

31 October '93
Pirbright

Dear Dr. Joshi

Enclosed is the paper on rinderpest epidemiology - modelling.
If you think the other paper (quoted) in this ^{Paper} (same journal)
is useful, I'll look for it; The last sentence
in the paper could be the starting assumption for
making a model on PPRV! I do not understand
the model as it is specialized, but I would be
happy to clarify ~~any~~ of your doubts regarding the
disease aspects (to the extent I know of it). As
you can see, this paper is an interaction between
~~a~~ mathematically minded veterinarians and a
mathematician and I am neither! but may be,
at least I could be of little help in fishing out
relevant papers for you!!

As a digression: the third author of this paper Prof.
Pastoret is a well known virologist - the key person
for eradicating rabies in the wild - in Belgium &
I think in France. He used a vaccinia-recombinant
of the cloned rabies gene, important in protection &
used as a bait (oral vacc.) & the story how
they eliminated the disease in wild foxes is
fascinating; I had the chance to listen to his
talk.

One thought about the co-evolution of the two viruses in the small dominant population - for multiplication in the host species, they act antagonistically - i.e. antibodies circulating in the animals due to infection with virus ① & hence the immunity to it - will also cause immunity to the virus ②. That is, cross-protection. This factor should be there in the descriptive model for co-evolution or ESS?

Never mind about these stray thoughts! enjoy reading the paper & let me know your reactions.

Regards

Shailen

Via: uk.ac.afrc.avri; Wed, 8 Dec 1993 17:50:26 +0000
Date: Wed, 8 Dec 93 17:47 GMT
From: SHAILA@AVRI.AFRC.AC.UK
To: CESNJ <vigyan!CES!CESNJ>
Subject: good evening

Dear DR.Joshi

thanks for the two evening mails;as i said in my morning mail(only one i sent),i was resting at home the whole day;hope i will recover soon from this miserable cold;i came to the library just before going for the grocery shopping-which i had to force myself to do since there is nothing left in the fridge;it is awful weather,gale force winds,rain and bone-chilling cold.so,channagi illa;tell NS that Bangalore is heaven compared to this place!!!

regarding the infection_ the route is oral;the virus gets into the respiratory tract;close contact between animals is necessary for the spread;thro secretions and excretions; to set up an infection of any given cell,one virus particle is enough.no one knows how many viruses will be there in a drop of nasal secretion.the virus multiplies in the epithelial cells,of the upper respiratory tract from there it goes to the intestine;at the height of viremia,the virus conc in the blood is high;infact the virus multiplies in white blood cells. hope i have given you proper answers;please let me know if there are more doubts or clarifications.

regards
Shaila

Via: uk.ac.afrc.avri; Thu, 9 Dec 1993 10:28:42 +0000
Date: Thu, 9 Dec 93 10:25 GMT
To: CESNJ <vigyan!CES!CESNJ>

dear dr.Joshi

thanks for the two morning mails. DR.Ravindranath telephoned me this morning and he had a good flight to London; he has begun work already and he has to do lot in 12 days;he will be leaving on the 20th;so, i suggested that he could mail the letters he brought and perhaps depending on his time,i could go to London to see him some time next week.

the virus infection matter: sorry for not giving the facts properly; the virus does not enter thro injection and enter the stomach like food etc.,it is thro aerosol spray of either infected animal,or animal bedding etc.,it is thro air and enters the upper respiratory tract;there are clinical signs like mouth lesions etc.,nasal discharges and other mucosal eruptions.the infection spreads down and enters the stomach(they call it abomasum for ruminants) thro tissue/cell spread and thro circulation. since there is no simple method of virus quantification,(i mean this particular virus) the amount in a droplet has not been checked;my guess is during viremic stages, anything like 10,000 particles per ml(may be a lower estimate) may be there.there is no plaque assay for this virus and our methods of enumeration is the old fashioned quantal assay,based on the cytopathic effect(so,qualitative to a large extent).one can lok for the no of particles in a nasal drop under the electron microscope but one has to have access and therefor no veterinarian has yet done those type of quantification.

you are most welcome to ask any doubts regarding this,as it would give me a chance to read about the disease more ;reductionists as i am,i know so less about these matters; may be i could clarify many of your doubts once i am back with DR.Ramachandran;he is a pathologist and knows much about the exact course of infection, route etc.

i am back to the lab today,although i have not recovered completely.
regards
Shaila

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Prof. N.V. Joshi
CES/IISc.

Dear Prof. Joshi:

We have received a volume entitled 'The invisible computer' by Donald A. Norman for review in our Journal. I enclose the volume and trust you would enjoy reading it. I would appreciate a two page critical review in about 6-8 weeks.

With best regards

Yours sincerely

(M.S. Shaila)
Editor