

Government of Jammu and Kashmir
Agriculture Production Department
Civil Secretariat, Srinagar/Jammu

Subject: Development of Artificial Intelligence (AI) Driven Chatbot for farmers of Jammu & Kashmir.

Government Order No: *261* JK (APD) of 2023

Dated: 03-05-2023

The Officers, as mentioned in "Annexure I" of this Order are hereby assigned the duties for coordinating the development of Artificial Intelligence driven Chatbot (Agri-Chatbot) for a two-way communication between farmer and the Agri-Chatbot. The Chatbot shall address the queries of farmers with respect to agriculture and allied sectors like Pre-harvesting management, post-harvest management, disease management, value addition, marketing, etc.

The concerned Officers shall coordinate the development of the FAQs, for their respective domain areas, as indicated in "Annexure-II" within 10 days from the issuance of this order. Each sub-discipline shall have 50 to 100 FAQs, the answers to which should be comprehensive. The quality and relevance of the material shall be checked by the designated officers before forwarding to the **Nodal officers** as indicated below:

S.No	Name of the Officer	Contact
01.	Shri. Mohammad Farooq Dar, JKAS. Mission Director HADP	
02.	Dr Shabir A Wani, Dean, Faculty of Horticulture, Shalimar, SKUAST-K	Mobile 9149438215 Email deanhorticulture@skuastkashmir.ac.in
03.	Dr Puneet Chaudhary PC-KVK Jammu, SKUAST-J	Mobile 9419142813 Email pmchaudhary@gmail.com
04.	Mr. Parantap Parashar Consultant (GDI/BMGF)	Mobile 9782297281 parantap@gdipartners.in

afamulmi
03.05.2023

In order to train the Machine Learning Model for development of proposed Chatbot, a huge data set in the form of over 20,000 and more FAQs shall be framed. A remuneration of Rs five (05) only, per question is also sanctioned by debit to the Flexi Fund of the two universities. The sample FAQs are given as Annexure III.

By Order of the Government of Jammu & Kashmir.

Sd/-
(Atal Dulloo), IAS
Financial Commissioner
(Additional Chief Secretary)
Dated: 03 .05.2023

No. Agri-PS/2/2023 (CC-7100404)

Copy to the:

1. Joint Secretary (JKL), Ministry of Home Affairs, Government of India.
2. Director Archives, Archeology & Museums, J&K, Jammu.
3. Vice Chancellor SKUAST, Jammu/Kashmir.
4. Director General Sericulture, J&K.
5. Director General, Sheep Husbandry Kashmir.
6. Director Animal Husbandry, Jammu.
7. Director Sheep Husbandry, Jammu.
8. Managing Director, J&KAIDCL.
9. Director Horticulture Kashmir.
10. Director Horticulture (P&M), J&K.
11. Managing Director, JKHPMC
12. Director Horticulture Jammu.
13. Director Animal Husbandry Kashmir.
14. Mission Director, HADP/Director Fisheries J&K.
15. Director Agriculture Jammu.
16. Director Agriculture Kashmir.
17. All Directors of Development Departments, SKUAST K/J.
18. All Deans of SKUAST J/K
19. Secretary, J&K Advisory Board for Development of Kisans.
20. All concerned Officers
21. Technical Officers (All), Agriculture Production Department.
22. Private Secretary to the Additional Chief Secretary, Agriculture Production Department for information.
23. Private Secretary to Secretary Agriculture Production Department.
24. I/C Website, Agriculture Production Department.
25. Government Order file (w.2.s.c)/Stock file.

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03.05.2023
Mir Tajamul (JKAS)

Under Secretary to the Government.

Subject: List of the Officers who shall coordinate development of the FAQs and Check for their Quality as well.

(a) SKUAST-Kashmir

S.No	Name of the Officer	Designation	Domain
01	Prof. S. A. Wani	Dean	Faculty of Horticulture, Shalimar
02	Prof. M. T. Banday	Dean	Faculty of Veterinary Sciences & AH
03	Prof. Rehana Habib	Dean	Faculty of Agriculture, Wadura
04	Prof. Sajad A. Gangoo	Dean	Faculty of Forestry, Benihama
05	Prof. Feroz A. Bhat	Dean	Faculty of Fisheries, Gandertbal
06	Prof. F. A. Baqual	Associate Dean	College of Temperate Sericulture
07	Prof. Rohitash Kumar	Associate Dean	College of Agri. Eng. and Tech.

(b) SKUAST-Jammu

S.No	Name of the Officer	Designation	Domain
01	Prof. B.C. Sharma	Dean	Faculty of Agriculture
02	Prof. Sushil Kumar Gupta	Dean	Faculty of Horticulture and Forestry
03	Prof. M.S. Bhadwal	Dean	Faculty of Vety. Sciences & AH
04	Prof. Jaswinder Sing Soodan	Dean	Faculty of Dairy Technology
05	Prof. Sushil Sharma	Dean	Faculty of Agricultural Engineering
06	Prof. S.E.H. Rizvi	Dean	Faculty of Basic Sciences

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(c) Developmental Departments Kashmir

S.No	Name of the Officer	Designation	Domain
1.	Shri. M. A Qadri, JKAS	Director General	Sericulture J&K
2.	Shri. B. A Khan, JKAS	Director General	Sheep Husbandry, Kashmir
3.	Shri. G. R Mir, JKAS	Director	Horticulture Kashmir
4.	Shri. Vikas Sharma, JKAS	Director	Horticulture, P&M J&K
5.	Ms. Purnima Mital, JKAS	Director	Animal Husbandry, Kashmir
6.	Shri M.F Dar, JKAS	Director	Fisheries, J&K.
7.	Shri M.IqbalChaudary.	Director	Agriculture Kashmir

(d) Developmental Departments Jammu

S.No	Name of the Officer	Designation	Domain
1	Shri M. A Qadri, JKAS	Director General	Sericulture ,J&K
2	Ms. Shubra Sharma, JKAS	Director	Animal Husbandry, Jammu
3	Shri Naseem Javaid Chowdhary, JKAS	Director	Sheep Husbandry, Jammu
4	Shri Vikas Sharma, JKAS	Director	P&M, J&K
5	Shri Ram Sewak, JKAS	Director	Horticulture ,Jammu
6	Shri M.F Dar, JKAS	Director	Fisheries, J&K.
7	Shri .K.K.Sharma	Director	Agriculture Jammu

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(a) Disciplines and Sub-disciplines of Horticulture

Name of discipline	Sub-discipline
Vegetable Science	Soil and temperature requirements of vegetables
	Vegetable cultivation calendar for round the year cultivation
	Cultivation practices, harvest and yield of Solanaceous crops
	Cultivation practices , harvest and yield of Cole crops
	Cultivation practices , harvest and yield of Root Crops
	Cultivation practices , harvest and yield of Cucurbits
	Cultivation practices, harvest and yield of Leafy vegetables
	Cultivation practices, harvest and yield of Bulb crops
	Recommended varieties for each crop
	Fertilizer and manure requirements of vegetables
	Seed production of vegetables
	Diseases, pests and their management
	Protected vegetable farming
Fruit Science	Fruit crops of the Temperate and sub-tropical climate
	Commercial and native Varieties of each fruit crop
	Types of the Rootstocks
	Training and canopy management of each crop
	Nutrient management of different crops (Pome, Stone, Nut, Minor)
	Nursery management of different crops (Pome, Stone, Nut, Minor)
	Disease management of different crops (Pome, Stone, Nut, Minor)
	Orchard establishment of different crops (Pome, Stone, Nut, Minor)
	Spray schedule of the different crops
	Harvesting times of different crops (Pome, Stone, Nut, Minor)
	Grading and Storage of different crops (Pome, Stone, Nut, Minor)
	Packaging, Branding and Marketing of different crops (Pome, Stone, Nut,)
Floriculture and Landscape Architecture	Cut flowers
	Bulbous flowers
	Seed production
	Greenhouse production
	Pot plant production
	Nursery production
	Aromatic crops
	Turf management
Food Science & Technology	Food Safety
	Post harvest Management with special emphasis on CA storage
	Fruit processing
	Vegetable processing
	Bakery and Rice Milling
	Honey & Oilseed processing
	Dairy technology
	Fish, meat and egg processing
Nutrition	

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Plant Pathology	Fruit Pathology
	Diseases of Walnut, Almond and Cherry
	Diseases of Stone fruits
	Diseases of Apple, Pear
	Diseases of Grapes, Strawberry and Chestnut
	Vegetable Pathology
	Diseases of Beans, Onion and Garlic
	Diseases of Vegetable pulses
	Diseases of Cucurbits
	Diseases of Solanaceous crops
	Diseases of Cruciferous Crops
	Floriculture Pathology
	Diseases of Tulip, Gladiolus, Carnation and Gerbera
	Mushroom Cultivation
Entomology	Insect Pests of Solanaceous Vegetable crops and their Management
	Insect Pests of Leguminous Vegetable crops and their Management
	Insect Pests of Cucurbitaceous Vegetable crops and their Management
	Insect Pests of Root Vegetable crops and their Management
	Biological Control of pests
	Insect Pests of Temperate Fruit Crops and their Management
	Insect Pests of Floriculture Crops and their Management
	Insect Pests in protected cultivation and their Management
	Insect Pests of storage and processed fruit crops and their Management
	Honey Bees Pests, Enemies, Diseases and their Management
	Native insect pollinators and pollination Management
Soil Science	Basics of soil and its properties
	Major and micro-nutrients
	Fertilizers and Manures
	Deficiency Symptoms of nutrient elements in plants
	Methods of soil and plant sampling
Agro-meteorology	Meteorology
	Agricultural meteorology
	Crop weather relations
	Agro meteorological measurements
	Crop weather models
	Weather forecasting
	Climate Risk management
Plant Physiology	Physiological Disorder
	Hydroponics
Microbiology	Biofertilizers
	Bio-pesticides
	Waste management
	Food & Nutritional Biochemistry
Environmental	Environmental Pollution

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Sciences	Eco-friendly Products
	Eco toxicology
	Solid Waste Management
	Agriculture and Environment
Agri Business Management	Macro Economics
	Natural Resource Management
	Digital marketing
	Business Accounting and Finance
	Agri business and marketing
	Production Economics

(b) Disciplines and Sub-disciplines of Fisheries

Name of Discipline	Sub-discipline
Fisheries	Aquatic Animal Health Management
Fisheries	Post Harvest technology (Fisheries)
Fisheries	Fish Nutrition & Biochemistry
Fishery Engineering	RAS
Fishery Engineering	Cold Storage & Refrigeration
Fishery Engineering	Biofloc Fish Farming
Fisheries	Aquatic Environment Management
Aquaculture	Hatchery Management
Aquaculture	Race ways and Carp Farming
Fisheries	Fisheries Resource Management
	Social Science

(c) Disciplines and Sub-disciplines of Agri-Engineering

Name of Discipline	Sub-discipline
Farm Mechanization and Automation	I.C. Engine
	Land development Machinery
	Sowing and Planting Machinery
	Inter-culture Equipment/Machines
	Harvesting Machinery & Threshing Machinery
	Irrigation Pumps
Sensor Based Smart Agriculture	Sensors and IoT Technology for Smart Farming

(d) Disciplines and Sub-disciplines of Forestry

Name of Discipline	Sub-discipline
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Forest Products & Utilization	Cultivation and Conservation of Medicinal & Aromatic Plants
	Harvesting of Medicinal & Aromatic Plants
	Post-Harvest Management of Medicinal & Aromatic Plants
	Marketing and trade of MAPS
	Silviculture
Forest Biology and Tree Improvement	Tree Improvement
	Forest Botany
	Forest Biology
Silviculture and Agro-forestry	Silviculture
	Agro-Forestry
Wild Life Science	Wild life management
	Wild life biology

(e) Disciplines and Sub-disciplines of Sericulture

Name of Discipline	Sub-discipline
Sericulture	Soil preparation and mulberry propagation
	Cultivation of mulberry and nutrient management
	Chawkie leaf production technology
	Mulberry diseases and their management
	Pests of mulberry and their management
	Intercropping in mulberry
	Business Plan
	Financial Plan
	Pre requisities for Bivoltine Silkworm Rearing
	Silkworm Rearing (Chawki and Lateage)
	Mounting & Mountages, cocoon harvesting drying and storage
	Silkworm Diseases and Management
	Mulberry leaf harvesting, preservation and quality management
	Silkworm Seed Production Technology
	Silkworm pathology

(f) Disciplines and Sub-disciplines of Agriculture

Name of Discipline	Sub-discipline
Genetics and Plant Breeding	Rice Genetics and Molecular Breeding
	Tissue culture and Buck-wheat Improvement
	Genetics improvement of Kala Zeera.
	Pulse Breeding
	Buck wheat Breeding

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	Wheat Molecular Breeding
	Maize Molecular Breeding for Nutritional Improvement.
	Saffron and Oil seed Breeding
Agronomy	Organic farming
	Agro-metrology
	Crop Production
	Agrostology
	Crop production/Water Management
	Crop production
	Crop Production and Weed Management
	Agronomy of Field Crops
Soil Science	Soil fertility
	Soil Fertility/Chemistry
	Soil Fertility
	Soil Physics
	Soil Fertility
	Soil Fertility/Chemistry
Horticulture	Fruit Physiology
	Fruit Production Technology
	Nursery Production
	Fruit Science
	Vegetable Science
	Vegetable Seed Production
	Floriculture & Landscaping Architecture
Plant Pathology	Disease management in Rice
	Mycology
	Fungal phytopathology
	Integrated Disease Management
	Chemical Disease Management
Basic Sciences	Biochemistry
	Soil Microbiology
	Animal Sciences
	Plant Physiology
	Agriculture Microbiology
Agriculture Entomology	Nematology
	Biological control of pests
	Economic Entomology and Apiculture
	Toxicology and Economic Entomology

(g) Disciplines and Sub-disciplines of Veterinary Sciences

Name of Discipline	Sub-discipline
Animal Reproduction, Gynaecology and Obstetrics	Veterinary Gynaecology
	Veterinary Obstetrics

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	Female Infertility
	Veterinary Andrology
Veterinary Public Health	Food Hygiene
	Environmental Hygiene
	Food Microbiology
	Epidemiology
Veterinary Microbiology and Immunology	Veterinary Virology
	Veterinary Bacteriology
	Veterinary Immunology
	Vaccinology
Clinical Veterinary Medicine	Large Animal Gastroenterology
	Drug Residues in Animal Foods
	Veterinary Dermatology and Metabolic Diseases
	Urinary System
	Large Animal Gastroenterology
Veterinary Pathology	Avian Pathology
	Clinical Pathology
	Toxico-Pathology
	Infectious Diseases
Veterinary Surgery and Radiology	Soft Tissue Surgery
	Physiotherapy
	Diagnostic Imaging
	Minimally Invasive Surgery
Veterinary Epidemiology and Preventive Medicine	Infectious diseases of large animals
	Infectious diseases of large and small animals
Livestock Production and Management	Cattle/Buffalo Management
	Sheep/Goat Management
	Poultry Management
	Waste management
Livestock Products Technology	Milk and Milk Products Technology
	Meat and Meat Products Technology
	Animal Fibre Technology
Animal Nutrition	Ruminant Nutrition
	Poultry Nutrition
	Feed Technology
	Non conventional Feeds
Animal Breeding and Genetics	Molecular Genetics
	Statistical genetics
	Animal Breeding
	Quantitative Genetics

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Subject: Sample FAQs:

1. Answers should be all textual

Answers should only contain textual data. There should be no media like images or some audio included in the answers.

Please also avoid including charts or tables in the answers rather explain the information on charts or tables in a textual format.

2. Questions should be comprehensive

Questions should be comprehensive and inclusive. We will have better efficiency if questions are not very specific and cover a broad topic instead.

For example:

“What fertilizer should you use for mushroom farming?” is not a good question. As it is a very specific question with a very focused answer. It does not provide any advantage to a Large Language Model that ChatGPT is.

Instead, we should be creating questions which are a little broad and contain answers to the small questions like above. For example

How to fertilize soil for mushrooms?

The above question will answer the fertilization practises in detail and will also include the answer to questions like **“What fertilizer should you use for mushroom farming?”**

3. A set of questions should cover a document (Like research papers, blogs, or chapters)

Content should be in a way that a large topic/document (**Like research papers, blogs, or chapters**) can be converted into a question and answer format

For example, there is a research paper about mushroom farming. Which can be converted into a set of questions like below.

What are the major steps of mushroom farming?

Mushroom farming consists of six steps, and although the divisions are somewhat arbitrary, these steps identify what is needed to form a production system. The six steps



are Phase I composting, Phase II composting, spawning, casing, pinning, and cropping. These steps are described in their naturally occurring sequence, emphasising the salient features within each step. Compost provides nutrients needed for mushrooms to grow. Two types of material are generally used for mushroom compost, the most used and least expensive being wheat straw-bedded horse manure. Synthetic compost is usually made from hay and wheat straw, although the term often refers to any mushroom compost where the prime ingredient is not horse manure. Both types of compost require the addition of nitrogen supplements and a conditioning agent, gypsum.

1. Making Mushroom Compost
2. Spawning etc.
3. Casign etc.

Then there should be subsequent questions to describe each step in detail

How to make mushroom compost?

What is mushroom spawning and how to do it?

What are best practices for mushroom spawning?

And, by following this we can cover a large blog, research paper or a topic in the form of questions. So, we will still provide the model a complete knowledge base in the form of research papers or blogs but it will be broken down into questions to provide context.

