## Training Course on Forage Processing Technology for Developing Countries

Name	Training Course on Forage Processing Technology for Developing Countries			
Organizer	Yuan Longping High-tech Agriculture Co.,Ltd.			
Time	June 28th -July 11th , 2023		Language	English
Invited Countries	Developing Countries		Number of Participants	25
Purpose	Through this training, the first purpose is to make the participants know more about China's national conditions and culture; the second is to cultivate more professionals in the field of feed processing and animal husbandry for developing countries; the third is to introduce the innovative development and flexible application of technology of China's feed production and processing; the forth is to help developing countries make progress in the development of feed production and animal husbandry technology, so as to improve the production capacity of animal husbandry; the fifth is to promote mutual exchanges, and strengthen deeper cooperation in the field between China and other developing countries.			
Requirements for Participants	Professional Background Language	Area or specialty: working and specialty in the related agriculture fieldsPosition: Government officials, researchers and technicians in related agriculture fields especially in forage processing or animal husbandry  Fluent in English (listening, reading, speaking and writing)		
	Proficiency Others	Participants have access to software such as the Zoom or VooV Meeting.  The organizer will provide guidance and technical assistance remotely.		
	1. Training objectives			
Training Content	This training course aims to strengthen the exchange of forage process technology between China and other developing countries, and promote decooperation in the fields of agriculture, animal husbandry and feed processing. It will for 14 days and the working language will be English. The training will be conductable through online lectures, exchange meetings, online visual visits and visual internshand well-known industry experts and scholars and representatives of agricultural hand tech enterprises of China will be invited to give lectures. The training program introduce the classification and raw materials of feed, animal nutrition requirements feed formula, determination of feed nutrient composition, selection, purchase, storage quality control of raw material, quality control of feed processing, commonly to			and promote deeper d processing. It will last ning will be conducted and visual internships, es of agricultural higher training program will crition requirements and n, purchase, storage and

production of silage, ammonification of straw, cultivation of aquatic products, cattle, pigs and other poultry.

## 2. Main training courses and the outline in brief

- (1) China's national conditions and achievements in reform and opening up: Introduction to China's development status of Politics, economy, society, culture, etc and China's successful experience in reform and opening up.
- (2) Introduction to classification of feed and raw materials: it introduces 8 major international classifications (roughage, feed green, silage, energy feeds, protein feeds, mineral feeds, vitamin feeds, feeds additives), with pictures, and combines text with dictation to give trainees a perceptual understanding; it will list the main nutritional parameters (crude protein, crude fat, crude fiber) to help trainees memorize.
- (3) Analysis of feed nutrient composition: around the conventional measurement method of feed, it will help the trainees know how the main nutrient parameters of feed be measured.
- (4) Introduction to Process and equipment for receiving, cleaning and conveying raw materials:
- (5) Introduction to technology and equipment of feed crushing, batching, mixing, granulating, and puffing
- (6) Introduction to automatic control, liquid addition and post-spraying technology and equipment
- (7) Production of silage: a detailed description of silage will be given, including not only the production technology of contemporary China, but also the methods that developing countries can master.
- (8) Introduction to hygienic testing technology and safety control of aquatic feed: it mainly introduces the problems of feed hygienic quality monitoring, hygienic standards of aquatic feeds, involving instruments and equipment of aquatic feed hygienic testing, the objects and methods of hygienic testing of aquatic feeds, as well as the hygienic quality of aquatic feeds supervision and management and so on.
- (9) Introduction to aquatic feed and feed additives: it will mainly introduces the nutrition required by aquatic animals, the types of aquatic feeds, nutrient components and physiological functions, classification methods, and the cultivation methods of natural bait, plant bait, animal bait, and microbial bait in aquatic feed, as well as types, efficacy and application of aquatic feed additives.
  - (10) Introduction to design of aquatic feed formula and formulated feed production

technology: it mainly introduces the types and characteristics of aquatic compound feed, design principles, design methods, design techniques and design features of aquatic compound feed formula, as well as the factors that should be considered when designing formula, and aquatic product coordination the production technology of aquatic compound feed and its real examples.

- (11) Introduction to control and quality management of aquatic feed raw material: it mainly introduces the types, characteristics and functions of feed raw materials commonly used in aquatic feed, as well as the corresponding quality control requirements and common testing methods.
- (12) Introduction to processing technology and technique of aquatic feed: it mainly introduce the development of aquatic feed processing, the characteristics of aquatic feed processing, the classification of aquatic feed processing, the production process with shrimp feed as an example, and the production process with extruded fish feed as an example.
- (13) Introduction to aquatic animal breeding and precision feeding technology: it mainly introduces the main aquaculture technologies, focusing on the concepts and supporting breeding technologies of the three intensive breeding modes of pond engineering breeding, factory breeding, and container breeding; and Take tilapia pond breeding as an example, introduces the precise feeding technology.
- (14) Introduction to pasture planting: through several pastures (alfalfa, grassiness, ryegrass) that are planted more in contemporary China, with field preparation-base fertilizer-planting methods-field management as the main line, the trainees will understand the planting of pasture and apply the theories to the cultivation of food crops.

## 3. Online virtual visits

- (1)To visit the fishery of Hunan Fisheries Research Institute: learn about the institute and its fishery, and exchange aquatic feed processing technology.
- (2)To visit a well-known feed production enterprise in Hunan Province online, to learn about feed processing technology, process flow and quality management.

## 4. Brief introduction of lecturers and professors

- (1) Prof. Wu Baixin, Senior Livestock Pastor, was appointed by the Ministry of Agriculture of China to teach in Ethiopia for 4 years (teaching animal husbandry technology in English), and worked as an agricultural expert appointed by the Ministry of Commerce of China to Liberia for 1 year (teaching animal husbandry technology in English). As a livestock husbandry Professional trainers (English), Wu has trained 177 people in 5 batches of agricultural officials or cadres from 29 developing countries.
  - (2) Prof. He Wang, master's degree, from Hunan Fisheries Research Institute, is a senior

agronomist. He has been engaged in fishery environmental monitoring and research, fishery pollution accidents and treatment, water environment and aquatic product ecological farming, freshwater pearl farming, aquatic product quality safety and testing, and has participated in China's "Belt and Road Initiative" aiding to Africa as a senior aquatic expert.

- (3) Prof. Liu Li, doctor, associate researcher in Hunan Fisheries Science Research Institute, has successively served as the director of the inspection room of the Aquatic Product Quality Inspection and Testing Center (Changsha) of the Ministry of Agriculture, and the director of the Nutrition and Feed Research Office of the Hunan Fisheries Science Institute, and mainly engaged in supervision of the quality of aquatic products, development and research of new technologies and methods for aquatic product quality testing, evaluation and management of hazards and risk assessment of pesticide residues, drug residues, and heavy metal residues.
- (4) Prof. He Zhigang, from Hunan Fisheries Research Institute, master degree, a senior agronomist, has successively served as deputy chief and chief of the scientific research management department, mainly engaged in research on aquatic animal nutrition and feed and integrated rice and fish breeding. In 2019, he participated in the "2019 Burundi Rice Planting and Fishery Training Course" organized by Longping Hi-Tech company, and was responsible for the training of techniques of rice and fishery comprehensive planting and raising and related on-site visits.
- (5) Prof. Xie Jun, from Hunan University, has many years of work experience in international exchanges and cooperation, mainly engaged in English teaching and translation, Chinese culture and national conditions research, etc.
- (6) Mr. Weng Yong, Senior agronomist, served as deputy director of Longping Hightech International Training Center, senior agronomist, tutor for post-graduate students of China-Africa agricultural development and cooperation base of Hunan Agricultural University. He has served as general manager of Longping high-tech Tea Company and vice general manager of agricultural development company, with more than 20 years of experiences in agricultural technology application demonstration and extension. Besides, He has served as the head of the expert group of China's agricultural technical cooperation project with other country, and gathered rich experiences in management and teaching.
- (7) Mr. Chen Xiaoliang, a senior agronomist, has nearly 30 years of experience in agricultural technology application demonstration and promotion; has served as the expert group leader of China's foreign aid agricultural technology project for many times, and has 20 years of teaching and training management experience in agricultural foreign aid cooperation projects.
- (8) Mr. Wang Jianming, a senior engineer, has been engaged in feed production and processing for more than 20 years, has more than 10 years of experience as a qualified trainer in feed processing technology, and has been engaged in foreign aid training for 7

	years.			
	5. Materials to be prepared by the trainees			
	In order to facilitate exchanges with Chinese experts, please prepare materials related to the subject of the training of your country, such as: ①Introduction of your profession and your unit; ②Current status and existing problems of feed processing and livestock husbandry of your country; ③The Cooperation between your country and other countries or international organizations in the filed of feed processing and livestock husbandry; ④ The cooperation between your country and China in feed processing and livestock husbandry, etc.			
	6. Final test/assessment			
	In the form of test questions or essays			
Notes	1. The training program will be held online, which requires participants to prepare necessary equipment and devices such as internet connection, computer, microphone, camera, etc.			
	2. Participants should be punctual and well-disciplined. The Certificate of Completion will be issued to those who meet all the requirements including good attendance records.			
	3. Participants should enter the virtual classroom in advance with the screen name "NAME + COUNTRY" identical to the passport information.			
	4. Participants should respect and maintain the confidentiality and security of the information and data concerning the Seminar. Course materials will be shared to participants after class, which shall not be made public or posted via social media.			
	5. Participants should prepare report for discussion session(s) as scheduled.			
About the Organizer	Yuan Longping High-tech Agriculture Co., Ltd. (hereinafter referred to as Longping High-tech) is an international seed company named after the Academician Yuan Longping, the "Father of Hybrid Rice". CITIC Group is the controlling shareholder. Established in 1999 and listed in 2000, Longping High-tech ranked the 8 <sup>th</sup> of seed industry around the world in terms of comprehensive strength in 2018. Longping High-tech is awarded as "China-aid Hybrid Rice Technology Training Center" by the Ministry of Commerce of China.			
	Longping High-tech is mainly engaged in the seed business of hybrid rice, maize, vegetable, millet, edible sunflower, wheat, cotton and rape seeds, and provides agricultural services such as new-type professional farmers training, precision planting, quality grain trading, field restoration and development, brand agriculture, agricultural finance, etc The company has built a globalized commercial breeding system. With more than 10% of its operating income in R&D investment, Longping High-tech has established R&D centers in China, the Philippines, Pakistan, India, Brazil and USA, etc Its R&D and innovation capability of main crop seeds rank at the top level in the world.			

	Seizing the opportunity provided by the Belt and Road Initiative, Longping Hightech makes full use of its leading position in rice and maize seed industries and promotes its international operations around the world with subsidiaries established in the Philippines, India and Timor-Leste and trade ties with more than 40 countries and regions. At the same time, Longping High-tech actively carries out international training programs and agricultural cooperation, and has trained nearly 10,000 agricultural talents from more than 100 countries in Asia, Africa and Latin America, the South Pacific Region. Besides, Longping High-tech has undertaken more than 20 China-aid projects on technical cooperation, helping developing countries develop agriculture and solve food security
	with China's advanced agricultural technology, and making a significant contribution to global food security.
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