

Annex 1. The major research interests at institution

Laboratory of Gene Technology

- Production of biological products using recombinant DNA technology for agriculture;
- Gene expression regulation in plant and micro-organism;
- Biodiversity of valuable genetic resources;
- Conservation and propagation of valuable medicine plants;
- Production of bioactive compounds based on plant cells tissue culture.

Laboratory of Microbiology and Fermentation Technology

- Isolation and identification high value microorganisms;
- Application of microorganism for treatment environment pollution, aquaculture, enhance food storage and processing, and produce bio-fertilizer;
- Production and application of recombinant microbial enzymes;
- Identification and qualification metabolism of production pathway of high value from microorganism;
- Production of recombinant microorganism and application in industry;
- Production bio-products against pathogenic microorganism in plant and animal;
- Optimization fermentation technology and processing using microorganism.

Laboratory Immunology and Vaccine

- Isolation of pathogen microorganisms in livestock and aquatic animals;
- Isolation high value microorganisms for feeding and environmental treatment of livestock;
- Extraction antibody from egg yolk for treatment and prevention diseases affected on chickens, pigs and fishes;
- Recombinant expression in *Escherichia coli*;
- Development high quality diagnostic kits for rapid detection on animal diseases such as ELISA, immune-chromatography and recombinant vaccines.

Laboratory of Cell Technology

- Study on *in vitro* propagation of high value medicinal plants.
- Selection highly stresses tolerance cell lines (drought tolerance, flood tolerance, salt tolerance

...) and none-disease plants.

- Algal biomass production for functional food, feed for livestock animal and aquaculture.
- Production of high value bioactive compounds and biofuel from microalgae.
- Study on mechanisms of biosynthesis of bioactive compounds in plant and microalgae.
- Study on harmful algae and their toxins.

Annex 2. Research topics ARE AVAILABLE AT THE INSTITUTE

The candidates following the below research topics may receive scholarship including financial support for research, tuition fee and living fee.

Research topics	Financial support for research	Tuition fee	Living fee
Development <i>Vibrio parahaemolyticus</i> detection kit causing disease on fishes	100%	Partial depends on the laboratory capacity and student performance	
Development antibody for treatment <i>Vibrio</i> sp. causing disease on fishes	100%	Partial depends on the laboratory capacity and student performance	
Isolation and identification microorganism to control <i>Vibrio</i> sp. causing disease on shrimps and fishes	100%	Partial depends on the laboratory capacity and student performance	
Development <i>Vibrio</i> detection kit causing disease on shrimps	100%		
Application advanced techniques to develop and production saffron, tangerine in associated with identity brand in Bac Tra My, Quang Nam province	100%		
Quantitative analysis of phenotypes and genetically mapping of aromatic properties in <i>Luffa cylindrical</i>	100%	50% depends on the laboratory capacity and student performance	
Study on breeding of <i>Luffa cylindrical</i> using molecular markers and cultivation	100%	50% depends on the laboratory capacity and student performance	

techniques in Thua Thien Hue province			
Study on production biofertilizer from <i>Moringa oleifera</i> and evaluation on vegetables model in Thua Thien Hue	100%	50% depends on the laboratory capacity and student performance	

Annex 3. LIST OF AVAILABLE SCIENTIFIC SUPERVISORS

Scientific supervisor	Profile summary	Research interests
Assoc. Prof. Nguyen Thi Thu Lien	+ Number of projects: 6 + Publication: 30 + Potential PhD candidate supervising: 02	- The harmful algae and toxic of algae - Diversity and application of microalgae - Application of microalgae in aquaculture feeding, secondary compounds production , pharmaceutical materials, functional foods and fertilizers
Assoc. Prof. Truong Thi Hong Hai	+ Number of projects: 9 + Publication: 75 + Potential PhD candidate supervising: 03	- Quantitative analysis and mapping of aromatic trait in fruit of <i>Luffa cylindrical</i> - Using molecular markers in breeding of <i>Luffa cylindrica</i> . - Development of markers and gene-based marker lined to disease resistant genes in crops - Application of biotechnology for breeding of <i>Phytophthora</i> and nematode resistance in black pepper (<i>Piper nigrum</i>) - Study on diversity of <i>Panax vietnamensis</i> in Ngoc Linh - Study on production biofertilizer from <i>Moringa oleifera</i>
Assoc. Prof. Tran Quoc Dung	+ Number of projects: 6 + Publication: 62 +Potential PhD candidate supervising: 02	- Study on phenotype and genetic diversity of organisms
Assoc. Prof. Nguyen Quang Linh	+ Number of projects: 28 + Publication: 82	-Nutritional diseases and Systems for livestock and aquaculture

	+ Text books: 15 +Potential PhD candidate supervising: 02	
Dr. Nguyen Xuan Huy	+ Number of projects: 9 + Publication: 29 + Potential PhD candidate supervising: 02	- Plant based vaccine - Production recombinant protein from rice callus cells culture - RNAi based technology for knock-down gene coding for “effector” of <i>Meloidogyne graminicola</i> causing in rice
Dr. Hoang Tan Quang	+ Number of projects: 3 + Publication: 48 + Potential PhD candidate supervising: 02	+ Production secondary metabolite from plant cells culture + Study on genetic diversity, molecular markers for breeding + Study on plant physiology + Production recombinant protein/enzyme and application in agriculture and environment
Dr. Nguyen Duc Huy	+ Number of projects: 3 + Publication: 22 + Potential PhD candidate supervising: 02	+ Metabolic pathway in microorganism + Recombinant expression in heterologous hosts + Production and application of microorganism
Dr. Huynh Van Chuong	+ Number of projects: 11 + Publication: 12 + Potential PhD candidate supervising: 01	- Applied Biotechnology in animal science - Diagnosis, prevention and treatment of diseases in livestock animals. - Co-disease of human and animal - Production and application of vaccines, antibodies and herbs in prevention and treatment of diseases in livestock animals.