



New Oat Boasts More Beta-Glucan for Healthier Hearts



Thanks to the Information Age, beta-glucan is fast becoming a household name among today's health-conscious consumers. Turns out, consuming

3 grams daily of this soluble fiber—combined with a healthy diet—may lower the blood's level of so-called bad cholesterol, diminishing the risk of coronary heart disease.

Indeed, beta-glucan is in a functional-foods, beverages, and supplements market that generates several billion dollars in annual sales. Whole oats are the chief source of the health-imparting fiber—a fact not lost on U.S. oat breeders. While several have been selecting for the trait in oats, they've not yet released any high-beta-glucan cultivars.

But in the August issue of *Crop Science*, Agricultural Research Service (ARS) and North Dakota State University (NDSU) scientists published their joint registration of HiFi, a new spring oat cultivar they bred specifically for its elevated beta-glucan content.

"HiFi is about 50 percent higher in beta-glucan than the oats you'd buy in the grocery store, so you don't have to eat as much to get the same health benefits—or you can eat more oats to get more of the benefits from beta-glucan," notes Doug Doehlert, a cereal chemist with ARS's Red River Valley Agricultural Research Center, in Fargo, North Dakota.

There, Doehlert is part of an ARS-NDSU team that's been cooperatively breeding oats since 1993. Mike McMullen, a professor in NDSU's Department of Plant Science, oversees

the breeding process; Doehlert analyzes the oats' grain quality and biochemical properties.

During one such analysis in 1999, Doehlert noticed something odd: One of the lines furnished by McMullen contained more beta-glucan than the others. Suspecting an error, Doehlert repeated his tests—only to confirm his initial observation.

HiFi, short for "high fiber," also has very good agronomic properties and excellent disease resistance, he adds, "but it hasn't been grown very much as an 'ordinary' oat" since certified seed was released to area farmers a few years ago. For example, in North Dakota, as well as border regions of South Dakota and Minnesota, oats are grown to feed livestock. As such, they're bred for high fat content rather than fiber, since the latter detracts from the animal's energy needs.

Marketing-wise, this posed something of an uncertainty for HiFi's commercial future, Doehlert says, given that milling companies—many located in Iowa—obtain low-fat oats intended for human consumption from Canada or from other regions of the United States.

U. S. Food and Drug Administration health-label claims have since bolstered consumer interest in beta-glucan, which has in turn stoked commercial interest in HiFi.

One example is Organic Grain and Milling, Inc. (OGM). A wholly owned subsidiary of Ceres Organic Harvest in Hudson, Wisconsin, OGM is negotiating licensing rights with the NDSU Research Foundation to market HiFi, and it plans on targeting production in the organic marketplace as a retail and industrial brand. "Marketing has been a big bottleneck," says Doehlert, "so we're quite thrilled that OGM is interested."—By **Jan Suszkiw**, ARS.

This research is part of Plant, Microbial, and Insect Genetic Resources, Genomics, and Genetic Improvement, an ARS National

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