

Advanced Next-Generation Greenhouse Horticulture by IoP (Internet of Plants)

Research Theme		Principal Researcher
SP1	Development of efficient acquisition method for horticultural data all over Kochi Prefecture	H.Furusawa
SP2	Advanced Next-Generation Kochi Greenhouse Horticulture with the Autonomous Performance and Progress of IoP (Internet of Plants) Farming Support System	M.Kitano
SP3	Field experiment evaluation on the socio-economic impact of IoP	H.Nomura
A1	Visualization of crop eco-physiological functions and development of those dynamic models as a basis of IoP	D.Yasutake
A2	Potential estimation of agricultural productions from IoP-based green-house system using crop production models	M.Mori
A3	Creation of Chinese chive( <i>Allium tuberosum</i> ) farming system in the virtual space on games	T.Ogata
A4	Decision of barometer for plant growth diagnosis, presentation of barometer for optimum environmental condition in plant growth and development of rational training method	S.Yamane
A5	Improvement of stress tolerance through control of mineral transport in plants	D.Ueno
A6	Visualization of growing conditions of farm products using synchrotron radiation x-ray fluorescence imaging	Y.Nishiwaki
A7	Study of Irrigation and fertilization management for the cultivation of fruit tree crops based on IoP technology	K.Hamada
A8	Control and management of field environmental conditions on crop production	A.Miyazaki
A9	Efficiency improvement of crop plant production by applying smart-horticultural techniques - from basic study to application -	K.Shimasaki
A10	Developing a high-accuracy crop model by incorporating annual changes in photosynthetic potential and its acclimatization responses to environments	M.Doi
B1	Development of technology to increase yield of eggplant( <i>Solanum melongena</i> ) by plant growth measurement in forcing culture	A.Takahashi
B2	Development of technology to increase the yield of Chinese chive( <i>Allium tuberosum</i> ) by plant growth measurement in forcing culture	A.Takahashi
B3	Development of technology to increase the yield of cucumber( <i>Cucumis sativus</i> ) and sweet pepper( <i>Capsicum annuum</i> ) by plant growth measurement in forcing culture	A.Takahashi
B4	Developments of inorganic phosphor materials and photo-convertible films realizing an efficient production of plants	T.Hasegawa
B5	Spectroscopic measurement of solar radiation with data collection for analysis of plant growth	A.Hatta
B6	Development of carbon dioxide application technology and solar radiation proportional irrigation technology for small leek and elucidation of functional components	E.Wada
B7	Development of efficient fertilizer application for perilla ( <i>Perilla frutescens</i> var. ) under carbon dioxide application	Y.Hayami
B8	Study on increasing yield and improving quality by light-irradiation in facility cultivation major items(Flower) in Kochi	M.Hiraishi
B9	Study of environmental control technique for protected cultivation of Citrus	N.Ohara
B10	Study of flower setting and creating technical indicators for exceptional Yuzu ( <i>citrus junos Sieb.ex Tanaka</i> ) farmers	N.Ohara
C1	Labor-saving research by utilizing the learning technology, the recognition technology and the automation technology	M.Fukumoto
C2	Advance of small-scale horticultural greenhouse in mountainous area	K.Miyauchi
C3	Analysis of workability by different cultivation methods and quantification of work efficiency	Nagao
D1	Analysis of plant disease resistance and establishment of crop health examination for IoP	A.Kiba
D2	Analysis on Ralstonia solanacearum virulence-related signaling pathways and development of control system for bacterial wilt diseases caused by R. Solanacearum	Y.HiKichi
D3	Improvement of productivity with simultaneous achievement of environmental control and IPM by spraying slightly acidic electrolyzed water	K.Ohnishi
D4	Establishment of domestic hunterfly, <i>Coenosia attenuata</i> (Muscidae, Diptera), as the patrol type biological control agent	R.Arakawa
D5	Molecular identification of minute insects and mites in the community on leaf surfaces	K.Ito
D6	Detecting causal relationships between pests, predators, and climatic variables using nonlinear time series models	N.Suzuki
D7	Visualization of insect pest occurrence and development of a novel pesticide	S.Tebayashi
D8	Development of IoP-based technologies for pest monitoring and outbreak prediction	Kochi Agricultural Research Center
D9	Development of integrated pest management technology suitable for Advanced Next-generation greenhouse horticulture	Kochi Agricultural Research Center
E1	Application of IoP to catch crop systems for reducing environmental loadings	M.Maeda
E2	Nutrient recovery and value production by algae from hydroponic effluent	T.Fujiwara
E3	Development of disinfection technology for plant pathogens in hydroponic culture medium	T.Fujiwara
E4	Development of sustainable hydroponic systems based on IoP and modeling of material dynamics in root area	Y.Sago
E5	Material management and resource recovery of agricultural waste for sustainable development in farming areas	S.Akao
F&H1	Evaluation of agricultural products in Kochi Prefecture by sensory analysis system	T.Shimamura
F&H2	Development of a quantitative method for bioactive compound in agricultural products in Kochi Prefecture (Quantification of sulfur-containing compounds in agricultural products)	T.Kashiwagi
F&H3	Establishment of quantitative method for functional compounds in agricultural products in Kochi "Comprehensive quantification for flavonoids in sweet pepper( <i>Capsicum annuum</i> )"	C.Kim
F&H4	Portable and automatic electrochemical antioxidant capacity sensor: development and application to agricultural crops and food	C.Ueda
F&H5	Evaluation of function of agricultural products in Kochi Prefecture by <i>C.elegans</i> model and development of unique food function claims	H.Tomi
F&H6	Finding and evaluation of functional substances in agricultural products in Kochi Prefecture	S.Mizobuchi
F&H7	Evaluation of safety, taste and functionality of agricultural products from Kochi prefecture and its marketing strategy	M.Uchino
G1	Development of non-destructive determination method of nutrients contained in agricultural products in Kochi Prefecture	H.Watanabe
G2	Actual measurement and reference value creation of agricultural products in Kochi Prefecture	K.Takemoto
G3	Development of non-destructive determination method of taste component contained in agricultural products in Kochi Prefecture	H.Watanabe
G4	Standardization of ingredients in Chinese chive( <i>Allium tuberosum</i> ) for food with nutrient function claims	S.Numata
G5	Improvement of palatability and nutritional value of Chinese chive( <i>Allium tuberosum</i> )	M.Suzuki
G6	Investigation about the functionality of IoP products intended to increase a healthspan	Y.Takei
I1&2	Evaluation of functionality of unique agricultural products in Kochi	K.Miyazaki
I3	Breeding of sweet pepper "Shishito" ( <i>Capsicum annuum</i> ) without pungency	S.Nabeshima
J1	Development of forecasting system for horticultural production volume and timing	T.Okabayashi
J2	Development of prediction systems such as the volume of shipment and the shipment time	M.Fukumoto
J3	Study of production forecasting system for Yuzu ( <i>citrus junos</i> )	N.Ohara
K2	Development of optimization system for Horticultural Production logistics and money flow	A.Senkoushi
L1	Promotion of international-level GAP (Good Agricultural Practice)	M.Matsuoka
M1	Integration of various types of information from horticulture production to distribution into IoP(Internet of Plants) cloud and development of feedback method for useful information obtained from IoP(Internet of Plants) cloud to all horticulture growers	T.Okabayashi
M2	Optimization of the information security network for the experiment of the sensor network	M.Fukumoto
M3	System data analysis for integrated horticulture	H.Furusawa