

Brainstorming on Climate change: Animal Production and Health, Challenges and way forward was organized by Department of Veterinary Physiology, Veterinary University Mathura on 11th December 2019. Fifteen experts from different parts of the country participated in the brainstorming. The brainstorming began with the welcome of Hon'ble Vice Chancellor Prof. G. K. Singh and Dean Prof. S. K. Garg by Dr A K Madan, HoD, Veterinary Physiology. Dr S. K. Garg Dean COVS and AH welcomed the participants which was followed by the introduction of the participants. Vice Chancellor Dr G K Singh while addressing the gathering highlighted the aim of the brainstorming and declared the session open.

The theme of the first session was 'Bio-meteorological perspective of climate change'. Dr S C Bhan, Scientist F, Indian Meteorological Department, Govt. of India presented theme lecture and Dr Ravindra Kumar, Director Research acted as moderator who opened the discussion for the panelists and audience. Dr. Madhu Tiwari, Asstt. Prof. AGB assisted the moderator in managing the session. From the deliberations it was concluded that there was average increase of 0.7 °C temperature increase and it was similar throughout the year. The humidity has increased in the month of September and October which has extended the level of heat stress in additional two months. The average wind speed has been found to decrease throughout the year. Erratic rains, hail storm, heat waves, cold waves, thunder storms, dry spells has become more common. Impact of these changes was discussed on animal production and health, and disease occurrence. It was recommended to aware the animal farmers about different agro-meteorological services so that they can prevent their animals from erratic weather besides making them aware about feeding, breeding and management practices.

The theme of the second session was 'Vulnerability of livestock to changing climate'. Dr Sejian V. Senior Scientist, CSWRI Avikanagar presented the theme lecture and Dr SMK Naqvi, Principal Scientist, CSWRI, Avikanagar acted as moderator while Dr. Vijay Pandey, Associate Prof. VBC acted as assistant moderator. From the discussions it was concluded that heat stress coupled with poor nutrition and water scarcity is more disastrous for animal production system. Heat stress in natural system does not affect the animal production in indigenous animals. The silent heat period has extended from 3-4 months to 4-5 months in buffaloes. It was emphasized to formulate the thermo-neutral zone for Indian livestock and new indices indicating the level of stress in indigenous animals. It was recommended that thermo-tolerance and adaptability of different livestock breeds should be studied in order to suggest suitability of a particular breed to agro-climatic zone. For studying the adaptability a set of indicators must be decided for each livestock species.

The theme of the third session was 'Methane emission and its mitigation from livestock animals'. Dr L C Chaudhary, Principal Scientist, IVRI, Izatnagar presented the theme lecture, Dr Sultan Singh, Principal Scientist, IGFRI, Jhansi acted as moderator and Dr. Vinod Kumar Associate Professor AN aced as asstt. moderator. Unequivocally, it was concluded that rumen microflora cannot be manipulated for longer time. From the discussions it was concluded that effect of heat stress on increase in rumen temperature and further effect of increase in rumen temperature on rumen microbiota and fermentation has been less studied. Attempts have been made by different researchers to use alternate hydrogen sinks like nitrates, sulphates, fatty acids, oils etc. reducing agents and many plant extracts. However these methods were not economically sustainable. To make it economically viable it was suggested that chemical constituents responsible for reducing methane emission. It was recommended that designer fodder with more soluble sugars, less cellulose, more reducing agents, and comparatively more tannins can be better solution to mitigate methane emission.

The experts also visited different laboratory facilities generated and gave their suggestion for improvement. The participants were overwhelmed by facilities developed by the Department of Veterinary Physiology and expressed their eagerness to have future research collaboration.

The plenary cum valedictory session was Chaired by Actg. Vice Chancellor Prof. S. K. Garg and Co-Chaired by Dr Atul Saxena, Director Research and Dr Sarvajeet Yadav, Director Extension, while Dr A K Madan, Professor and Head, Veterinary Physiology acted as rapporteur. The moderators presented the session report and recommendations of each session and departmental faculty was instructed to come out with compilation of the same at an early date. Vice Chancellor presented memento to participants, moderators and assistant moderators. The Dr Brijesh Yadav, Assistant Professor, Department of Veterinary Physiology, Organizing Secretary, of the brain storming proposed vote of thanks.



















