The collaboration between the IR-4 Project and growers of American ginseng (Panax quinquefolius) is an example of a perfect relationship. Both share a strong passion for success of this specialty crop, they communicate well with each other, and support each other in times of need. This excellent working relationship has led to many accomplishments including the registration of many beneficial chemical compounds to increase the quality of the crop and bolster the success of the American ginseng industry. Without these registered products, growers could lose an estimated 80-100% of their crop. Through IR-4 research, more than 14 products have been labeled for ginseng disease control since 2002.

Growers share a special relationship with American ginseng. This perennial herb is an expensive and time-consuming crop to grow. A minimum of three years is needed to obtain a marketable root. Native to woodlots, many growers commercially cultivate the crop by covering raised plant beds with a thick layer of straw and maintaining artificial shade structures (see picture). This high value crop must be monitored for wild turkeys, plant pathogens, weeds, and insects. After harvest, the roots are cooled in a monitored refrigerated unit for 10 to 20 days and then washed and sorted to remove soil and field debris. Roots are dried in a specially designed ginseng dryer for 14 days, where they are closely monitored. Following drying, roots are trimmed, and sorted again according to size, shape and quality before they are sold.

Cultivation of American ginseng has a long, rich history of more than 100 years in Wisconsin that dates back to the 1870s. The first cultivated ginseng was grown by the Fromm Brothers of Hamburg, Wisconsin during World War II. Revenue from ginseng funded their fox fur business.

Today, 95% of the total cultivated American ginseng production in the US occurs in Central Wisconsin, specifically, Marathon County. This area provides optimal conditions for ginseng production including cool summers, rolling hills, and unique soils. Currently, there are approximately 150-200 growers in Wisconsin who farm approximately 1,500 acres, producing 500,000-600,000 pounds of root. Annually, the revenue is approximately $15 million USD, depending on price and international trade conditions. American ginseng is widely used in Western cultures as a dietary supplement and has been used in traditional Chinese medicine for centuries. In a recent clinical trial, Wisconsin ginseng was found to improve overall energy levels in cancer patients undergoing chemotherapy. American ginseng (Panax quinquefolius) and Asian ginseng (Panax ginseng) are both consumed for health benefits including antioxidant and anti-inflammatory properties, improvement in memory, behavior and mood, strengthening of the immune system, lowering of blood sugar, and anti-cancer properties. The active compounds include ginsenosides and gintonin, which are thought to complement each other to provide health benefits.
included ginseng, and the crop’s yield and quality were suffering. That all changed about twelve years ago when the industry partnered with the IR-4 Project. Dr. Mary K. Hausbeck, from Michigan State University was working with the small ginseng industry in northern lower and upper peninsulas of Michigan and began a regional effort to secure Section 18 labels for needed fungicides. This regional effort across Wisconsin and Michigan, with strong support from the IR-4 Project, has resulted in many key pesticide registrations that have greatly enhanced the yield and limited root rot which was decimating the industry. Every year, the Ginseng Board of Wisconsin in cooperation with Michigan State University and the IR-4 Project host a summer Ginseng Field Day. This full-day program provides an important opportunity to showcase research plots established with grower cooperators, answer specific questions about the crop, assist with diagnosis, and discuss new pesticides and management strategies. Growers communicate their need for future research to be conducted in upcoming years. This system works well as grower cooperators open their ginseng gardens to allow the research work to be conducted and the results can be shared with other growers. Ginseng Field Day was held on Thursday, August 9, 2018 with over 100 participants that included growers, researchers, and industry and state representatives. The day focused on examining the efficacy and crop safety of both registered and experimental conventional and bio-fungicides. Research field stops also included plots that consisted of tank mixes and alternations of fungicides. These plots are important, since they replicate an example of how a grower would use these products in the field. Important diseases of focus included Alternaria panax, Botrytis cinerea, root rot caused by Phytophthora cactorum, root and stem rot caused by Rhizoctonia solani, and root rot caused by Cylindrocarpon destructans. Also included in this year’s field day were plant growth regulator strip trials to de-bud the crop to limit seed production and promote large roots. Herbicides are also tested for crop safety and efficacy against the commonly occurring weeds. These trials are important, as growers currently rely on hand labor to weed and de-bud.

Throughout the Field Day, growers and researchers shared their knowledge with one another about successes and issues that they were encountering over the last growing year. The IR-4 Project’s Kathryn Homa was a featured speaker and discussed with growers the fungicides that have been submitted to EPA for review and other GLP residue projects that are ongoing. Many growers were excited to hear about the pipeline of new products that will be registered over the next few years.

Opportunities such as the annual Ginseng Field Day provide valuable information that aid growers in producing a successful crop by reducing the risk of pest damage. This meeting also strengthens the relationships between growers, industry, researchers, and the IR-4 Project.