

THE CHOCOLATE POWERED RACE CAR WITH A GREEN FUTURE

IMPACT!

Engineering and Physical Sciences Research Council | IMPACT! Case study 01



↗ 125mph
Top speed of World F3rst
Racing car.

The world's first fully sustainable racing car, developed with EPSRC support, is paving the way for 'green motorsport' and showcasing cutting-edge materials technologies.

A carrot steering wheel, potato starch body and flax fibre seat – no, not a healthy remake of Hansel and Gretel but the component list of a fully functioning high performance Formula 3 racing car.

And with motorsport, including Formula One, under increasing pressure to improve its environmental credentials and cut costs, this green racer could provide the answers.

IMPACT ON THE ENVIRONMENT AND MANUFACTURING

- The steering wheel is made from a polymer derived from carrots. Potato starch and flax fibre are used to construct the body work.
- Biodiesel engine can run on fuel derived from waste chocolate and vegetable oil. Technology could lead to more environmentally friendly road cars.
- The sustainable materials technologies could be used in car production and other areas such as building design and sports equipment manufacturing.

SUSTAINABLE MOTORING

Developed by the University of Warwick's Innovative Manufacturing Research Centre, supported by EPSRC, the World F3rst Racing F3 car is fully operational and fully sustainable.

The car's steering wheel is made from a polymer derived from carrots. The engine cover is recycled carbon fibre and the side pods are manufactured using recycled bottles. Even the lubricants are plant oil based and the wing mirrors and front wings are made from potato starch and flax fibre.

The two-litre turbo engine, as you would expect, is fuelled by biodiesel. But perhaps you wouldn't expect that fuel to be derived from chocolate.

And it doesn't compromise performance – initial track tests proved it could reach upwards of 125mph.

Greener motorsport

Dr Steve Maggs, from the World F3rst Racing project team, said the car had attracted global interest including motorsport officials.

He said: "We have had talks with motorsport officials about 'green motorsport' and there is a willingness within that industry to do it."

"A lot of it is driven by the sport's need to be not quite as expensive as perhaps it appears, particularly to sponsors. Motorsport is still a big British engineering success story so we are trying to tap into that industry."

Showcasing sustainable materials

But he added the race track was only one aspect of the eco-friendly project: "The car is a good way of showcasing what we can do with sustainable materials and biodiesel technology and has created a network of collaborators. "These materials could be used in production cars, race cars or in other industries. They could be used in architectural cladding or sports equipment."

To find out more about the project visit:
www.worldfirsttracing.co.uk

For more information about EPSRC and the impact it is making visit www.epsrc.ac.uk

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