

RR-02

Soybean in the United States: Back to the future

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This conference venue was selected to recognize the 1765 introduction of soybean into the U.S. From then through the first decades of the 20th century the majority of soybean grown in the U.S. was used as forage for livestock or to provide nitrogen for corn. Today soybean is grown on nearly as many acres as corn, with 36.2 million ha planted this year to corn's 36.4 million ha. Domestic 2017/18 crush of soybean is estimated at 53 MMT producing 42.5 MMT of soybean meal, of which 73% will be used to feed domestic livestock. Of the 11.3 billion kg of oil produced from this crush, most will be consumed domestically. Over 51% of the soybean crop will be exported. Several key developments are facing the U.S. soybean industry as we move into the future. Nearly 2.7 billion kg of domestic demand for soybean oil was lost due to trans-fat labeling of foods and loss of generally regarded as safe GRAS status for partially hydrogenated oils. The U.S. soybean industry has responded to this by developing high oleic soybean (HOS) varieties producing 70-75% oleic acid oil that meets industry-demanded functionality and shelf life. Projections are that 7.3 million acres of HOS will be planted by 2025. Protein levels in soybean have been dropping by 0.04 percentage units per year since 1985. USB research efforts are underway to develop soybean varieties that have higher protein content and a good balance of essential amino acids while maintaining oil content and equal or higher yield. These are being developed with conventional and genome editing technologies, like CRISPR-Cas9. Customers are also demanding soybean products that are sustainably produced. In response, USB led development of the U.S. Soybean Sustainability Assurance Protocol to help reduce greenhouse gas emissions, improve production efficiency, and protect the environment.