

The suppression solution

Dan Reese, CEO of BLAZETAMER380 USA explains wildfire suppression culture in America and what sets their technology apart from the rest

Dan Reese has over 20 years of leadership experience in aerial wildfire suppression, yet his passion for the industry is as strong as ever.

With a career including serving as Deputy Chief of Tactical Air Operations at CAL FIRE, Reese knows all about the importance of efficient suppression, a motivation which has led him to recently taking on the role of CEO for BLAZETAMER380's American operations.

In this interview with Assistant Editor, Isabelle Crow, Dan discusses

why he believes BLAZETAMER380 are challenging the culture of wildfire suppression in America and how they are making strides in innovation.

Would you be able to offer a brief description of BLAZETAMER380 and why why it is making a difference to aerial firefighting?

BLAZETAMER380 is one of the newer innovations on the United States Forest Service (USFS) Qualified Products List (QPL). I refer to us as being a newer innovation because BLAZETAMER380 is the





only elastomer chemical available for fire suppression. It is a polymer technology that makes water more effective when they are mixed, which makes it a water enhancer. Water enhancers only work when the water is still in it and it hasn't evaporated. This is what sets us apart from retardants because they work when it is dry and we work when it is wet.

“The challenges faced in North American wildfires are not unlike the same challenges faced by the rest of the world.”

We are also classified as a gel, even though this is technically not what we identify as; we have been shoehorned under this definition because we offer such a new technology. Nobody has figured out we need to be classified differently!

BLAZETAMER will absorb water and has elastomer traits that hold the water molecules together. We don't just absorb water as a super absorbent polymer. The main component of our chemicals is used to treat potable water, food, crops, plants and to stabilise soil. BLAZETAMER380 is extremely safe, which is one of the things that I really love about it. We are the only solution that is termed non-Newtonian, which is a fancy term for how a fluid acts when energy is applied to it.

There are two types of non-Newtonian fluids: shear thickening and shear thinning. If you've ever gone to eat out and got a burger, when you try to pour the ketchup

and it has been sitting there for a while, nothing instantly comes out. So, we do one of two things- we take the lid off and bang the bottom of it so the ketchup shoots all over the burger, or we put the lid back on and shake it. This energy created is called shearing and it can be represented as either sheer thinning or sheer thickening. When you apply energy to the ketchup bottle by shaking it, the sheer thins and so when you take the lid off it just pours nicely over your burger.

This is a bit of a metaphor for what sets BLAZETAMER380 apart, it's on the sheer thickening side, which is a big deal for aerial firefighters when it comes to dropping something from their aircraft, especially when it is moving at a high rate of speed. When BLAZETAMER380 is exposed to shearing energy exerted by being dropped from an aircraft, the bonds holding the hydrogen atoms together in the water strengthen, so it basically holds the water together. Instead of dropping billions of droplets that are prone to drift and evaporate, BLAZETAMER380 comes out like a wet blanket and drops over the fuel bed. This ensures firefighters can get the fluid exactly where they want it on the fire to make an impact quickly.

What unique challenges do you think North American wildland fires present?

The challenges faced in North American wildfires are not unlike the same challenges faced by the rest of the world.

We are now seeing fire in environments where we do not typically see fire, such as places in Europe that are burning. However, in North America specifically, our wildland fire culture has been built around utilizing long-term retardants- not suppressants. ▶



Often agencies, their strategies and how they attack the fire are not based on actual direct suppression, which I think is the biggest challenge that we face. This can be policy driven; it can be the result of a lot of different things. Working with agencies to try and understand new generation technologies is also a huge challenge because the fire service is steeped in tradition and people can be shy of new innovations. This is often simply because it is not what they are used to and so it forces people to look outside their comfort zone. A lack of access to education and proof of concept within the agencies contributes to these challenges.

Ultimately, at BLAZETAMER380 our main challenge is that the current culture in America is centered around using retardants, whereas our product is a suppressant.

Alongside suppressing wildfires, BLAZETAMER380 helps to reduce hazards for firefighters, why does a product's impact on health need to be at the forefront?

Having been a lifetime firefighter myself, I consider myself to be one of the lucky ones because I have a lot of friends that weren't so lucky. These are friends and colleagues who either succumbed to the fire itself to stress, or passed away because

of the exposure to chemicals that gave them cancer. I have personally experienced a cancer diagnosis, which was fortunately caught early.

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The environment and the impact on firefighters are a real concern and so our solutions have been put through the toxicity testing that the United States wants the USA and the US Forest Services to have to get on qualified products lists- we passed all those with flying colors.

Polyacrylamide, which is the main constituent of our solution is used to treat potable water and is even used on crops. When it gets super-hot outside, the chemical can be used to trick the plant so that it thinks it is

cooler than it is. This is beneficial as it prevents the vegetation from being negatively impacted by hot conditions.

Other benefits of BLAZETAMER380 are that it doesn't increase the weight of the water, and it can be onboard injected. If you were to use 800 gallons of a long-term retardant, this increased the weight of the water by 1lb- this means that if you drop 800 gallons then you drop 800lbs of chemical across the landscape. Whereas, if you completed the same drop with BLAZETAMER380 as the suppressant, then the same 800-gallon drop would equate to 16lbs- a drastic difference. ■



Dan Reese
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