

Rice Buyers,

Steve McKaskle with McKaskle Family Farms contacted me George Merrell, V with Merrell Enterprises, LLC, a local agronomy company, with a major concern after the media blitz about arsenic (As) in rice products. With Mr. McKaskle being an organic rice farmer this was of great concern. His greatest concern were the products that he had used over 30 years ago called MSMA and DSMA. These products were used as a herbicide and contain elemental Arsenic. Mr. McKaskle said if there was an arsenic problem that this product was probably to blame. After reading all the literature put out by the FDA and the article by Consumer Reports, I was delighted to inform Mr. McKaskle that MSMA and DSMA are absorbed as organic arsenic not inorganic arsenic in the soil profile. If there are any levels of arsenic in his soils that it would be from natural occurrences not anything he has done with the herbicides MSMA or DSMA.

The next step was to actually test his rice for Organic and Inorganic Arsenic. We collected samples of his Long Brown, Brown Basmati and Long White rice and sent them to a lab that can test for minute amounts of Arsenic, both organic and inorganic. The lab we used was OMIC USA Inc. in Portland, Oregon. This lab specializes in food product testing for an array of different purposes. I spoke with John Lupean, the Laboratory Manager, and discussed Mr. McKaskle's issue. Mr. Lupean assured me that he deals with various growers around the USA with Arsenic testing as part of their quality control programs. The samples were sent off and were returned with the results as follows.

Sample ID	Product Category	Sample Description	Total (AS) ppb	Inorganic (AS) ppb	Organic DMA ppb	Organic MMA ppb	Inorganic (As) mcg/serving
2	Rice (non-Basmati)	Long Grain Brown	471.5	150.2	306.7	14.6	6.759
3	Rice (Basmati)	Brown Basmati	385.7	129.8	255.9	0	5.841
1	Rice (non-Basmati)	Long Grain White	229.5	82.9	146.6	0	3.731

Comparing these results with the results from the FDA that produced such a media frenzy reveal that McKaskle Family Farm is at the lower end of Inorganic Arsenic in all three rice samples. Of course these are findings that gave great relief to Mr. McKaskle and his position of striving to be a premier organic rice grower.

Even though McKaskle Family Farm's results were at the low end of results provided by the FDA, there is much that can be done at McKaskle Family Farm to ensure that no Arsenic of any kind is added to the soils. This development has brought pause and analysis to all operations at McKaskle Family Farm. We have recommended that every input that is brought from outside the farm be tested for Arsenic. This will include anything that is used in the production of the crop from start to finish. We will monitor

any lime, water, fertilizer, or chemical substitute that is used at any stage of the crop production process. These inputs will be tested and not used if found to contain Arsenic in any form or manner.

There are also ways to convert the Arsenic in the soils from Inorganic to Organic Arsenic. The natural aspects of Organic Farming have, by no surprise, put McKaskle Family Farm at the low end of all results collected by the FDA. By continuing to Farm Organically the natural cycle of soil organisms will convert Inorganic Arsenic to Organic Arsenic as expected. This can be done at even a greater time frame by no till farming which takes Organic Farming to a whole new level of being Natural. An undisturbed seed bed will lead to an even greater amount of microbial activity and an increased rate of converting Inorganic Arsenic, leading to even lower test results in the years to come.

By guaranteeing there aren't any additions of Arsenic into the soil through testing all inputs and by taking necessary steps to reduce the Inorganic Arsenic that is already in the soil profile, McKaskle Family Farm will continue to be the Premier Organic food producer that they have set out to become.

Rice consumers can also do their part in reducing Arsenic in rice by preparing and cooking rice correctly. The FDA cites several studies where washing and rinsing rice thoroughly, until the water is clear, can reduce the Arsenic content up to 30%. In addition, the consumer can check the water used to rinse and cook their rice for arsenic. Water with excess Arsenic that is used to prepare rice can cause even more Arsenic to be absorbed into the rice. Once the rice is rinsed, and the water used to cook the rice is found to be free from arsenic, it is important to then cook the rice properly. Cooking rice 1 part rice to 6 parts water can reduce total Arsenic level by up to 60%.

After all best practices are performed by the grower and preparer the risk of Arsenic in rice can all but be eliminated as a health issue much less an outright health scare as portrayed in the media. Choose the right producer and use best practices and Arsenic becomes a non issue.

George Merrell, V

Merrell Enterprises, LLC