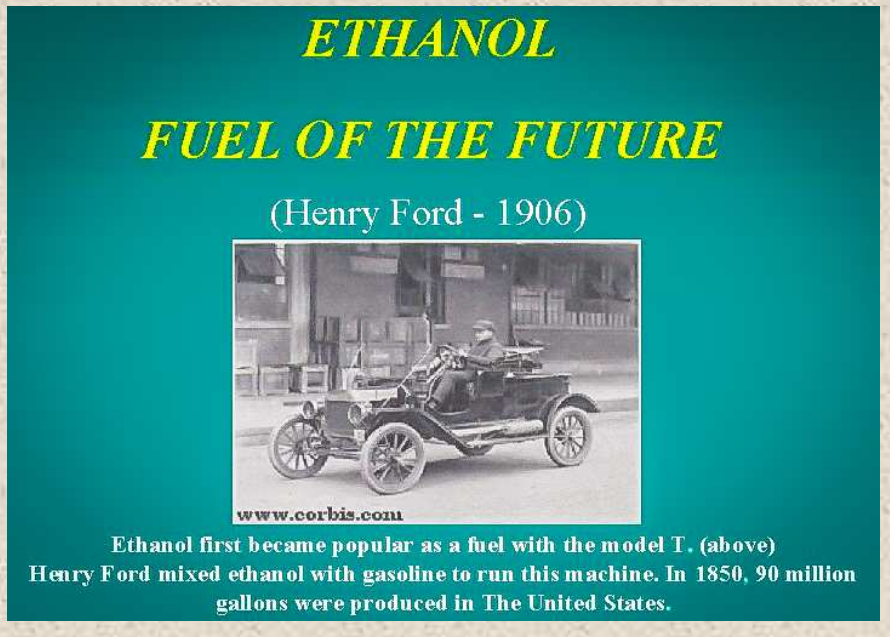
Ethanol, E 10 and Formula 1 2022

By Neville Barlow

Ethanol has been around for a long time. Literature about it has been recorded in the early 1900's, about 120 years ago. Henry Ford was an enthusiastic supporter of it for his Model 'T' Ford in 1906.

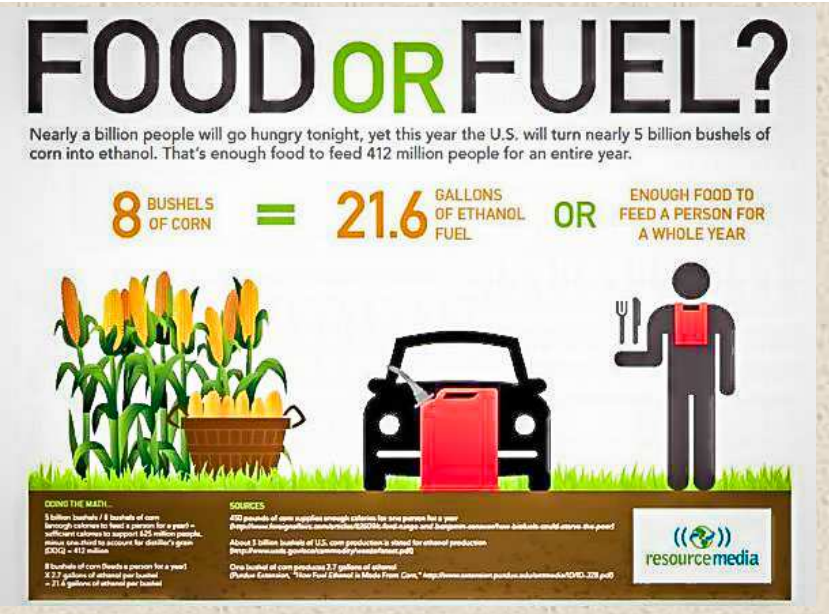


I have recently been reading our Jaguar E-Pace Owner's Manual to see what it says about using alternative fuels. It says "Fuels containing up to 10% of ethanol may be used. e.g., E 5 and E 10".

My research from England reported that recently the All-Party Parliamentary Group for British Bioethanol said the swift introduction of E 10 fuel would help the British car industry cut carbon emissions by as much as taking 700,000 cars off the road.

Ethanol is a relatively low-cost alternative fuel that boasts less pollution and more availability compared to unblended petrol.

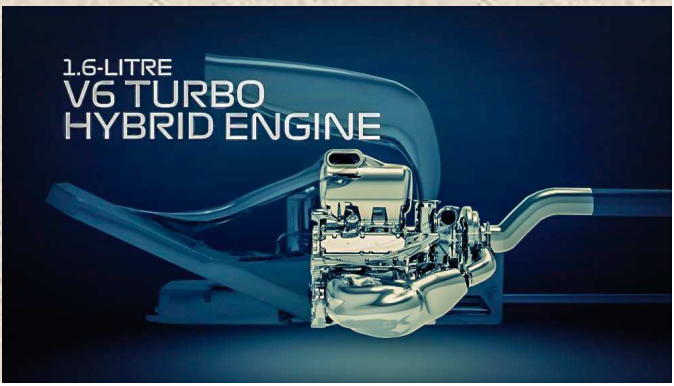
It is less harmful and carbon monoxide production from ethanol is significantly lower than that from petrol engines. It is also easier to source, since it comes from processed corn. Ethanol is not suitable for all vehicles especially older cars but I have read that even those built from 1990 can use this blended fuel. However, it seems to me to be an easy 10% less pollution by using E 10 fuel. It could be a simple step to reducing our so-called carbon emissions problem.



Environmentalists seem to be torn between using Corn for fuel or Corn for feeding the World. With the accepted 10-year life of electric cars, compared to internal combustion cars being proved to not only exude more carbon emissions and cost more to service and replace their batteries, I would think this would be a viable emissions proposition.

At the same time, I have been keeping up with the changes being made for Formula One racing cars. It is one of my passions and I have always believed that 'Racing improves the Breed'. Even so I have been surprised by the regulations for next year especially the fuel that will be used.

Formula One in 2022 begins a new chapter with the current rule book having been ripped up and a radical new set of regulations are to come into force. They are designed to produce even more spectacular racing. The car that all teams will race, has been designed to have greater ground effect which will allow the cars to race closer together and thus allow the following car to have a greater chance of passing the one in front. At present because of disturbed air coming off the front car, the trailing car is buffered around and requires a considerable amount of more power to conduct the passing manoeuvre. New front wings, changed rear wings and larger wheels are all in the package.
The various teams will still produce individual cars but they will look much more similar than other years.

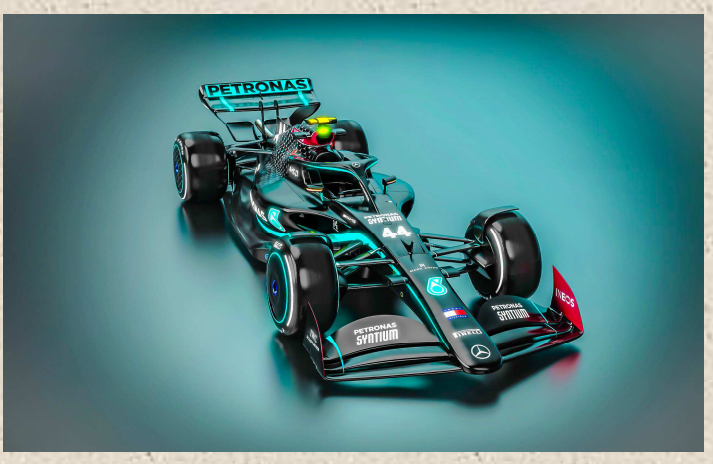


The new car will use the same power unit as 2021 which is a 1.6 litre turbo- hybrid engine which produces the amazing 875Bhp to 1,000Bhp depending on which team one looks at. With such power and very light bodies these cars must feel like they are flying. Top speeds in 2021 were said to be around 400ks an hour.

One of the biggest changes is the fuel that will be used. In 2021 the regulations stipulated fuel containing 5.75% of bio-components. The new regulations state that this will rise to 10%. That will be achieved by a move to 'E 10 fuel'. The ethanol must be a second-generation biofuel made in a sustainable way, meaning it will have to have a near zero carbon foot print.

There are three generations of bio fuels. The first fuels were largely made from stock food and were not sustainable. Second generation bio fuels use food waste and corn husks, Forestry waste and house hold waste. Finally, there is the third generation of bio fuels, sometimes called the e-fuels or synthetic fuels. These are the ones that can be used in almost any engines without modifications. These are the type of fuels Formula One is hoping to eventually end up with.

Chief Technical Officer Pat Symonds says "Formula One is not going electric but we hope it can show how the sport will lead efforts to change how the Internal Combustion Engines will work in the future. The path to produce a fully sustainable fuel (the third-generation biofuel) is not completely clear at the moment but in partnership with the FIA, the engine manufacturers and the fuel companies, there should be a pathway. While it seems that many new vehicles are going the electric way, more than 90% of the world's cars are still powered by Internal Combustion Engines (ICEs) and there are ways to reduce carbon emissions.



As these sustainable fuels will be synthesised, they will be cleaner, and will do away with elements of fossil fuels such as sulphur. It could lead to performance gains and to less fuel required. When the next engine comes along, we will have a chance to tailor the engine and fuel together. What we can do is to show the world that there is an alternative to electric power and there are alternatives to storing electricity other than in 'dirty' batteries".

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