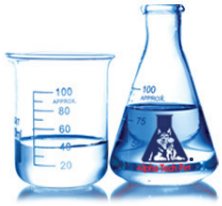

What about Quats and Parvo?

Can Quats kill parvo? Oh not again, not another article about Quats and parvo. Well, before you put this article down, hold on for a moment and read on, because there's a good chance you're going to learn some things that might shed newer light on years of controversy. Without a doubt the Quat/parvo subject has been a convoluted mess containing a storied history with lots of debate spanning a considerable number of years now. This is because there have been substantial misunderstandings about testing, reporting inaccuracies, numerous competitor combatants, and confusions between criteria, methodologies for meeting established criteria, and various products whose only common denominator happens to be that they reside within the same family of chemicals.

Now for those of you who don't want to spend the time wadding through this article, the short answer is both YES and NO. It all depends upon which Quat formulation you're talking about, understanding what testing methodologies actually reveal about efficacy claims, and who you choose to believe and what information they are referring to. As a lone chemical, Quats by themselves definitely have difficulty killing parvo. But the beauty of Quats is that they play well with other chemicals and they most certainly can be formulated to kill virtually anything, including canine parvovirus (if done properly). It's the reason Quats have been so popular over so many years in a wide variety of industries. That's the short answer. For the longer answer, read on.

Up until 1997 the efficacy testing criteria recognized by the EPA for bacteria and viruses was the AOAC (Association of Official Agricultural Chemists) Use Dilution Test Methodology. In 1997 the EPA expanded the scope of allowable testing, moving beyond the modified AOAC Use Dilution Test Methodology (for viruses), to also include virucidal effectiveness testing (ASTM E1053-97), and during this time methodology enhancements for meeting established criteria further evolved which tightened the belt for meeting testing compliance. And herein lies the rub that has created the controversies – the confusions surrounding testing methodology refinements and evolutions, the timing of the changes, the differences in performance between laboratories and individuals employing these changes, and the fallout resulting from these methodology enhancements over the years. And to make matters even more confusing, depending upon whom you speak with, you will get different stories about the specific history of these issues.

As testing methodologies were refined and enhanced, canine parvovirus testing (which is one of the toughest microorganisms to kill) at the then current Quat labeling dilution rate (2 ounces per gallon of a 1:64 concentrate, ½ ounce per gallon of a 1:256 concentrate) experienced failures which resulted in various companies (who had experienced failures) removing canine parvovirus from their labels. This should be no surprise. If a test methodology is tougher to conform to, more failures will be experienced.

It is important to point out at this juncture that the AOAC Use Dilution Test Methodology has always been a controversial methodology due to its validation inconsistency from one test to another even when performed under ideal conditions (allowing for a fail rate of only 1 out of 60 tests). In other words, if a product is able to demonstrate a satisfactory microorganism kill 58 out of 60 times (yet a fail rate of only 1 out of 60 is allowable), according to the EPA, the product would be deemed to have been a failure against the microorganism it is tested against (but is it really?).

The AOAC Use-Dilution Test methodology is notoriously variable, on the basis of statistics alone (a product that produces a "passing" 1+/60 on average will fail the test some appreciable percentage of the time). Antimicrobial Testing Laboratories – Round Rock, TX

Furthermore in real life, surfaces can only support 10^2 microorganism growth; yet the EPA picked a requirement of 10^4 microorganisms for satisfactory bacterial labeling kill claim capabilities (a factor 100 times

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greater than what would be experienced in reality even under the dirtiest of conditions). And if that were not enough, the controversy is so significant, that the EPA is considering further changes whereby manufacturers may soon be required to meet a 10^6 log kill requirement on bacteria (but with a failure allowance of 6 out of 60 tests). The mere fact that the EPA is considering this magnitude of change, voices evidence of the current methodology's inconsistency.

So where does that leave us? As companies sought resolution to the parvo issue, it was determined a stronger 4x concentration (along with proprietary formulation enhancements) from the then standard labeled dilutions for canine parvovirus could solve the problem, stand up under the scrutiny of enhanced methodology requirements, and provide 100% viral inactivation (for some of the companies). As a result, there are again now multiple Quat products on the market with labeling claims (at stronger dilutions) for canine parvovirus efficacy (ready-to-use products as well as concentrates).

Because of the substantial misunderstandings that have gone on for such a long period of time, ongoing controversy surrounding canine parvovirus will likely continue to exist for a good while. This is because: (1) a proper understanding of the history of testing methodology evolutions on Quats has been lacking (which hopefully this article sheds additional light upon), (2) some have simply referenced outdated information, forming conclusions based upon that information, (3) others have performed independent testing on products at dilutions not truly capable of killing parvo, or they've utilized formulations not capable of performing as stated on their product labels, (4) testing for canine parvovirus is very particular and mandates stringent controls and approved validated techniques to have reproducible confidence in the methods employed in testing, (5) some Quat manufacturers have not been able to realize these same newer results. And the only way those Quat manufacturers can compete against others who can substantiate claims is by creating FUD (fear, uncertainty, and doubt) about their competitor products. This only serves to further fuel the fire of the illusion that Quats cannot kill parvo, and finally, (6) Other non-Quat formulation manufacturers do the same thing and are more than happy to join in "Quat-bashing" as it only serves to further their own cause by promoting their own products.

So the better question isn't, "Can Quats kill parvo?" But, "Why can't all Quats kill parvo?" The main reasons for this are as follows:

- There are three major Quat manufacturers in the world. Only one of the manufacturers utilizes a 99% pure Didecyl Quat. The other two utilize a Didecyl Quat that is only 80% to 81.5% pure. Quat purity is one reason why some Quat products can validate parvo claims while others still cannot.
- A second major parvo differentiator rests in the concentration of Quats utilized in individual formulations. Some Quat formulations just don't employ a sufficient concentration to kill parvo, and this bullet point is also directly related to the one above it, Quat purity.
- A third major parvo differentiator resides in the formulation itself; the particular combination of surfactants, solvents and other in-actives utilized in individual proprietary formulations.

As stated earlier, "the beauty of Quats is that they play well with other chemicals and they most certainly can be formulated to kill virtually anything, including canine parvovirus." It's the combination of Didecyl Quat purity, overall Quat concentration, and a particular formulation's surfactants, solvents, and other in-actives, that makes the difference on whether a particular Quat formulation can validate efficacy for parvo or not. Plus, at least one of the major Quat formulators is in possession of verified EPA validated data under AOAC and ASTM E1053-97 testing that's as current as of the end of 2005; testing on canine parvovirus that's recent enough to be sufficient for the upcoming EPA RED (Re-registration Determination) that will be visiting Quats over the next couple years.

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Dr. Seitz has a diverse business background through a variety of business affiliations. After serving in the U.S. Naval Air Corps, he graduated from Michigan State University with his Doctorate in Veterinary Medicine and began private practice. He then went on to develop and build a veterinary product distributorship for one of the nation's largest Pet Product Distributors. Following that success, he moved to New England to take a position with a billion dollar a year medical supply manufacturing company and was instrumental in their efforts to build and develop a dominate presence among the veterinary community throughout the United States. He then left that position to start Alpha Tech Pet, Inc. in 1989, with a focus on developing, manufacturing, and marketing various environmental products for use in the animal care industry. Since that time he has established a strong presence in the marketplace with sales of nationally branded items throughout the United States. He also serves on the New England Board of Governors for Hope International, a Christian non-profit organization committed to microenterprise development, helping the poorest of the poor around the world start small businesses. Dr. Seitz is married with two children and believes solidly in commitment to strong family values. His favorite activities outside of work are reading the Bible, spending time with his family, golf, and serving in the church in which he and his family attend.

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