. However, the burden of planting difficulties appears to have fallen most heavily on organic corn acres.

Planted Acreage Shifts

Beyond reductions in planted acres by organic farmers leveraging Prevented Planting insurance, the data suggests that a significant number of farm managers adjusted their crop rotations to keep planting as a viable option. Looking at the substitution of crop acres, the primary question is how many acres of organic soybeans will be planted that would have otherwise been planted as organic corn? As an indicator of what might have been planted this year given "normal" weather conditions, 44% of respondents to the Mercaris survey indicated that they did not adjust their planting decisions due to weather, 85% of which indicated that they will be planting organic corn this year and 65% indicated that they will be planting organic soybeans.

Looking at organic farm managers who adjusted their planting decisions due to weather this year (excluding those who intend to file a Prevented Planting insurance claim), many farmers increased planted organic soybean acres while reducing the number of planted organic corn acres. Of the farmers who changed planting decisions this year, 75% reduced the number of organic corn acres they intended to plant. The survey also found that 75% of these same respondents indicated they will be planting some organic corn acres this year, 10% less than the number of farmers who will be planting organic corn without changes to their planting decisions this year. Astoundingly, 100% of farmers with weather adjusted planting decisions indicated that they will be planting organic soybeans this year, 35% more than the share of farmers who did not adjust their planting decisions. As a result, it appears that farmers have moved acres away from organic corn and towards organic soybeans as a strategy for coping with this year's planting conditions.

Looking at the overall results of Mercaris' survey, it appears the number of organic corn acres planted this year has been reduced by this year's spring. The data indicates a significant portion of organic corn farmers reduced planted acres this year through filing a Prevented Planting insurance claim. Of the organic farmers that did not indicate filing a Prevented Planting insurance claim, the data clearly indicates a reduction in the number of organic corn acres planted per farm as well as a reduction in the number of farmers planting organic corn this year.

In contrast, organic soybean acres look less pessimistic. Although the survey did indicate a reduction in planted organic soybean acres resulting from Prevented Planting insurance claims, it also indicated that a significant number of acres were shifted away from organic corn and towards organic soybeans. In total, the data suggests the possibility for organic soybean acres to be higher than they might have otherwise been following this year's wet spring conditions.

Looking Towards Harvest

Even with a perspective on planted acres, there are still numerous undetermined market risks that stand between now and harvest. The most substantial of which will likely be yields. With spring's cold, wet conditions dragging well into June, many of the crops that were planted have been slow to emerge. Also, there are concerns that the weather experienced this spring could be an indicator of the weather patterns throughout this summer further limiting crop development. And, as a final threat, generally cooler temperatures allow for speculation of an early fall frost. With planting and growing conditions already delaying the development of this year's crop, reaching anything beyond average yields this year is very unlikely. And, every setback between now and harvest will add yet another layer of pessimism about supplies over the 2019/2020 marketing year.

The supply of organic livestock hay and forage over the remainder of 2019 is also a large risk factor, particularly in larger organic dairy producing states. As previously mentioned, the quality of this year's organic winter wheat and organic winter alfalfa crops have been reported as being in very poor condition, tightening the already limited organic livestock feed supplies outlook. This presents the risk of pushing organic farm managers to plant more harvestable or grazable cover crops than would be expected otherwise. For some organic growers who were unable to terminate their winter cover crops, leaving those crops in place as a summer fallow cover will be a viable strategy for offsetting some of this loss. However, this will be a strategy only a few organic farmers will be able to leverage. For those who cannot use this strategy, there is likely to be a demand side push on prices as livestock producers work to lock in available supplies. Even though the tight market for spring harvested forage crops will impact summer organic cover crop decisions, it isn't likely to have a significant impact on the current acreage situation. However, it will contribute to what is already shaping up to be a tight supply situation this fall adding more price pressure and risk to the market.

About Mercaris:

Since 2013, Mercaris has been helping its customers capitalize on growing demand for organic and non-GMO foods by providing market access and services tailored to the needs of the identity-preserved agriculture industry. Mercaris focuses its data and services on identity-preserved commodities, including organic and non-GMO corn, soybean, meal and organic wheat, and other small grains markets across all regions of the United States and Canada, and recently launched an organic dairy initiative. Mercaris also maintains an online Trading Platform, a pioneering tool that enables buyers and sellers to find new markets and more profitably trade organic and non-GMO commodities.

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