

**MARS/NDRI/KSU Communications Workshop
Himalaya Hotel, Kathmandu, 2-3 June 2022**

**Part 5
Summary of Responses to Day 1 Nominal Group
Discussion Questions**

A. Identify Key Issues Regarding Mycotoxins of Relevance to Consumers

- Individual Responses (Complete) – Pages 1-2
- Response Clusters – Page 3

B. Identify Key Issues Regarding Mycotoxins of Relevance to Producers,
Traders & Distributors

- Individual Responses (Complete) – Pages 4-5
- Response Clusters – Page 5

C. Identify Key Issues Regarding Mycotoxins of Relevance to Health
Professionals

- Individual Responses (Complete) – Pages 6-8
- Response Clusters – Page 8

D. Identify Key Issues Regarding Mycotoxins of Relevance to Educators,
Trainers & Researchers

- Individual Responses (Complete) – Pages 9-11
- Response Clusters – Page 11

E. Identify Key Issues Regarding Mycotoxins of Relevance to Policy Makers &
Regulators

- Individual Responses (Complete) – Pages 12-14
- Response Clusters – Page 14

Identify Key Issues Regarding Mycotoxins of Relevance to Consumers

ID No.	Group								Response
	Cherry		Elm		Oak		Pine		
	S	#	S	#	S	#	S	#	
1	1	3	7	27			4	11	Lack of knowledge of proper food storage
2	1	1	3	14	5	20			Lack of awareness
3	1	4			2	4	5	24	Poor family health
4	1	4			3	4	3	8	Economic loss
5	2	6	•	•			•	•	Inadequate laboratory testing facilities
6	2	8	•	•					Lack of knowledge of health implications of mycotoxin-contaminated food consumption
7	1	3	•	•					Cannot afford mycotoxin-free food
8							5	15	Food wastage
9					4	20			Specific health issues (cancer, cirrhosis of liver, suppression of immune system, <i>etc.</i>)
10					3	7			Stress & psychological impacts
11			3	4					Poor coordination between regulatory agencies & consumer activists
12	2	8							Unaware of consumer's rights
13	2	7							Lack of knowledge of sources of mycotoxin exposure & contamination
14							2	7	Malnutrition
15			2	6					Market is not under government control
16	2	5							Lack of robust policy, rules & regulations regarding consumer's right to take action against the supplier
17					2	5			Strengthen DFTQC capacity for regulating mycotoxins
18					2	4			Lower quality of life
19							2	4	Awareness of mycotoxin problem through mass media
20							2	4	Check date before buying
21					2	3			Fear of not having food
22	1	5							Inability to readily identify contaminated food
23	1	5							Promotion of pre-harvest and post-harvest practices that assure proper nutrition

ID No.	Group				Response				
	Cherry		Elm			Oak		Pine	
	S	#	S	#		S	#	S	#
24	1	5							No advocacy to date for consumer by government, non-government or academic authorities
25	1	4							Assurance of clean, mycotoxin-free products & services
26	1	4							Misconception that eating contaminated food followed by certain non-lethal treatment will do no health harm
27			1	4					Profit-oriented producers & suppliers
28	1	3							Compensation for harm due to contaminated consumer products
29			1	3					Limited number of food technologists
30	1	2							Proper regulation by government regulatory body
31			1	2					Quality assurance problems with safety net programs
32	1	1							Information, education & communication materials in market regarding mycotoxin contamination, health risks & mitigation measures
33			1	1					Open border (with India) enables importation of unsafe food
34							1	1	Unavailability of safe food
35							1	1	Report suspected problematic distributors & traders to authorities
36	•	•							Need advocacy of consumer's rights
37			•	•					Lack of implementation of consumer awareness act
38			•	•					Improper storage at household level
39							•	•	School knowledge for children
40							•	•	Disposal facility for contaminated materials
41							•	•	Eradication methods for household use

Response Clusters:

Knowledge/Awareness – 2, 6, 13, 19, 20, 22, 26, 32 & 39

Family Health – 3, 9 & 10

Lower Quality of Life – 18

Economic Loss – 4

Availability/affordability of safe food – 7, 8, 14, 21, 22, 27, 33 & 34

Disposal/remediation of contaminated food – 40 & 41

Food Storage – 1 & 38

Government capacity & regulation – 5, 15, 17, 25, 29, 30, 31 & 33

Consumer rights & advocacy – 11, 12, 16, 24, 28, 36 & 37

Postharvest/Pre-harvest practices – 24

Identify Key Issues Regarding Mycotoxins of Relevance to Educators, Trainers & Researchers

ID No.	Group										Response
	Cherry		Elm		Oak		Teak		Pine		
	S	#	S	#	S	#	S	#	S	#	
1	3	11	2	5	5	23			3	8	Need to develop human capacity at all levels for conducting research on the effects of mycotoxins
2	1	1	1	5			1	1	5	15	Need laboratories and technologies for research and clinical applications
3			2	6	4	10			2	4	Need funds for research
4	2	9	3	12					2	2	Need to incorporate mycotoxins into school curricula
5	4	17	1	5					1	3	Limited literature, research & human resources for mycotoxins in the education sector
6	1	1	1	2					1	3	No clear target group for mycotoxin training
7	1	2					•	•	1	3	Need to develop and disseminate effective IEC materials
8							4	20	3	11	What are the different types of mycotoxins?
9	1	5			4	16					Need standard reference document to use in awareness training
10							4	15	1	5	Define mycotoxin impacts on human health
11					5	15			•	•	Strengthen training institute
12	•	•	2	9							Mycotoxin issue is not a priority for educators, trainers and researchers
13	2	7	•	•							Limited research conducted by the government available to disseminate
14	1	2							1	3	Need to access to research outputs, knowledge, policies, databases and statutory provisions
15					2	4	•	•			Print brochures & pamphlets in local language, e.g., tharu maithili , Newari, etc.

ID No.	Group					Response					
	Cherry		Elm		Oak		Teak		Pine		
	S	#	S	#	S		#	S	#	S	#
16									4	14	Conduct innovative research
17							4	7			Awareness of mycotoxin issues by educators, trainers and researchers
18							3	10			What are mycotoxin contamination levels in food and feed?
19					3	3					Need national/international collaboration for research
20			2	8							Lack of priority for mycotoxin research
21	2	6									Lack of coordination between educators, trainers, research, extension and communications departments
22							2	5			Maximum regulated levels of mycotoxins
23									2	5	Integrated approach to research
24			2	2							Mycotoxin issue is not a priority for the media
25			2	2							Need better coordination between national and international research institutes
26					2	2					Need coordination between local, provincial and federal governments for research, training & awareness
27									1	5	Broaden scope of research
28			1	3							Need information on food consumption
29							1	2			Level of mycotoxin contamination in the supply chain
30							1	2			Good practices for managing mycotoxin risks
31	1	1									Lack of audience awareness about problem makes it difficult to impart new knowledge about mycotoxins
32	1	1									Awareness of farmers about pre-harvest, mitigation and post-harvest technology for food commodities
33	•	•									Need to rely on donor agency(ies) for research to be done

ID No.	Group					Response				
	Cherry		Elm		Oak		Teak	Pine		
	S	#	S	#	S		#	S	#	
34	•	•							Provide monetary and other incentives to educators and trainers	
35	•	•							Lack of knowledge about pre- and post-harvest problems and their solutions amongst students, teachers and researches	
36			•	•					Poor project implementation and management in existing labs	
37						•	•		Mycotoxin contamination problems in restaurants and fast food	
38						•	•		Financial impact of mycotoxins	
39								•	•	Identify proper communications channel for mycotoxin information

Response Clusters:

Capacity building: Human, physical and budgetary – 1, 2, 3 & 34
Resources for curriculum and outreach material development – 5, 9, 11, 13 & 14
Additional research on mycotoxins – 1, 2, 16, 19, 23, 25, 27, 33 & 36
School curricula and other outreach materials – 4, 7, 15, 21, 26 & 39
Critical questions to address – 6, 8, 10, 18, 22, 28, 29, 30, 37 & 38
Awareness – 17, 26, 31, 32 & 35
Mycotoxin priority levels – 12, 20 & 24

Identify Key Issues Regarding Mycotoxins of Relevance to Health Professionals

ID No.	Group				Response
	Cherry	Oak	Pine	Elm	
	S #	S #	S #	S #	
1		4 15	1 2	1 5	Lack of knowledge on the impact of mycotoxins on health
2	1 1		2 4	2 4	Poor coordination between health & agriculture
3			4 6	3 12	Insufficient data or results on impact of mycotoxins on health
4	1 2		5 23		Impact of mycotoxins on health & nutrition of children
5	1 5			5 10	Need for policy on mycotoxin mitigation
6	• •		5 20		Impact on nutrition & health of pregnant women and lactating mothers
7	• •	4 16			Lack of training for health professionals
8	1 4			2 8	Poor knowledge across all levels of health professionals
9	1 5			1 3	Need for healthy food management & awareness guidelines
10	2 6			• •	Harmful long-term health effects of mycotoxins (<i>e.g.</i> , liver cancer, cirrhosis)
11		2 6		• •	Lack of IEC/BCC materials relating health and mycotoxins
12	1 4			• •	Research on malnutrition in children and cognitive impairment
13	4 14				Available research on mycotoxins in Nepal is limited
14		4 12			Strengthening training institutions
15			3 8		Clinical research on the effects of mycotoxins
16		3 7			Promulgation of policies regarding mycotoxins for health professionals
17		3 7			Research to support health consequences caused by mycotoxins
18	2 10				Dissemination strategies targeted by group

ID No.	Group				Response				
	Cherry		Oak			Pine		Elm	
	S	#	S	#		S	#	S	#
19			2	8					Effective coordination between health professionals & livestock professionals
20							2	8	Lack of basic knowledge of mycotoxins
21							2	8	No information on mycotoxins in the health curriculum
22	2	4							Food insecurity
23							2	4	Difficult to identify vulnerable groups
24			2	3					Formation of health professionals group for awareness program
25	1	5							Create a sense of public health urgency for mycotoxins
26	1	4							Dissemination strategies for mitigation measures
27							1	4	Insufficient epidemiological surveillance of impact on health
28	1	3							Food consumption behavior & dietary diversity
29	1	3							Lack of technology to determine the level of toxin effects of mycotoxin
30	1	3							Medicine available to treat mycotoxin intoxication
31	1	3							Limited resources to prioritize food safety issues in public health sector
32					1	3			Identify infected food
33							1	2	Lack of accurate diagnosis of mycotoxin-related health effects, and proper treatment
34			1	1					Lack of labs at provincial level
35							1	1	Lack of consumer awareness
36							1	1	Has never been a priority
37	•	•							Mycotoxin contamination is affecting mass population in silent mode
38					•	•			Communication with patients
39					•	•			Symptomatic treatment
40					•	•			Understanding mechanism underlying risks due to consumption of mycotoxin contaminated food

ID No.	Group				Response					
	Cherry		Oak			Pine		Elm		
	S	#	S	#		S	#	S	#	
41					•	•			Upgrade facilities in community for identification of mycotoxin exposure	
42					•	•			Proper disposal of contaminated food	
43					•	•			Discussions with junior colleagues	
44								•	•	Need information on permissible limits for mycotoxins
45								•	•	No testing labs

Response Clusters:

Lack of training for and awareness by health professionals of mycotoxins and related issues – 1, 7, 8, 14, 20, 21, 24, 37 & 43

Interactions of health care professionals with others outside health care – 2, 19 & 38

Background topic information needed – 3, 4, 6, 9, 10, 20, 37 & 44

Research needed – 3, 12, 13, 15, 17, 27 & 40

Government policies – 5, 16, 24, 25, 36

Diagnosis/treatment options and capabilities – 23, 29, 33, 34, 35, 37, 41 & 45

Remediation/cure options and capabilities – 23, 26, 29, 30, 35, 37, 39 & 42

Lack of materials and information to share – 9, 11, 18, 26, 37 & 38

Food safety/security – 9, 22, 23, 28, 31 & 32

Identify Key Issues Regarding Mycotoxins of Relevance to Policy Makers & Regulators

ID No.	Group				Response
	Elm	Oak	Pine	Teak	
	S #	S #	S #	S #	
1		5 18	3 6	4 13	Budget allocation for education, awareness among consumers , producers, distributors & government officials, on research, communication, storage & advocacy
2	1 1		5 21	3 15	Awareness training on impact of mycotoxins on human and animal health
3	4 6	1 3		1 1	Lack of coordination among different stakeholders including policymakers, government entities, NGOs, Ingos, private sector & research organizations
4	1 3	4 20		• •	Formulation of laws (rules and regulations, policy, strategies) limiting mycotoxin contamination
5	1 3		• •	2 7	Lack of effective regulation and implementation of consumer rights – ensuring quality control and quality assurance
6		2 5		1 2	Harmonize Nepalese laws & regulations with international ones
7	1 4			2 2	Need localization (local government ownership) of mycotoxin issue information
8	1 5			1 5	Need more research on mycotoxins in Nepal
9		2 9		• •	Surveillance and risk monitoring for mycotoxin contamination
10		2 6		• •	Collaborative local, provincial & federal mycotoxin management program
11			1 2	1 3	Quarantine policy
12		2 4		• •	Endorse risk assessment policy
13			1 1	1 2	Policy for food storage
14	1 2			• •	Lack of holistic national action plan on mycotoxin mitigation
15	4 13				Mycotoxins are not a national priority

ID No.	Group				Response				
	Elm		Oak			Pine		Teak	
	S	#	S	#		S	#	S	#
16							4	12	Develop and monitor policies and programs to manage mycotoxin contamination
17	3	13							Lack of knowledge about mycotoxins by policy makers
18					3	9			Penalty for traders who sell mycotoxin contaminated food
19					3	7			Policy to link Ministries of Education, Health & Agriculture
20					2	8			Regular food testing
21	2	7							Not considering farming as a priority job/farmers are not respected
22					2	7			Post-harvest infrastructure support
23							2	6	Food safety regulation at retail food outlets
24			2	3					Strengthen existing laboratories
25			2	3					Form an expert advisory committee on mycotoxins
26							2	3	Partnership and collaboration with global organization(s) working on mycotoxins
27					1	4			Capacity building of farmers & traders
28					1	4			Mycotoxin information in school curriculum
29							1	4	Identify food and feed quality losses due to mycotoxins
30	1	3							Need for human & physical capacity to address mycotoxin issues
31					1	3			Develop agriculture practices and guidelines to minimize mycotoxin contamination
32					1	2			Capacity building for research laboratories
33			1	1					Government financial support to farmers
34					1	1			Disposal policy
35	•	•							Lack of organizations advocating for producers on mycotoxin issues
36					•	•			Financial support for mycotoxin contaminated food
37					•	•			Food labelling
38							•	•	Identify different mechanisms of mycotoxin contamination and their impact

ID No.	Group				Response
	Elm	Oak	Pine	Teak	
	S #	S #	S #	S #	
39				• •	Research and publications on mycotoxins and their effects in Nepal
40				• •	Determine economic impact of mycotoxin contamination
41				• •	Develop policy for proper, seasonal harvesting of food

Response Clusters:

Budget for all aspects of mycotoxin work – 1
Collect more information on the problem – 8, 9, 16, 29, 38, 39 & 40
Capacity building – 22, 27, 30, 32, 33 & 35
Awareness of the problem – 2, 17, 21 & 28
Need for coordinated actions and responses – 3, 19, 25 & 26
Develop management structure for mycotoxin problem – 7, 10, 11, 14, 15, 20, 23, 24, 33 & 36
Develop rules, regulations, policies and strategies to minimize and manage mycotoxin contamination – 4, 5, 6, 11, 12, 13, 14, 16, 18, 19, 31, 34, 37 & 41

Identify Key Issues Regarding Mycotoxins of Relevance for Producers, Traders & Distributors

ID #	Group								Response
	Cherry		Elm		Oak		Pine		
	S	#	S	#	S	#	S	#	
1	1	2	2	10	3	6	4	17	Increase producer's basic knowledge of mycotoxins
2	6	18	4	12	4	11			Proper storage practices & facilities
3	1	4			3	7	2	5	Decreased product quality
4	1	3	1	1			•	•	Increase traders & distributors warehouse, storage and transportation capacity
5					5	24	4	8	Financial loss
6					4	11	2	7	Dry grain properly before storage
7					5	12	2	6	Manage pre-harvest contamination
8	1	1	5	14					Need proper, adequate rules & regulations
9			2	10			3	8	Health hazards posed by mycotoxins
10			3	11	2	3			Use GAP (Good Agriculture Practices)
11	3	15	1	2					Lack of human resource capacity along the value chain
12			1	2			2	5	Mycotoxin test facilities
13			•	•			2	3	Proper use and knowledge of fungicides & pesticides
14			1	4			•	•	Weather can affect mycotoxin contamination
15			1	3			•	•	Improved post-harvest distribution system & facilities
16					3	13			Plant resistant seeds
17							3	13	Plant healthy seed
18			2	7					Use Good Manufacturing Practices (GMP)
19					2	7			Store grain in hermetic bags
20	2	6							Lack of responsible government body for traders & distributors regarding consumer's health
21	2	4							Poor living and technological status of producers who work on mycotoxin control
22			2	4					Lack of government prioritization of mycotoxins

ID #	Group				Response					
	Cherry		Elm			Oak		Pine		
	S	#	S	#		S	#	S	#	
23			2	2					Insufficient investment/lack of finance for farmers to safeguard against mycotoxins Need for more business-oriented traders & distributors Poor enforcement mechanisms for products that may be contaminated with mycotoxins Timely use & sale Promote value of mycotoxin-free food Reduce good will of traders Lack of access to moisture meters by farmers Raise awareness of mycotoxin problems Reduced export value	
24	1	5								
25			1	3						
26							1	3		
27	1	2								
28					1	2				
29			1	1						
30			1	1						
31					1	1				
32	•	•								Educate small-scale farmers on pre- & post-harvest mitigation measures Knowledge of mycotoxin regulatory limits Traders use banned chemicals during storage & packaging to try to limit fungal growth Lack of improved alternatives to traditional storage systems Lack of policy & programs on mycotoxins Loss of produce Cheap, easy & quick lab tests for mycotoxins
33			•	•						
34			•	•						
35			•	•						
36			•	•						
37							•	•		
38							•	•		

Response Clusters:

Increased audience knowledge of mycotoxin problem – 1, 30, 32 & 33
Adequate personnel – 11, 21 & 28
Pre-harvest – 7, 10, 13, 14, 16, 17 & 29
Drying & storage – 2, 4, 6, 13, 19, 34 & 35
Post-harvest processing – 15, 18 & 26
Health issues – 3 & 9
Financial issues – 3, 5, 23, 24, 28, 31 & 37