

Toyota Boshoku Develops the First Engine-related Parts Utilizing Plant-based Kenaf Material

Kariya (Japan) 14th February 2012 - Toyota Boshoku Corporation (President Shuhei Toyoda) has developed an air cleaner case based on our existing technology that utilizes Kenaf in an aim to improve the fuel economy and also to reduce the amount of CO₂ emissions by reducing the weight of vehicles. This air cleaner case was adopted on the Toyota Crown Comfort starting in January and is labeled under the brand name of the Denso Corporation.

Over the past 15 years the Toyota Boshoku group has undertaken the development of interior parts that utilized fibers from the Kenaf plant, which is an annual grass with strong CO₂ absorption capabilities. However, this is the first time that we have commercialized an engine-related part that utilizes a plant-based material. The commercialization of this part is a major advancement for Toyota Boshoku, as our ultimate aim is for “all automobile interior parts to be made from plant-derived materials”.

For this newly developed air cleaner case, a compound technology that uniformly disperses the Kenaf fibers within petroleum-based polypropylene (hereinafter referred to as “PP”) was established to make the Kenaf completely compatible with the PP. This has ensured the required fluidity for a material utilizing plant fibers that is used in injection-molded parts. An injection molding technique was also established that ensures a high level of product quality, even though the material contains a high ratio of 40% Kenaf. These improvements realized a 10% reduction in weight and a 20% reduction in the amount of CO₂ emissions in comparison to the conventional air cleaner case.

The Toyota Boshoku group began examining the use of plants in our corporate products since the 1990s in an aim to realize a society that is friendly to the Earth’s environment. The plant that best represents the fruit of our efforts is Kenaf because it grows quickly and has strong CO₂ absorption capabilities. Starting with the commercialization of door trim that utilized Kenaf material in 2000, we have gradually expanded the application of Kenaf material in more vehicle models and components. Currently, we are working in Indonesia to commercialize everything from the development of the seeds and cultivation, to the production of Kenaf fiber boards. In the future we aim to further expand the application of plant-based materials, while also continuing to build even more appealing vehicles.



Air cleaner case adopted on the Toyota Crown Comfort