Green Water Experiment

(Aug 10~12 , 2006)

I am preparing a test facility to product the Green water for some specific reason. We had made a decision to culture Chrollera in our culture tank (tank-3). The test kit has been completely installed by Aug 10 around 14:42 Hrs. We had put around 10% of Chrollera concentrate in tank-3. You could see its color was really green.

This is a photo from top view of my culture tank and Black treatment tank

We had start up a small pump (for gold fish tank). Then the green water has been pump into the upper tank.

We also a moving bed media, BCN-009, in the treatment tank. We also put 1 air-stone in the treatment. At first, we plan to make a Treatment tank as a Moving Bed treatment unit.

BCN-009 that we used was token from my Fish Tank. It had been used in Moving Bed tank for more than 3-4 months. These would ensure that both Nitrobacter and Nitrosomonas are properly form on its surface.

This is a photo of Green water color in the culture tank. It was really green color. You could not see the pump or basin floor.

In morning of Aug 11, we found that the Green water are not in a good condition. It seem that Chrollera are going to die and disappear from the culture tank. This is an unexpected even. In the matter of fact that we expect to get more green water. We don't want to eliminate them. But we have done.
Most of Chrollera sink down to the basin floor. Its color looks so fade. So, I think that my assumption on how to culture Chrollera was absolutely wrong. We had make a system that kill Chrollera, not culture.

We think that the Chrollera die because NS and NB had chasing NH3 and NH4+ form Chrollera. All ammonia had been turned into Nitarte. Then Nitrate has been suddenly occupied by Chrollera. Where no more additional ammonia in the system(we did not put any nutrient in the water after the first time), Chrollera had no more Nitarte. That why Green water drop after 1 day under Moving bed operation.

So, I had made a decision to stop Moving bed test. Air-stone had been token out in the afternoon. By the way, the circulating pumps still operate. I want to see the result of BCN-009 media where it was acting like a Mechanical filter, instead of Biological filter. By the morning of Aug 12, I was really surprised that all faded Chrollera had been filtrated out with my BCN-009 Mechanical filtration Tank. The water was really sparking clear. So, we can see the circulating pump and basin floor with no doubt.


12 7:40

Now BCN-009 all are floating with no moment due to no air-stone. But circulating pump still operates.

I had stirred the media in the black tank again. Try to remove all Chrollera from the tank. Then we could see that the discharge water quality had changed suddenly. It turn to be unclear.

I could not wait until it turn to be clear as I have to bring my family to go outside for the whole day.

I’m home again around 16:00. It makes me a big surprise. The BCN-009 in the black tank had shown us a superior performance on Mechanical filtration job not also.

So, we can used BCN-009 as Mechanical Filtration in the 1st Chamber (with no air) by let them free floating around. Then we can used the same BCN-009 in the 2nd Chamber as Moving bed media by putting an air to fluidized them freely. The 3rd Chamber can be set as a sedimentation chamber. No need to put any media in. By the way, if you fill inconvenience with no-media chamber, you can put BCN-009 as a Final stage mechanical filtration also.

How to Clean BCN-009

Lots of Dead Chrollera had been trapped by BCN-009.
BCN-009 had been designed with 95% void. Each pcs. are individual like small cylinder and can be separated from the group. These make BCN-009 easily to be cleaned with pressure water back wash. These dirt can be easily flushed. More over, in case of the 1st Chamber where as the BCN-009 work as fixbed media, you can use the air (may be oxygen ring or something similar) to fluidize them for 5-10 minute. Then all trapped dirt will sink down completely. So, you can easily drain all these dirt or sludge later.


12 7:45