

Ozone – Background Information

Prepared by Sean & Farrell, owners of the 1824 House

(Please note: I am no expert on disinfecting. I do have a biology degree, but it was large animal based not microbiology based. Very different!)

Disinfecting in the Mad River Valley

As we all try to figure out the best way to “clean” our homes (yes these are our homes) there are many options we have all been looking into. I do not believe there is 1 “right” answer. But here are some information to hopefully help.

First, we (me included) have all been interchanging the words Sanitizing and Disinfecting, so I wanted to make sure we are using the proper terminology. Here is a basic differentiation:

Sanitizing is meant to reduce, not kill, the occurrence and growth of bacteria, viruses and fungi. **Disinfecting** a surface will “kill” the microscopic organisms as claimed on the label of a particular product. ... The minimum level of effectiveness in a modern-day **disinfectant** is 100 percent kill of 6 log₁₀ of an organism (99.999999%). All of the disinfecting options I will cover have 1 thing in common, they kill organisms, so they probably aren’t really healthy for the user. Just as you shouldn’t expose yourself to chemicals like bleach, alcohol, or high concentrations of hydrogen peroxide, you should not expose yourself to ozone, chemical fogging agents or UVc light. Of course, please follow the guidelines that come with your disinfectant choice.

So, put simply we are trying to disinfect not sanitize our rooms. We also need to remember, before we disinfect a room, we still need to clean it. Just as it is recommended you wash your hands properly and then disinfect them. We should be doing the same in our rooms. Here is a link to the CDC cleaning-disinfecting page:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>

We have developed a comprehensive cleaning check list which we have adapted over the years based on our location and needs. It is extensive. We give it to all our employees to work from when cleaning a room. Of course, right now we are the only employees, so we do not officially check off the list but typically just check on each other’s work as we each have our strengths and weaknesses in cleaning. We (Farrell) are

in the process of making it covid-19 safe. We are happy to share it as well.

Ozone (gas):

Farrell and I have decided to use Ozone based on experience in a winery setting where we saw great results. For us, we decided when we purchased the property, we wanted to make sure we offered the “cleanest” lodging and event space possible. Ozone was simply 1 part of our cleaning practices. Now with the introduction of Covid-19, we are very happy we purchased the machine. We purchased a larger machine than our guest rooms needed, but we have an event space to consider as well. There are several machines available. Ozone is a powerful and quick oxidizer. It does not need a long contact time to disinfect at proper concentrations

Benefits include:

100% organic

The ozone gas can penetrate soft surfaces and hard to reach spaces. Ozone gas has a short half-life, so it safe to enter a room shortly after disinfecting

Ozone also helps with “off putting” odors including smoke, body odors, pets and others

No ongoing costs

Drawbacks include:

Upfront cost

Needing to wait to enter a room.

If rooms are close together you may not be able to ozone a single room without the gas getting to the next room. You must be careful with guests and staff present.

Chemical fogger:

There are several different foggers available. They range from individual cans (similar to a flea and tick or bedbug fogger) to large machines which can cover larger spaces. The basic premise is spraying a chemical as a mist to touch as many surfaces as possible to disinfect.

Chemicals can penetrate hard to reach spaces.

Lower upfront cost if using individual cans

Drawbacks include:

Recurring costs: need to keep buying chemicals

Large upfront cost if purchasing a larger machine

Needing to wait to typically an hour to enter a room.

If rooms are close together you may not be able to ozone a single room without the gas getting to the next room. You must be careful with guests and staff present.

As this sales pitch from one of the fogging companies states: "The fogger will release a powerful fog that disperses disinfectant content throughout the entire space. After hanging briefly in the air, **the fog will settle on various surfaces**, disinfecting and deodorizing everything it touches." **You now have a chemical on all your surfaces.**

UVC light:

UVC light is a strong disinfectant and widely used in the medical field. There are a number of different options for this as well, from hand wands to "cell phone" boxes to room size machines. Please be aware several of the cheaper options do not use UVC light and basically have no disinfecting properties. UVC light can be harmful to humans and you should wear protective equipment or not be present during its use.

Benefits include:

100% organic

No ongoing costs

Low upfront cost if using smaller devices

Can enter a room immediately after disinfecting

Secondary rooms will not have exposure

Drawbacks include:

Upfront cost if using larger devices

The light rays must hit all surfaces to be effective.

The exposure rate for disinfection ranges from 10 seconds to 30 minutes, just quite a variation.

Disinfecting chemicals:

There are a number of chemicals the CDC recommends for Covid-19. The link is below. I will not get into the individual chemicals. I think we all know the pros and cons of using bleach and other chemicals: they can be effective but also not great for all surfaces. It's important to note that some of the chemicals require over 10 minutes of contact time to be effective. Please reference the list for more detail.

Farrell and I have used diluted vinegar and 70% alcohol for a number of years as our "cleaning" for a number of years. We actually started when Farrell was pregnant and couldn't stand the smell of bleach and other cleaners.

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

I hope this helps and am happy to talk to everyone and anyone about any of this.

Sean (and Farrell)

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