

Fuel Facts Vol III: Performance

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by Dragon Racing Fuels



In volume two of fuel facts we had a summary of what to look for in a two-stroke fuel. In this segment of fuel facts we are going to cover the important thing to look at when choosing a four-stroke fuel and we will also hear from an engine builder that has worked with some of the best riders in the industry and some of the

fastest bikes on the track.

The first thing every engine builder and racer looks for in a race fuel is Performance. You need to know what makes a fuel perform in a four-stroke and what has very little effect on performance. One key thing that does not equal performance is, using too high of an octane. I know that you have read this in the first segment of fuel facts but it seems too big a misunderstanding with racers when choosing a fuel. Octane is only a measure of antiknock and you should only use a high enough octane to protect against the death rattle in your application. Most four-stroke engines, stock or mod, perform the best from a motor octane in the range of 90 - 98.

The Burning speed is a big part of the equation in finding a good performance fuel for the four-strokes. A fuel that burns too slow will cause the bike to run as if it was jetted rich and the fuel will continue to burn in the exhaust, which can cause engine temperature to climb. If the fuel was to burn too quick then it would cause the bike to simulate a lean condition and power would suffer as the rpm's are increased. This will also cause an engine to run hotter than normal.

The cooling effect or heat vaporization is also a key part of the correct fuel for your bike. We all know how hot today's four-stroke bikes can run during a long moto. The better the fuel's

heat vaporization, the better it will cool the piston and valve train. It will also allow the intake to be cooler and denser.

A fuel that has the correct octane, burning speed, and has good heat vaporization for your bike will also contain the highest energy value. The higher the energy value the more Btu's the fuel will produce.

I had the chance to set down with Naveen Dassanayake and ask him what his thoughts are on racing fuels.

Here is the conversation that I had with Naveen,

I know that you have been involved in this sport for many years and at many different levels but for those that may not know, give us a history of Naveen and what you have been involved with?

My whole family was into racing in Sri Lanka, It started two generations ago when my grand-uncle worked for Mr. Soichiro Honda in late 1950's. Then my dad had few Honda dealerships and he raced road racing his whole life. As far as I could remember all I did was go to races and watch them build race bikes. There's a Motocross track like 2 miles from my house so I started racing motocross (of course on a Honda, CR80-air cooled..) a lot. I won a few national championships when I was younger. But a crash and two broken back injuries got me out of Motocross racing and into Road racing where I became Four-stroke Open Champion (yep, on a Honda, HRC-kitted CBX 1000).

I always worked on my bikes. At this time my mother had been living in the states, and she talked me in to going to school here...I knew I wouldn't be racing competitively forever and decided that I wanted to become a mechanic so I can be involved in the sport I love. So I enrolled in MMI in Phoenix. I basically lived in my van while going to school, sometimes sleeping in the school parking lot. After acing all the classes at MMI, I graduated as the best student in my class. I then started looking for a job. I had heard of Honda of Houston, and had some friends in Houston, so I took a chance and headed there. I started out as a line tech, but became friends with Shaun Martin and started going to the track pretty much

every day. After a while I got to go to the races with the race team. The learning curve was really steep! We had some really fast kids on the team, Tommy Hahn, Wil Hahn, and Josh Grant. I became really good friends with Josh and his dad Mike, so when they got the offer to go to Factory Connection, they wanted me to wrench for them. It was a hard decision, but I always dreamed of being a factory mechanic, and Josh was SO fast. Again it was a steep learning curve, but we won some races and I made some relationships that I will have forever. Deep down, I knew that I really wanted to build engines, and the best engines at that. The guys at Honda of Houston still had their race team, and I was still great friends with them, so I made another hard decision and went back to HHR to help build an in house motor program. Since I have been back, we have made great progress with the engines and the whole program. We have a great team at the shop and we totally understand each other and what we want to accomplish. I really enjoy helping these kids achieve their dreams, and I get to achieve mine at the same time.

What more could you ask for!



With all your years of testing, what is it that you look for in a race fuel for today's four-strokes?

First of all, Performance...as a motor builder better performing fuel makes my job that much easier.

And when you start modifying engines you have to take things like octane, burning speed, cooling effect into account. Especially on four-strokes a lot of people think getting the highest octane race gas you can buy is the best for your bike, truth is getting the fuel that best suited for your engine.

Burning speed helps to determine which fuel best releases its energy to build maximum cylinder pressure. Fuels that still keep burning after Peak cylinder pressure do not help to gain performance. Fuel that helps to build the best Cyl. pressure means the best power to the rear wheel.

Also new four-stroke motocross bikes can run very hot...there for you can use race fuel that has higher heat of vaporization to keep the intake mixture cooler. The gain is not as big as in two-strokes, but it really helps to keep the valves, piston crown and intake charge cooler!

What do you feel is one of the advantages of using a race fuel besides the horsepower gains, if any?

Mostly with race fuel you get the consistency that you need when you are building horsepower. With pump fuel, you not only get some substances that don't burn completely, but you get something different every time you go to the pump. I know that when I use a race fuel, it is the same burn every time. So I can build the power we are looking for.

Also race fuel burns a lot cleaner. When you take apart a motorcycle that runs race fuel, there's hardly any carbon deposits on valves, piston and exhaust port. This really helps for longevity of the components. I always tell my customers to at least mix some race gas to pump gas 50:50.

If you are very serious in to performance, you can have race fuel custom blended for your specific need. Some of the new blends Dragon Race Fuel offers started as custom blends, and after countless hours of testing on and off the track they came up with some of the best performing fuels out there. So, when I need race fuel for certain application, I can order straight from their catalog and I know what fuel does the job.

Let me narrow the bike selection down to the 2009 Honda four-strokes. What race fuel do you like to use in the new 250f and 450f and do you see any jetting changes from stock? All our race team guys run Dragon Race fuel, same stuff anyone can buy off their catalog/website or dealers.

For stock class I highly recommend DRAGON JM-PRO!!! Horsepower gain with right jetting is huge! Best feeling is when your riders pull the biggest Hole-shots and WIN! As far as Stock Honda CRF 150R and CRF 250R you can't go wrong with JM-PRO.

As far as jetting goes on CRF 250's you have to do minor adjustments to the jet needle and

leak jet, as far as pilot and main stock setting they should be very close. CRF 150's we are going up on pilot (1-2 sizes) and going down on main (1-2 sizes). Again this is just a guide line, your jetting should change according to weather, altitude, etc.,

For all the MODIFIED bikes we use DRAGON JM-6. Also it's a good fuel for CRF 450 also since it helps to keep the bike cooler. Especially for 2009 CRF 450, JM-6 works really well with Stock fuel maps. As far as 2008 and older 450s' we go one up on pilot and one down on main.

Since we Started running Dragon Racing Fuels last November, I'm very pleased with the performance, Sponsor support and especially Trackside help they have provided us and their fuels are more affordable and better performing than other brands. They (Especially you Mark) go out of their way to help all the kids; I just want to take this opportunity to say THANK YOU!!! Starting at the MINI-O's, so far we have 14 amateur titles in a few short months....and counting.

Naveen, Thanks for your input about what you look for in a race fuel and a few jetting recommendations for the Honda's. If you are serious about your racing make sure you spend your hard earned money on the best fuel for your bike. Whatever your favorite brand of fuel is make sure you are using the best fuel for your application and I will see you on the podium.