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Soybean breeding in the USA for high oleic/low linolenic acid soybean oil

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Soybean seeds provide vegetable oil consumed regularly by many people in the world and a high protein meal that nourishes livestock intended for our tables. Every year, we are challenged to produce more and better food on less land. Research on soybean can address some of those challenges by improving the already successful crop. This research was directed at expanding the functionality of the vegetable oil produced by soybean seeds. Oxidative instability due to the presence of polyunsaturated fatty acids limited the uses of soybean oil without stabilization by hydrogenation. The development of a high oleic acid soybean with a shift from polyunsaturated fatty acids to monounsaturated fatty acids in the seed oil increased the stability of the oil without the creation of unhealthy *trans* fats. High oleic acid soybeans have been developed in the United States by both transgenic and conventional genetic methods. Soybean oil with the high oleic acid trait combined with the low linolenic acid trait provides an excellent solution to the oxidative stability issue. Breeding for the oil improvement with a diversity of sources and across a broad range of maturity groups with the desired herbicide traits and defensive packages presents several challenges to generating a viable new commodity vegetable oil. Nevertheless, in the United States, high oleic soybeans represent a tremendous opportunity to rejuvenate soybean value, and ultimately to provide consumers with healthier food choices.