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Zoonoses and Food Hygiene News, published four times a year, provides a medium for disseminating technical information on matters related to zoonoses and food hygiene generated in the world, particularly in Nepal. The editors welcome submissions on these topics with appropriate illustrations and references. The views and opinions expressed in the News are those of the authors.

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Impact of the great earthquake upon animals and a foreboding risk of an epidemic outbreak

Dr. Rakesh Chand, Veterinary Officer, NZFHRC

On 25th April of 2015, the great earthquake shook Nepal to its core. What followed was a massive death toll along with a trail of destruction. Among the inflicted were the animals, may it be livestock, pets or other. The county saw huge losses in livestock as they were more widely affected as the rural areas were more affected and they were kept in confinement. Livestock are commonly kept either on the ground floor of the house, or under a specific shelter next to the house, or tied outside along the house. Thus, many animals were killed as houses or shelters collapsed. This is particularly the case for cattle which would explain the higher loss. Poultry birds saw the same fate as they too are kept under large confined establishments.



Figure 1: Treatment of multiple maggot wounds due to bad management and spinal injury due to the collapse of shed during the earthquake

Fractures, dislocation and spinal injuries were a common sight during the first days of the earthquake. Puncture wounds and muscle injuries were also encountered. Severe respiratory distress and pneumonia like signs followed along with Downer's cow, diarrhoea, maggot wounds, secondary infections etc. Psychological effects were also common as post earthquake aggression in dogs was reported across veterinary hospitals and clinics of Kathmandu valley. Severe stress syndromes were reported especially in livestock due to trauma, resulting in abortions, disturbed eating behavior, and even mortality during subsequent shocks.

Limited veterinary services, abandonment by the owner along with lack of feed, water supplies and shelter have risked the animal health. Households are using tarpaulins to protect livestock as 36% of them report the destruction of their livestock shelter. However when the monsoon comes, these temporary shelters might not hold and would not be sufficient to protect animals. Animals deprived of shelter are also more exposed to predators and an increase in loss of animals due to attacks by tigers and leopards has been reported. Feed is scarce and animals are prone to fungal toxins due to feeding of the mouldy mud covered cereal stocks recovered from the collapsed building.

Livestock reductions in six districts due to the earthquake as reported in the household survey

Animal	Percentage reduction	Minimum animal loss estimated
Cattle	16.3%	168,774
Oxen	2.6%	1652
Sheep and goats	4.4%	38,426
Poultry	36.6%	1,282,973

Source: Nepal Earthquake: Agricultural Livelihood Impact Appraisal in Six Most Affected Districts, FAO

Animal deaths from DLSO reports

District	Animal deaths (in % of total population)		
	Large	Small	Poultry
Nuwakot	0.9	2.7	1.5
Sindhupalchowk	3.8	8.4	19.4
Rawsuwa	2.0	6.5	21.4
Dhading	1.0	2.1	9.3
Dolakha	0.1	0.3	2.1
Gorkha	0.6	1.4	1.9
Total	1.3	3.3	6.9

Source: Nepal Earthquake: Agricultural Livelihood Impact Appraisal in Six Most Affected Districts, FAO

Many animal welfare organizations and veterinary personnel came forward for the rescue and treatment of the suffering animals. Among them the Nepal Veterinary Association played a significant role in aiding the affected animals. From May 9th 2015, it started its mobile health service. The objective included going to the earthquake affected areas to the animals with a team of veterinary specialists and do emergency medical treatments (fever, diarrhoea), attending to injury, treatment of Downer's cow syndrome, vitamin and mineral supplements distribution, deworming, surgical operations and gynecological treatments, vaccination, management of dead animals and containment in case of an outbreak of a disease.

Nepal Veterinary Association's relief and treatment operations

Date	Location
May 9	Sundarijal, Gokarna, Nayapati, Baluwa (Kathmandu district)
May 9	Nuwakot (Ranipauwa and Owkharpauwa V.D.C)
May 11/12	Jiling, Kumaltar, Khadak Bhanjyang, Falate, Gorkhu, Halwae Kalika V.D.C.s
May 16	Ghusel V.D.C. ward no -6,7,8,9
May 17	Ghusel V.D.C. ward number 1 to 5, 6 to 9 follow up
May 18	Chapagaun and Jharwuarashi
May 19/20/21	Jiling, Devighat, Ratmate, Kumaltar followup
May 22	Dhading district
May 23	6 mobile teams left for 7 days to Rasuwa, Nuwakot, Dhading, Kavre, Sindhupalchwok, Gorkha, Lamjung, Dolakha, Sinduli and Ramechhap districts
June 7	Kavre

Risk of an epidemic during the post earthquake phase

Large number of carcass and their improper and unhygienic disposal is thought to contaminate the water and soil. It is a matter of concern as monsoon is not far off. A time when the society is in chaos and less concern is being given to the proper management of dead animals, chances of disease outbreak such as Black Quarter, Haemorrhagic Septicaemic and FMD cannot be ruled out. Close living of human and animals since the scarcity of proper shelter may also help spread zoonotic diseases. Crowding, inadequate water and sanitation, and poor access to health services, often characteristic of sudden population displacement increase the risk of communicable disease transmission. We can take examples of many outbreaks that occurred all over the world following an earthquake. For example, acute watery diarrhoea and tetanus in Muzaffarabad, Pakistan (2005), cutaneous leishmaniasis in rural region of Southern Iran (July 2003), coccidiomycosis in Southern California (Jan 1994), Malaria in Costa Rica's Atlantic Region (1991) or the recent 2010's Haiti, where Human rabies, Leptospirosis, Lymphatic filariasis etc brokeout. The worst is not yet over. The post earthquake epidemic still holds a great deal of threat towards the animal as well as human lives. If proper action towards the management of dead as well as living animals is not taken, the risk of a zoonotic outbreak is inevitable which may add more to the list of the earthquake casualties.

World Rabies Day 2015 – NZFHRC Conducting Rabies Week Celebrating With Various Events

Dr. Rakesh Chand, Veterinary Officer, NZFHRC

World Rabies day is celebrated globally on 28th September with a vision of eliminating rabies from the world. This year Rabies day was celebrated the world over by millions of people conducting hundreds of events with the slogan 'End Rabies Together'. In Nepal, the occasion was celebrated by National Zoonosis and Food Health Research Center (NZFHRC) by conducting an entire rabies week where a week long rabies related activities were organized.

• School Awareness Program:

School awareness programs were conducted over a number of private as well as public schools around Kathmandu. Students of grade 8, 9 and 10 were selected for awareness. A preliminary questionnaire survey was done beforehand to test the knowledge regarding Rabies in the children. Power point presentation, Rabies videos and interactive lectures were taken. Quizzes and games related to Rabies were performed. The awareness programs were conducted on Shree Shanti Nikunja Secondary School, Bhagwatibari (23rd September), Cambridge Public High School, Purano Baneshwor (24th September) and Shree Sworswati Niketan Secondary School (30th September). Dibya Gyan Higher Secondary School and Mount Glory English

High School were included in the awareness program after the Rabies week. Over 600 students were made aware of the threat of Rabies. A KAP survey was also conducted among the parents of the students to find out their idea towards rabies.

• Ride for a cause:

The rabies week was kicked off with a bike rally around the Bhaktapur district on 23rd September. The rally was organized with collaborative efforts from District Livestock Office (DLSO)-Bhaktapur, Bhaktapur Animal Welfare Society (BAWS), National Zoonosis and Food Health Research Center (NZFHRC) and Riders of Bhaktapur (ROB). The route was as: Suryabinayak -Katunje- Balkot – Changu Narayan- Nagarkot. Along the way, rabies related pamphlets and leaflets were also distributed among the residents. The local stunt and biker club, ROB, also performed bike stunts for the public. It was a commendable effort for a biker group to aid in a social cause and raise awareness towards rabies. The involvement of the local youngsters of Bhaktapur for such a cause was truly inspiring. Other than this, media personnel were also present to cover the event which was later telecast on the local television channel.

• Radio Program:

A special program on Rabies was broadcast on 28th September on the occasion of the World Rabies Day 2015 by the national radio station 'Radio Nepal-100MHz'. The thirty minutes long rabies interview was given by NZFHRC's Veterinary officer, Dr. Rakesh Chand. The program included an insight on rabies for the general people. Many question relating to rabies, its transmission, threat, its prevention, control and its impact nationally and globally were answered. The show aired all over the Nepal and aided in providing awareness to the general public to some extent.

• Vaccination programs:

On World Rabies day, mass vaccination, wound treatment and deworming of dogs were performed around the Chagal and Dallu areas. About 52 dogs were vaccinated and about 80 dewormed. Stray and community owned dog were treated for injury. Pet owner rabies questionnaire survey was also performed. Rabies handouts were distributed among the local residents. Banners and stickers of rabies awareness were provided to local club and shops.

Rabies vaccination camps were also organized in collaboration with the District Livestock Office- Bhaktapur. The details of the camps are as follows:

Date	Address	Animals vaccinated (Dogs)
22 nd September	V.D.C. office, Challing	79
24 th September	Animal Service Center, Jhaukhel	99
25 th September	Jitpur, Sudal	70
26 th September	Thimi-3, Bode	50

About 298 dogs were vaccinated in collaboration with the DLSO-Bhaktapur and 52 individually by NZFHRC. DLSO-Bhaktapur vaccinated in total of 580 dogs during the rabies week.

• World Rabies Day:

A mass rally was organized on the rabies day which included veterinary professionals, paravets, public health officials, health workers, welfare groups and other stakeholders. The awareness rally started from Directorate of Animal Health, Tripureshwor and around the Kathmandu city and back. After the rally, an interaction program regarding Rabies was conducted at **Epidemiology and Disease Control division (EDCD)** of Ministry of Health and Population Department of Health Services. The national scenario of rabies and its control strategies were discussed. History of Rabies in the country,

past actions and future plans against the disease were reviewed during the meeting. Ultimately The Rabies week 2015 was a big success. Another step towards the war against rabies. As the slogan 'End Rabies Together' suggested, a collaborative effort and significant contribution was made from different sectors to make World Rabies Day 2015 a triumphant event.



Photo: Rabies mass rally



Photo: Free anti rabies vaccination campaign at Chagal, Kathmandu.



Photo: Shanti Nikunja school-group picture at school premises.



Photo: Dr. Rakesh Chand lecturing on rabies at school.



Photo: Answering the questions of student at Cambridge Public High School.



Photo: Free anti rabies vaccination campaign.



Photo: Smiles on face of students during the interaction programme at Shree Sarswati Niketan Secondary School, Kathmandu.

NEWS

Media broadcast

On the occasion of World Rabies Day 2015, NZFHRC's Veterinary Officer, Dr. Rakesh Chand delivered a half an hour long interview programme regarding rabies on the national radio station Radio Nepal.

The 4th Food Safety and Zoonoses Symposium for Asia Pacific:

Ms. Minu Sharma, Program Coordinator participated in the International Symposium **The 4th Food Safety and Zoonoses Symposium for Asia Pacific** which was held under the collaboration with University of Minnesota, United States, Free University Berlin, Germany, ILRI International Livestock Research Institute, Com Across Project and Veterinary Public Health Centre for Asia Pacific, Faculty of Veterinary Medicine, Chiang Mai University during **3rd – 5th August 2015 at Holiday Inn Chiang Mai Hotel, Chiang Mai, Thailand**. She has presented a poster presentation of article entitle “Reducing Vulnerability to the Threat of Japanese Encephalitis Transmission in High Risk Districts in Nepal”.

The international symposium designed to provide opportunity for current Master of Veterinary Public Health (International Program) students and participants from various countries including Vietnam, Philippines, Indonesia, Laos, Portugal, USA and Thailand to present their research abstracts in food safety, zoonoses and One Health areas. The event also aimed to operate collaboration for transferring knowledge, experiences, problems and taking appropriate action on food safety and zoonoses in the Asia Pacific region.

Recruitment at NZFHRC

Dr. Anita Ale rejoined at National Zoonoses and Food Hygiene Research Centre (NZFHRC) as a Veterinary Officer who successfully completed her Masters degree in Veterinary Public Health (MVPH) from Freie Universitat Berlin, Germany and Chiang Mai University (CMU), Thailand under DAAD (German Academic Exchange Service) scholarship. We would heartily welcome her in our centre.

Dr. Rakesh Chand recently joined at National Zoonoses and Food Hygiene Research Centre (NZFHRC) as a Veterinary Officer who is a fresh graduate (B.V. Sc. & A.H.) from Institute of Agriculture and Animal Science (IAAS), Tribhuvan University (TU), Rampur, Chitwan. We would warmly welcome him in our centre.

DDJ Research Award:

Please kindly submit your research work report on zoonotic diseases for to consideration of DDJ Research award for the year 2015 by the end of December 2015 to NZFHRC office Chagal, G.P.O. Box 1885, Kathmandu, Nepal, Phone: 4270667, 4274928 and Fax 4272694. This award was established by DDJ Research Foundation in 2071 B.S. (2014) on the memory of Founder of this Foundation, Late, Dr. D.D. Joshi. The award includes a grant of NCRs. 25,001/- (Rs. Twenty Five Thousand and One) with certificate.

K.D.M.A. Research Award:

Please kindly submit your research work paper on allergy award for the year 2015 for the consideration by the end of December to KDMART office Chagal, G.P.O. Box 1885, Kathmandu, Nepal, Phone: 4270667, 4274928 and Fax 4272694. This award was established by Late Dr. Durga Datt Joshi in 2049 B.S. (1992) on the memory of his wife, the late Mrs. Kaushilya Devi Joshi. The award includes a grant of NCRs. 15,001/- (Rs. Fifteen Thousand and One) with certificate.

**From: Zoonoses & Food Hygiene News, NZFHRC
P.O. Box 1885, Chagal, Kathmandu, Nepal.**

TO:

Dr/Mr/Ms

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