

Written Testimony for the Record

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United States House of Representatives
Committee on Appropriations
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies

Subject: Support for USDA Agricultural Research Service Funding

May 27, 2022

Chairman Bishop, Acting Ranking Member Harris, and members of the subcommittee, we appreciate the opportunity to submit testimony today on the importance of the USDA Agricultural Research Service (ARS). The North American Millers' Association (NAMA) appreciates your commitment to agricultural research and the increase in funding provided in the FY2022 omnibus spending package. We encourage the subcommittee to increase the current funding levels for ARS in FY2023.

NAMA represents millers of wheat, corn, oats, and rye in the U.S. and Canada. Our members take raw grain and, through grinding and crushing, create flour and other products that are used to make favorite foods, such as bread, cereals, pasta, tortillas, cookies, cakes, and snack foods.

All of the grains milled by NAMA members benefit from the research supported across the country by ARS. From research on mycotoxins and wheat scab to efforts to understand oat rust, the work and support provided by ARS is critical to keeping the U.S. grains supply chain on the cutting edge of a highly competitive global marketplace.

While NAMA and industry leaders also contribute to research initiatives and believe in strong public-private partnerships, the success of U.S. agriculture is due in large part to the sustained federal investment in agricultural research. Over time, these investments have assisted U.S. growers in being the most productive in the world and contributed to making the U.S. a global leader in the increasing demand for food.

Wheat

Wheat is an important component of the diet as it contains significant amounts of protein, insoluble and soluble fibers, vitamins, and minerals. In fact, wheat is the world's largest crop used for direct human consumption. The recent Russian invasion of Ukraine has resulted in a substantial strain on the world's wheat supply, causing a ripple effect across the globe that will have far-reaching effects on world hunger. Because of this, high-quality and high-yield U.S. wheat production has never been more important.

While global wheat consumption continues to expand, the U.S. wheat sector has faced many challenges over the past decade, including a weak domestic market for wheat products.

According to the USDA Economic Research Service (ERS), U.S. wheat harvested area has dropped by more than thirty million acres, or more than one-third, from its height in 1981. Further, the U.S. share of the global wheat market has also been declining over the past two decades as the European Union and Russia have become more competitive.¹ ARS resources that support activities such as wheat genotyping, quality, genetics, breeding, and pest and disease research are critical to improving the wheat breeds and technologies necessary to provide economical solutions to producers and quality food products to consumers. The U.S. Wheat & Barley Scab Initiative (USWBSI) continues to be a valuable effort as it focuses on the development of scab resistant wheat varieties, disease forecasting, and food safety.

Additionally, ARS contributions to the development of the quality of wheat varieties is critical to improving the end-use quality, uses, and marketability of soft winter (SW) wheat in the eastern U.S. Researchers at the USDA-ARS Soft Wheat Quality Laboratory (SWQL) are working to develop reliable and efficient quality testing methods, perform fundamental research on milling and baking quality characteristics and their genetics, explore extended uses, and perform the comprehensive evaluation of breeding lines for end use quality. Current ARS SW wheat research projects include: 1) development of fast and reliable wheat grain pre-harvest sprouting (PHS) damage estimation test and cracker baking test; 2) establishment of SW wheat quality profiles required for making tortillas and noodles; 3) identification of genes and genetic markers for PHS resistance; 4) development of novel germplasms of reduced starch amylose content, extra soft kernel texture, and early maturity. This kind of research will improve the end-use quality of eastern soft wheat varieties, help regional milling and baking industries identify quality grain, and increase the marketability and value of eastern soft wheat in domestic and overseas markets. The genetic complexity of wheat and overall limited availability of research funds make this work being done by ARS all the more important.

Oats

While consumption of oats in the U.S. has been increasing year over year due to the unique nutritional benefits they provide, U.S. oat production has steadily declined.² Because of this, over ninety percent of the oats being milled in the U.S. for staple foods, such as cereal, granola, and oatmeal, are being imported from Canada. Additionally, about eighty-five percent of the oats milled in Canada are imported by the U.S. As Americans continue to look to oats as a heart-healthy, safe, whole-grain addition to their diets, continued investment by the federal government is essential to keep the U.S. at the forefront of improving oat production and quality.

Basic genetic research, including new molecular techniques, plant breeding, research on disease resistance, germplasm enhancement, and research on new and value-added uses will enhance the value of oats and provide benefit to the producer, processor, end-user, and consumer. In addition, oats play an important role in sustainable grain production in the U.S. and provide producers with another crop option. To remain a viable crop, sustaining the progress in oat improvement is imperative. The support provided by ARS for oat research is essential to this progress.

¹ "Wheat Overview." USDA ERS. <https://www.ers.usda.gov/topics/crops/wheat/>.

² "National Statistics for Oats." USDA National Agricultural Statistics Service. https://www.nass.usda.gov/Statistics_by_Subject/result.php?B14DB546-1A63-318B-8A9F-E4FD740124B7§or=CROPS&group=FIELD%20CROPS&comm=OATS.

Specifically, the increases provided to ARS over the past few years have been instrumental in advancing our understanding of how to grow better, higher yielding, more disease-resistant oats. Among other important steps, congressional funding has allowed ARS to hire breeders, geneticists, and research agronomists; continue sequencing the oat genome to develop a pangenome of oat; work toward determining protein, beta-glucan, and oil contents of oat varieties; and increase analysis of oat crown rust samples. Congressional funding is critical to ensuring that these great strides in oat research can continue to develop.

Corn

Milled corn is found in a wide variety of foods, including corn meal, grits, corn flour, corn flakes, and breakfast cereals. In addition to being rich in antioxidants, milled corn foods are delicious and culturally significant, making it easy to get essential nutrients, such as carotenoids, into consumers' diets. Advances in corn genetics and technologies have been significant in recent decades. However, work remains to be done to limit mycotoxin contamination, control foodborne diseases, improve crop production, and increase sustainability. ARS conducts a variety of innovative food and feed safety research to monitor, predict, and eliminate mycotoxin contamination in corn and continuously develop technologies to enhance climate resilience of cereal crops, including corn. For example, ARS scientists have developed plant-based fumigants and identified beneficial microbes to control fungi that produce mycotoxins during the storage and processing of corn and other grains. These novel technologies can improve food safety and crop production.

Further, ARS facilities are developing commercially viable technologies that transform corn, its components, and processing waste into value-added food and non-food products, resulting in a more sustainable product. ARS scientists have developed a range of new biobased materials from corn starch that can replace petroleum products in food packaging and other plastic products. These inexpensive corn starch inclusion products are also superior emulsifiers for use in foods and industrial products. These corn-based materials can be used to make water repellent lumber, paper, and cotton products. Emulsions can be made to effectively kill termites and mosquito larvae. These products are nearly one hundred percent biobased, completely biodegradable, and some are also antimicrobial.

ARS research touches not only the food and packaging aspects of Americans' lives, but their pets as well. ARS scientists have used corn bran as the basic ingredient for a bio-based asthma friendly cat litter. The support of ARS facilities across the country ensures this important research continues.

Conclusion

While we appreciate the budgetary challenges faced by the subcommittee, we encourage you to increase funding levels for ARS in FY2023. The research supported by ARS is critical to the continued productivity and profitability of the entire U.S. grain milling supply chain.