

# Hardwood Floor Coating, Pill Binder Win Innovation Awards

Two Purdue University student teams won top prizes for creating new corn- and soy-based products in the 2010 Student Soybean and Corn Innovation Contests.

The winning teams created a substance from soybeans that acts as a binding agent in the production of pills and a corn-based coating that increases the durability of hardwood floors.

This year's contests—the 15th for soybeans and second for corn—featured 23 students on eight teams that created nine products. The competitions, sponsored by the Indiana Soybean Alliance and the Indiana Corn Marketing Council, promote innovation and entrepreneurship. Awards were given at the Indiana Roof Ballroom in Indianapolis.

“Indiana soybean and corn farmers continue to fund these competitions at Purdue because they believe that encouraging students to think about corn and soybeans in new ways benefits our state’s soybean and corn industries in a multitude of ways,” said Mark Henderson, executive director for both the soybean and corn checkoff organizations. “We are excited to see that interest in these competitions continues to be strong and that the quality of work from the students is strong again this year.”



**Danielle Carpenter, from left, Ryan Fox, and Krista Eakins were members of a team that earned one of the top prizes in the 2010 Student Soybean and Corn Innovation Contests. They used soybeans to develop a binding agent to eliminate a drying step in the production of certain pharmaceutical compounds. (Purdue Agricultural Communication photo/Tom Campbell)**



**Samir Shah (from left), Matt Platek, Jordan Esbin, and David Esbin created a soy-based rubber product they hope can be used to replace the rubber in the soles of shoes. (Purdue Agricultural Communication photo/Tom Campbell)**

There were first, second, and third prizes for both the corn and soy competitions. First prize was \$20,000, second was \$7,500, and third was \$5,000.

The Soy Tabs team, which took first place, included Ryan Fox, a nuclear engineering major from Rising Sun, Indiana; Krista Eakins, a biological engineering and pharmaceutical sciences major from Connersville, Indiana; Danielle Carpenter, a biological engineering and pharmaceutical sciences major from Plainfield, Indiana; and Brittany Phillips from Monroe, Wisconsin, who graduated with degrees in biological engineering and pharmaceutical sciences.

Using soy, they created a substance known as an excipient that binds powdered drugs into pills. The soy allowed for a dry, roller compaction method of production, which eliminated a drying step.

“By eliminating the drying process that is a part of wet granulation, we’ve saved time and the money associated with electricity,” Fox said.

The Impact Flooring team won the corn competition with a coating for hardwood floors that makes it more difficult to scratch or dent the wood’s surface. The team consisted of nuclear engineering students Alex Bakken of St. Joseph, Michigan, Tom Grimes of Fort Wayne, Indiana, and Nick Hume of St. Louis. They used radiation to increase the rigidity of a corn molecule to create the coating.

“If we can refine the radiation treatment, it could be applicable for flooring, cups, and many other products,” Grimes said.

Students in the competitions must not only create a product,

but also develop a project budget and marketing plan. Many teams bridge across disciplines to include students with expertise in varying fields from engineering and chemistry to business and marketing.

“These competitions, in my mind, are as good as a paid internship,” said Jennifer Nordland, the competitions’ program manager. “They win awards and gain knowledge and expertise that they might not have otherwise gotten in a classroom setting.”

The students said they learned that product development doesn’t end in the laboratory. “I’d never realized how much work it took to get a product developed,” said David Esbin, a biology major from Carmel, Indiana, who was part of a second-place team that created a soy-based rubber for shoe soles.

Beyond the competitions, the students have the opportunity to continue the marketing of their products. Several past winners and competitors have had success on the commercial market, including making soy-based candles and crayons. Several team members said they hoped to find companies interested in their products.

“That would be really exciting,” said Eakins of the Soy Tabs team. “It would be fun to work with that company and with a process that you started.”

Sweet Swirl, a soy-based coffee additive took third place in the soy competition. In the corn competition, Stove Cover, a corn-based, spray-on film that makes cleaning stoves easier, took second place, and corn-based Peelable Paint, which can be used on cars, sidewalks and tables for kids’ art projects, took third place.



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