Soybean is made for Missouri

By BILL WIEBOLD

The soybean is Missouri agriculture’s pride and joy. Few things grown, mined or manufactured in Missouri touch so many citizens as soybean.

Soybean is our No. 1 crop in both number of acres and value. In fact, the number of acres planted to soybean is greater than the total acreage all other grain, fiber and vegetable crops. Few other Midwest states can say that. Of the 87 Missouri counties in which both soybean and corn are grown, the ratio of soybean to corn acreage is greater than 1.2:1 in 79 counties.

The economic health of state depends on our soybean crop. The on-farm value of Missouri’s 2009 soybean crop was $2.2 billion. But, the value of the soybean is not just for the farmers that grow it. A good soybean crop means more car sales, more trips to restaurants, larger bank deposits for loans, and countless other benefits to rural, suburban, and urban citizens — citizens who may not even know what a soybean plant looks like.

Before WWII, soybean was considered a forage crop. We soon discovered that the soybean seed was a nearly perfect combination of protein and oil. We wear a shirt with large letters announcing the interrelationship between soybean and livestock. Nearly every domesticated animal, including pets, eats soybean protein.

More than 90% of Missouri’s soybean oil is used for human consumption. Read almost any food label and you’ll find soybean or a derivative of soybean. From the best-tasting french fries to margarine to candy bars, the world desires Missouri soybeans. And, new uses for soybean keep on being discovered. Soy products are now used to print the newspapers we read and to fuel our trucks and cars. Missouri is the home of the world record for soybean yield — not Iowa, not Illinois. But perhaps more importantly, thousands of Missouri farmers grow profitable soybean crops. The characteristics of the soybean make this possible. Missourians appreciate and honor hard work.

The remarkable soybean

The soybean is made for Missouri. In each acre of soybean, nearly 6 acres of soybean leaves capture sun energy to build yield. Soybeans track the sun across the sky; they’re always positioned to collect solar energy efficiently. If soil conditions dry, leaves reorient themselves to reduce heat load and water evaporation. Soybean leaves seem to know their purpose and work from dawn to dusk to fulfill it — much like the farmers that grow them.

When seed-filling is at its peak, an acre of soybean plants will gain more than 60 pounds each day. This weight gain is stored in nearly 10 million individual seeds in that acre.

Missourians also admire resiliency. Again, the soybean is made for Missouri. Soybean plants have a remarkable ability to adapt and conform to the conditions in which they grow. At each place on the stem where a leaf is attached, there are three buds. These buds can form a branch or a flowering structure with multiple flowers, or remain buds. Soybean plants can sense how close their neighbors are and, if there is room, they signal one or more buds to grow into a branch. Soybean plants produce nearly twice as many flowers as will be harvested as pods. And, they have the capacity to produce up to four times that many flowers. Like a well-designed machine, a soybean plant has multiple redundancies hardwired into its nature. Soybean plants continually assess their environment and seem to know how many seeds they can carry to maturity. Flowers are added and pods are shed in reaction to that assessment over a 30- to 40-day period. Like any crop, soybean prefers excellent growth conditions — and will respond to them with increased yield. However, it will also produce at least some yield even when conditions are less than optimum.

Research efforts

Any Missouri farmer knows that our state is not blessed with the top agricultural soils or most favorable weather. To overcome these challenges, growers have invested their soybean checkoff dollars and efforts in areas of research, extension and marketing.

The University of Missouri has just been named among the top 15 universities in the world for plant and animal sciences by Thompson Reuters. This high ranking is due, in part, to that soybean research investment.

Missouri scientists use a four-pronged approach to improving the profitability of soybean: increased genetic potential through breeding and biotechnology, enhanced productivity through better management in the field, improved oil and protein characteristics to increase demand, and discovery of new uses.

Just as Missouri farmers are continuously looking for ways to improve their soybean management, soybean scientists will not be satisfied with past successes. Look for release of new varieties, better understanding of how to manage drought and heat, and improved methods to protect yield from an array of plant enemies in the near future.

Science has made high yield and high demand possible. Still, the hard work of Missouri’s farmers puts that information into action. The partnership between farmers and scientists ensures that soybean will continue to reign as a top crop for many generations.

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