

The Corona Triangle: Hypothesis on the emergence of COVID-19 and the need for global agrovigilance by Dr Immo Norman Fiebrig from Germany

Video transcript. Source: farmsnotfactories.org.

I would like to explain how COVID-19 may have emerged through bats in their relation to intensive pig-factory farming and its agro-industrial complex – this is in line with a discussion paper published on ResearchGate on May 20, 2020 together with my co-authors Dr Larissa Bombardi and Pablo Nepomuceno from Brazil.

https://www.researchgate.net/publication/341525356_Hypothesising_on_the_emergence_of_SARS-CoV-2_through_bats_Its_relation_to_intensive_pig-factory_farming_and_the_agro-industrial_complex

My name is Dr Immo Norman Fiebrig from Germany, I am a licensed pharmacist and I did my PhD in biochemistry. Amongst the many things I learnt from my early research work is that pigs' organs, their digestive system and the structure of their mucous secretions are very similar to human's.

The striking similarity between pigs and humans is also the reason why pig's heart valves have been used to save the lives of people with heart valve defects. The pig has been kept traditionally by humans as a domestic animal because it happily eats and converts our food leftovers to protein.

This leads us to the concept of zoonosis. A zoonosis is an infectious disease that jumped from a non-human animal as primary host, to one human and from there to other humans. This risk for zoonoses may have started with human populations augmenting and threatening other animals' habitats. On the other hand, animal husbandry from early peasant farming may have caused the necessary long-term co-existence between formerly wild, now domesticated farm animals and human beings. However, whether a zoonosis causes no symptoms in humans at all or instead turns into a life-threatening pandemic crushing modern civilisation, is another story.

The risk from zoonoses however may have risen drastically within the last decades as a result of global factory farming. In these industrial systems, the creatures are turned into protein producing machines void of dignity. They become more vulnerable to disease because of overcrowding related stress. Any emerging zoonosis might not have been monitored and reported adequately here. The MERS and SARS-CoV-1 pandemics from the recent past should have been a warning of the potential lack of appropriate and global risk management practice.

The narratives about the emergence of COVID-19 in the media seemed to me more like a desperate struggle to find a scapegoat, be it a bat, a pangolin or a virus engineer. I spoke to my colleague Larissa about my doubts. She is Professor of Geography at University of São Paulo and a leading expert on the use of agrotoxics in Brazil. She told me that she knows Wuhan primarily for its high density of pig factories and not so much for its wild animal markets. That sparked off a series of thoughts and associations between the two of us which led to a sort of science fiction narrative I called 'The Corona Triangle'. The epidemiologic combination of circumstances involved bats as primary host, factory pigs as secondary host and humans as tertiary host. I cannot get into detail here but you are welcome to read it on ResearchGate.

To support our 'corona triangle hypothesis' we mapped cases of COVID-19 in humans in the State of Santa Catarina in Brazil. Pablo, researcher and specialist technician in Geo Information Systems (GIS) at University of São Paulo's Geography Department, supported us. He overlaid maps of pig factory farms. Stuningly, there was a strong overlap between high pig densities in the inland part of Santa

Catarina and high COVID-19 infection rates in humans in spite of relatively few people living there. So, we asked: Did factory farm workers get “re”-infected from diseased pigs before infecting once again their community? This is assuming pigs got infected through humans during the worldwide spread of the epidemic.

Only a few days after our conspicuous mapping results, the media reported outbreaks of COVID-19 precisely in factory farm workers and slaughterhouses workers for Germany, the Netherlands and the USA – barely four weeks later for Brazil and today all across Europe. But so far, nobody in these reports related any of the outbreaks to re-infections - I call them revert infections – through pigs. They would rather relate the outbreaks to the housing conditions of the workers infecting one another which would certainly also be a factor. We are currently mapping other areas – whilst fighting for essential funding and data. Any such support would improve and speed up the generation of more reliable evidence and we explicitly welcome persons or entities willing to come forward with support to map other countries and areas.

What seems to be lacking completely is a will to test the pigs for SARS-Cov-2 – Germany is at the moment passing a law to test pets: cats and dogs, but not farm animals and at least to our knowledge as yet there has been no published study confirming pig infections using virus tests. We are willing to collaborate with such evidence to corroborate geographic matchings with virus testing on farm and in slaughterhouses. Proving there is a risk of revert infection would cause tremendous economic damage to the agro-industrial complex worldwide whilst saving hundred thousands of human lives and livelihoods. But industries – unless forced by law - tend to put profit over people.

Finding a vaccine to mitigate a zoonosis outbreak is hugely more expensive than finding the root cause by screening pigs and other farm animals such as poultry or cattle for SARS-CoV-2. Not testing would constitute from my point of view veterinary and medical negligence, especially under exigent circumstances. However, discovering and producing a vaccine within a climate of fear of a new pandemic wave is certainly going to boost profits of pharmaceutical industry.

It is high time to implement a system that pharmaceutical industry itself has put in place a long time ago to monitor and mitigate drug related risks in the wake of the thalidomide scandal. They call it PHARMACOVIGILANCE. Agricultural industry must set up publicly controlled AGROVIGILANCE to manage the risks to humans in intensive, industrial livestock production. Such requirement must be part of a larger international and urgently needed anti-ecocide law. To conclude this, may I cite primatologist Jane Goodall saying: Humanity is finished after COVID-19 if it fails to drastically change food systems.

Munich, June 18, 2020.