

WIMARC Integrated Data Platform

ระบบบูรณาการข้อมูลสำหรับการเพิ่มมูลค่าทางการเกษตร

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National Electronics and Computer Technology Center (NECTEC)
อโภส ตรีทวีศักดิ์
ทีมวิจัยเทคโนโลยีเกษตรดิจิทัล (DAT)

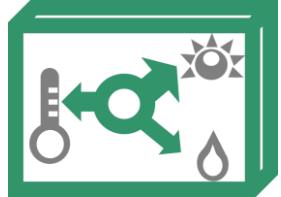
Farming Management



camera



IoT-sensors



Weather Data

ข้อมูลอากาศ

Crop Requirement

วิธีการและขั้นตอนการปลูก

Irrigation

การให้น้ำ

Pest & Diseases

โรคและแมลง

Fertilization

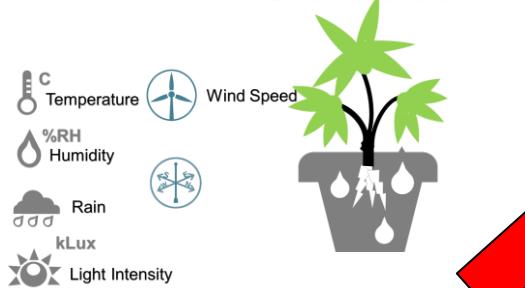
การให้ปุ๋ย



Management Calendar

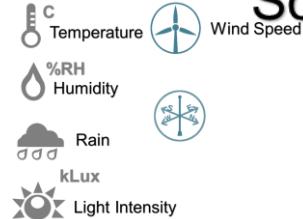
ปฏิทินการจัดการการปลูก

Soil Moisture



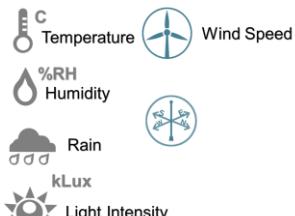
เก็บผลผลิต

Soil Moisture



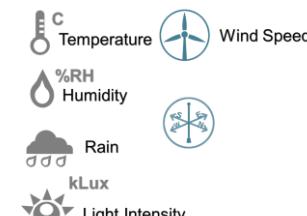
ออกดอก

Soil Moisture



บำรุงต้น

Soil Moisture

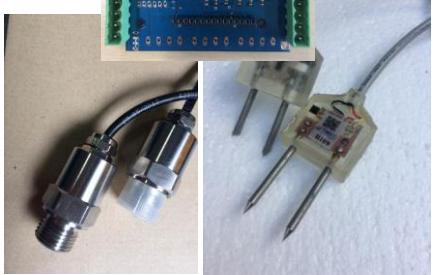
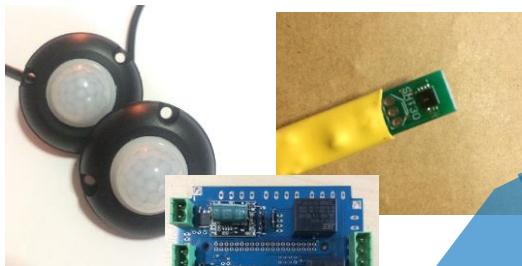


เตรียมการออกดอก

Integrated Data Platform



camera



IoT-sensors

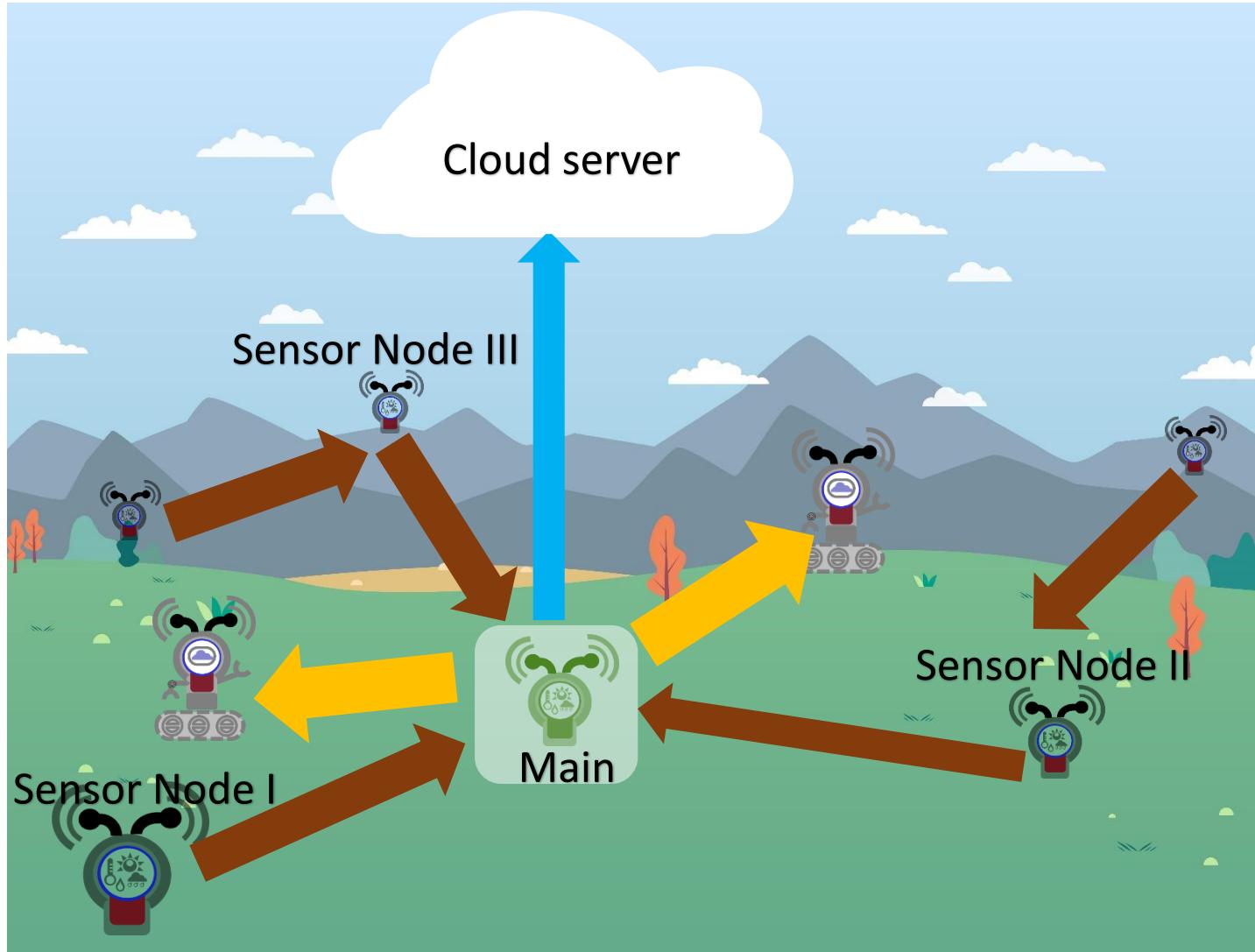


External Devices



Dashboard
Web+app

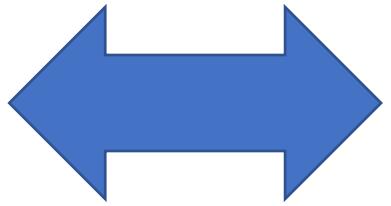
Wireless Sensor Network



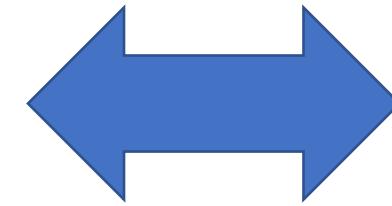
WIMARC System



Sensors Node I



Main



Sensors Node II

Network Coverage Area

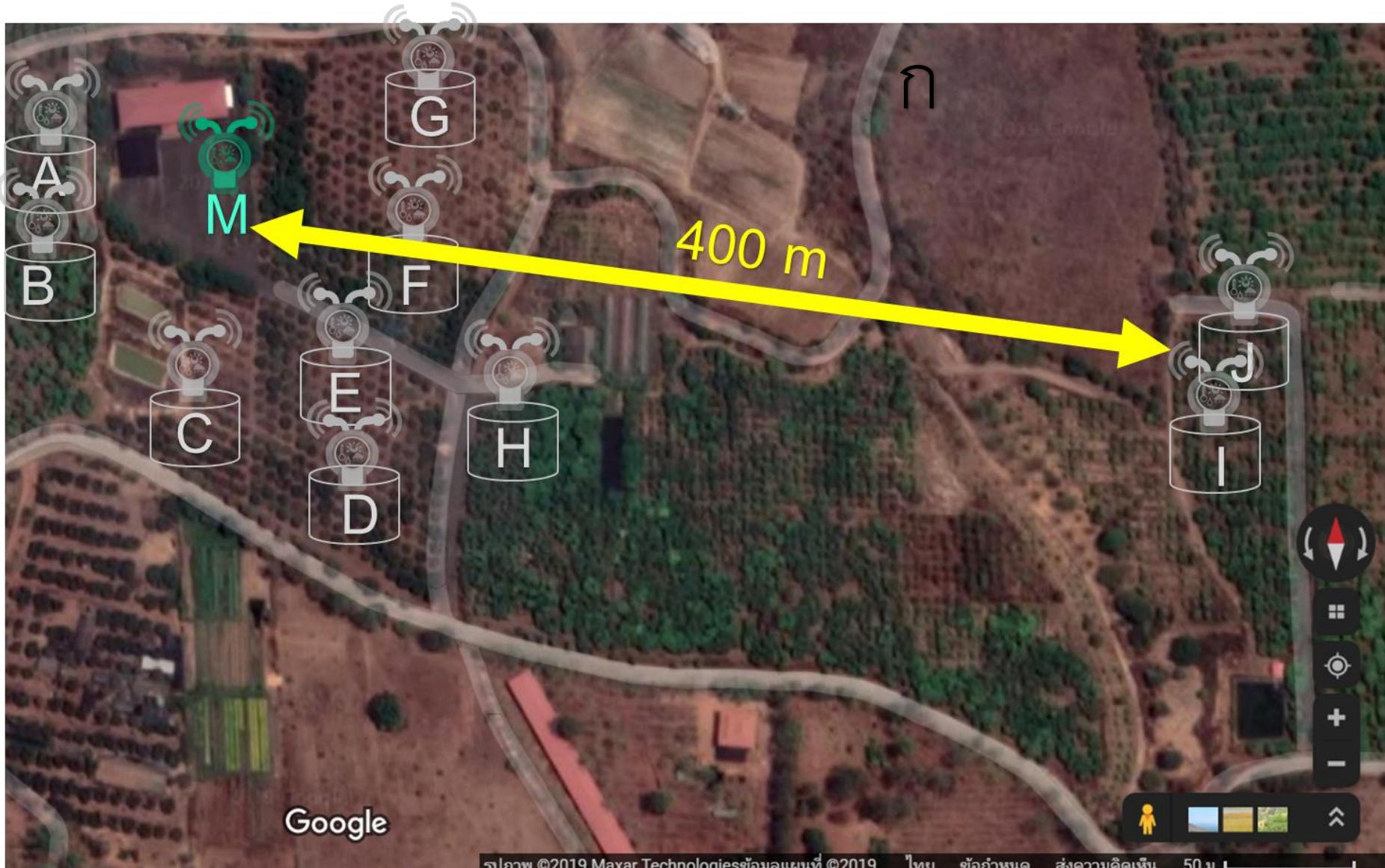


Image Information



Time-Series
Image

การจัดการแปลง
Farm Management
-Product ผลผลิต

Irrigation การให้น้ำ
-Period

Fertilization การให้ปุ๋ย
-Response การตอบสนอง

โรคและแมลง
Pest&Pesticide

Image to Data

Weather Data

ข้อมูลอากาศ

Crop Requirement

วิธีการและขั้นตอนการปลูก

Irrigation

การให้น้ำ

Pest & Diseases

โรคและแมลง

Fertilization

การให้ปุ๋ย



Knowledge Transfer



Reference Crop รอบปลูกอ้างอิง



30 วัน



Digital
Crop
Calendar
ปฏิทินการปลูก
ดิจิตอล

Digital Crop Calendar

Reference Crop รอบปีก่อนอิ่ง



30 วัน



Digital
Crop
Calendar
ปฏิทินการปลูก
ดิจิตอล

Day	Time	Ref Growth	Actual Growth	Set Temp	Read Temp	Ventil	Set Humid	Humid	Irrigation	Fertil	Pesticide
1	8.00	0	8	30	30	Off	70	66	5 min	46-0-0	
	16.00			30	33	on	70	68			

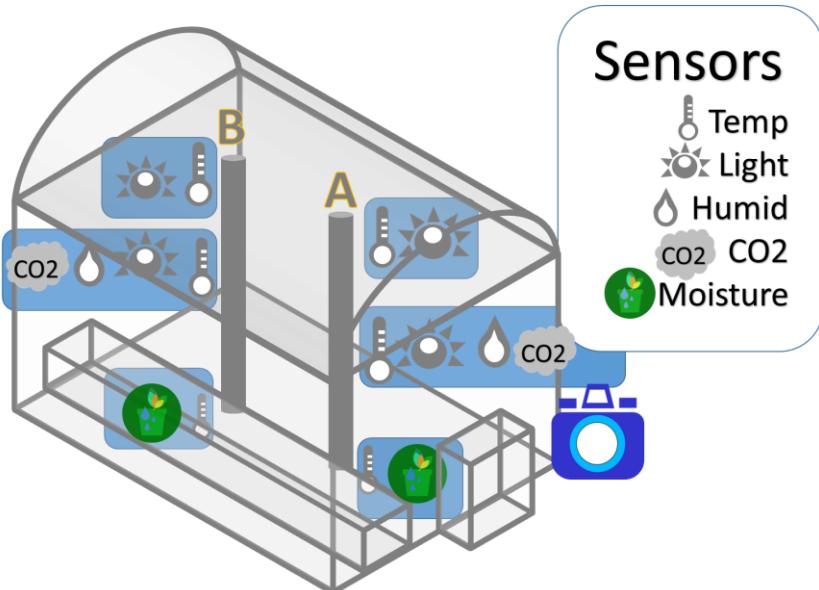
Day	Time	Ref Growth	Actual Growth	Set Temp	Read Temp	Ventil	Set Humid	Humid	Irrigation	Fertil	Pesticide
30	8.00	200	180	30	30	Off	70	66			
	9.00			30	33	on	70	68			

Digital Crop Calendar

Day	Time	Ref Growth	Actual Growth	Set Temp	Read Temp	Ventil	Set Humid	Hu mid	Irrigation	Fertil	Pesticide
1	8.00	0	8	30	30	Off	70	66	5 min	46-0-0	
	16.00			30	33	on	70	68			



Day	Time	Ref Growth	Actual Growth	Set Temp	Read Temp	Ventil	Set Humid	Hu mid	Irrigation	Fertil	Pesticide
30	8.00	200	180	30	30	Off	70	66			
	9.00			30	33	on	70	68			

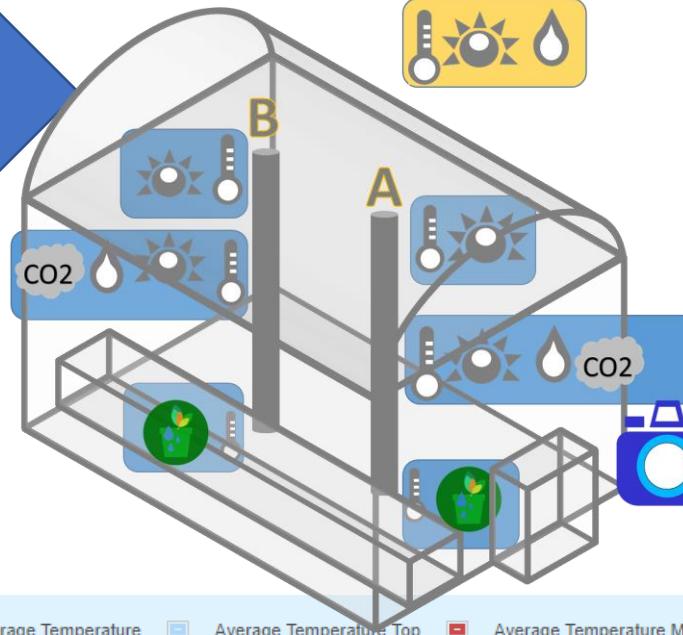


Crop Temperature

Reference Crop รอบปีก่อนอิจ



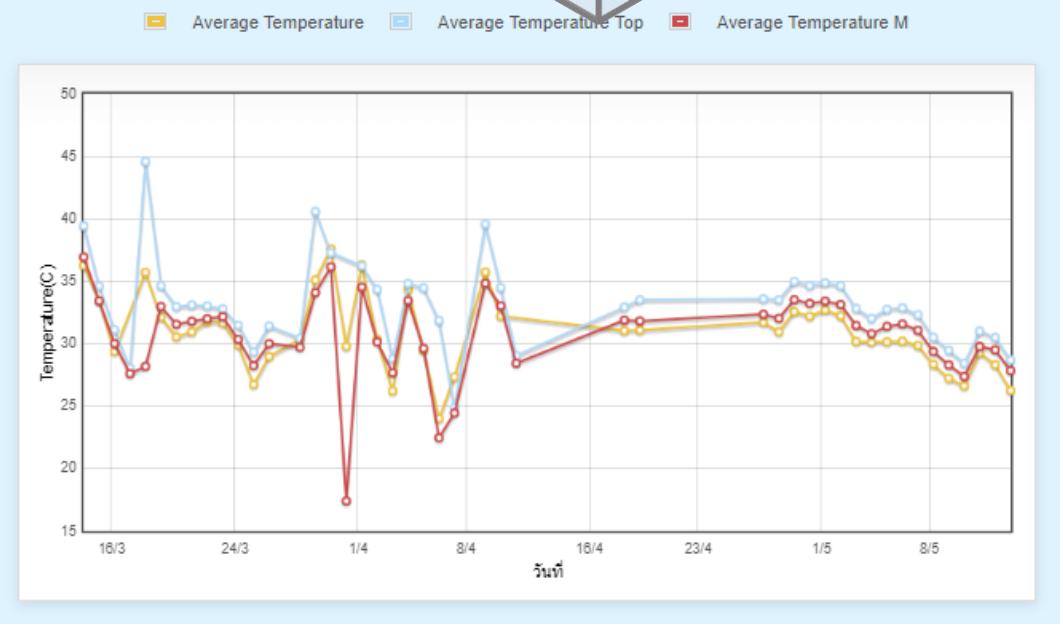
30 วัน



Ave

Top

Mid



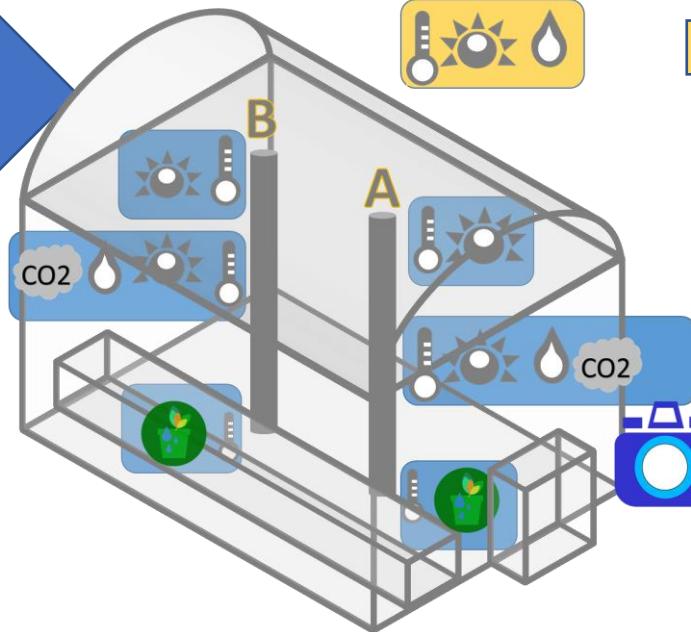
Ave. Temp
32C

Crop Humidity

Reference Crop รอบปีก่อนอิจ



30 วัน



Top



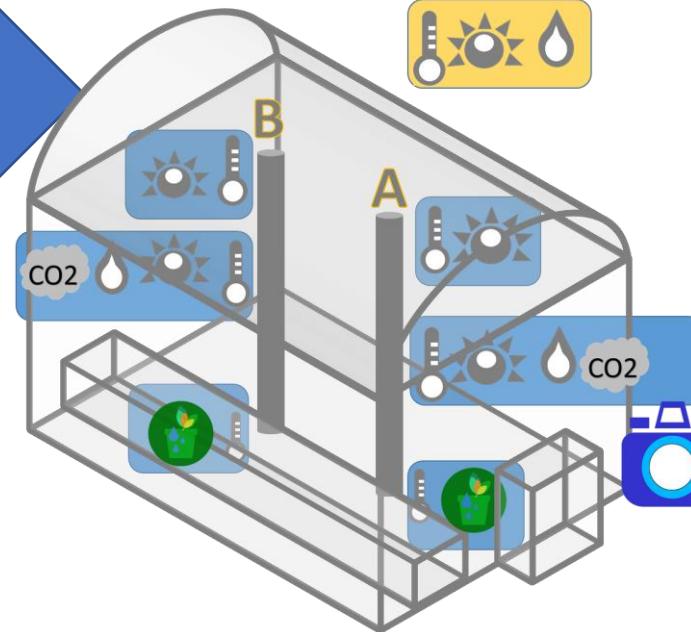
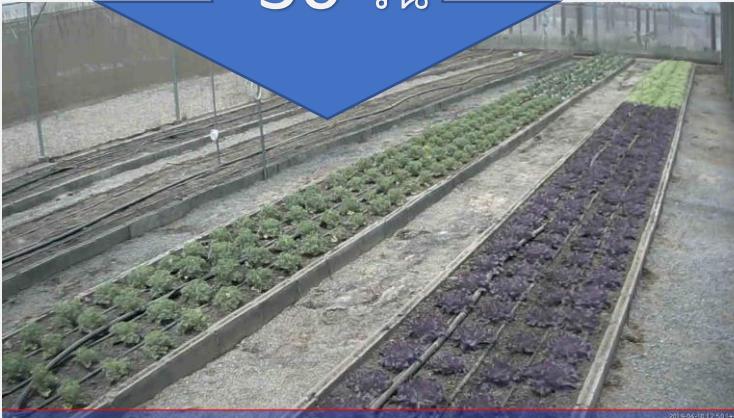
Ave. Humid
60% RH

Crop Light

Reference Crop รอบปีก่อนอิง



30 วัน



Ave

Top

Mid



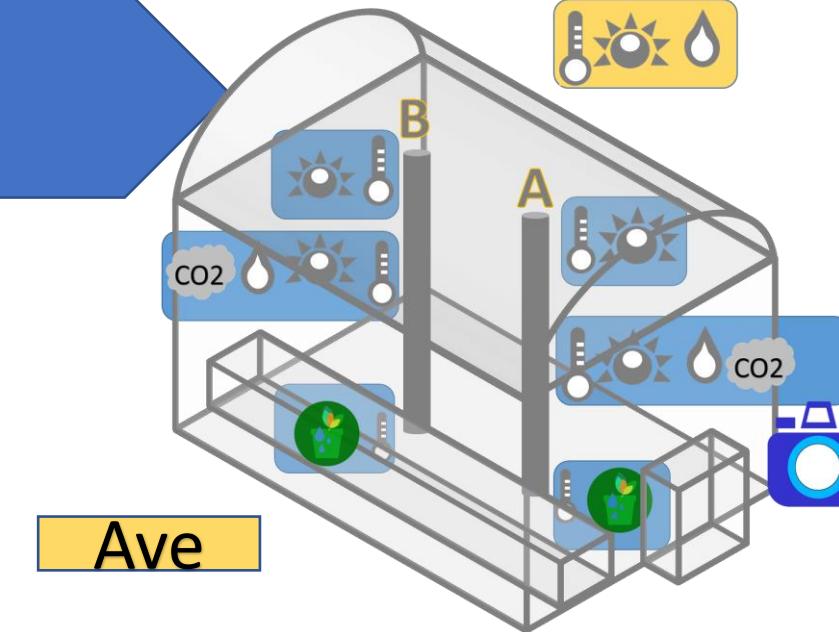
Ave. Light
40 kLux

Crop Humidity

Reference Crop รอบปีก่อนอิง



30 วัน



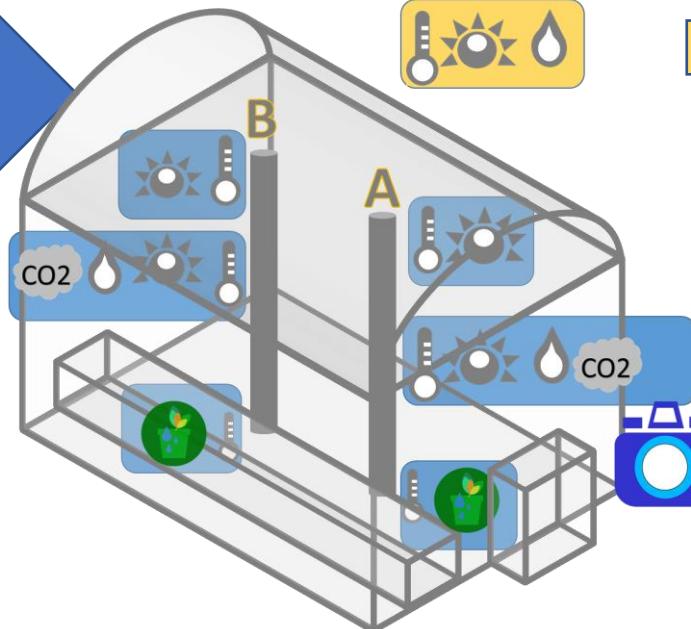
Ave. MC
90%

Crop Moisture Content

Reference Crop รอบปลูกอ้างอิง



30 วัน

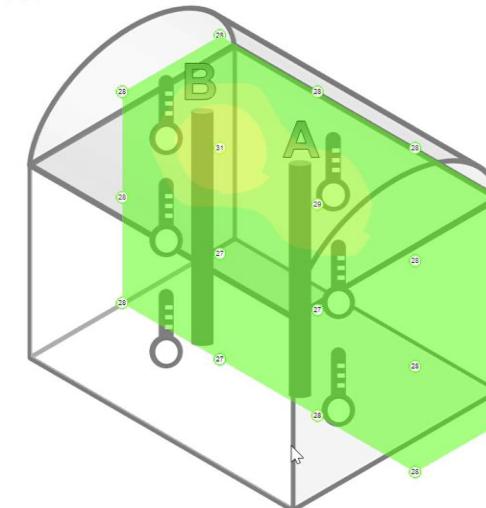
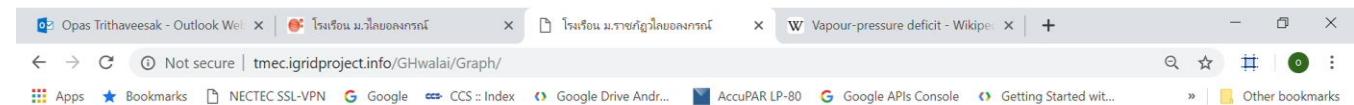
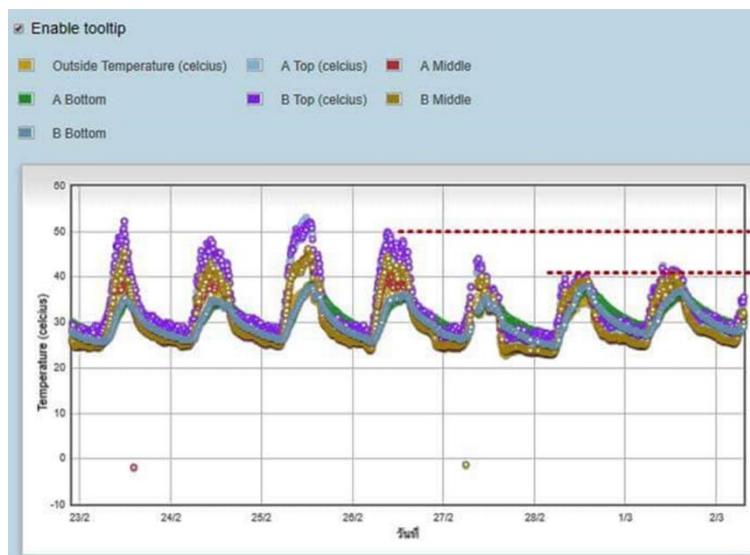


Ave



Ave. Humid
60% RH

4D Sensor-Visualization



Growth Rate



20190314H12.jp
g



20190315H12.jp
g



20190316H12.jp
g



20190319H12.jp
g



20190320H12.jp
g



20190321H12.jp
g



20190324H12.jp
g



20190325H12.jp
g



20190326H12.jp
g



20190329H12.jp
g



20190401H12.jp
g



20190402H12.jp
g



20190403H12.jp
g



20190404H12.jp
g



20190405H12.jp
g



20190409H12.jp
g



20190410H12.jp
g



20190418H12.jp
g



20190419H12.jp
g



20190427H12.jp
g



20190428H12.jp
g



20190429H12.jp
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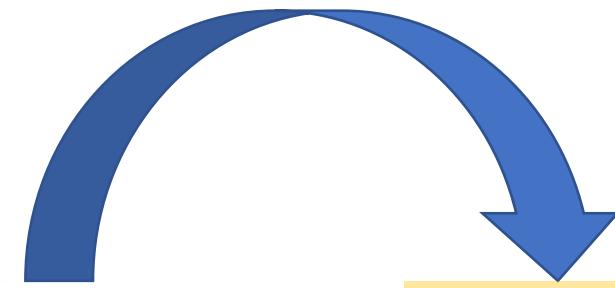
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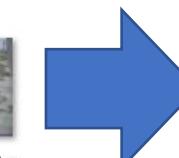
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20190507H12.jp

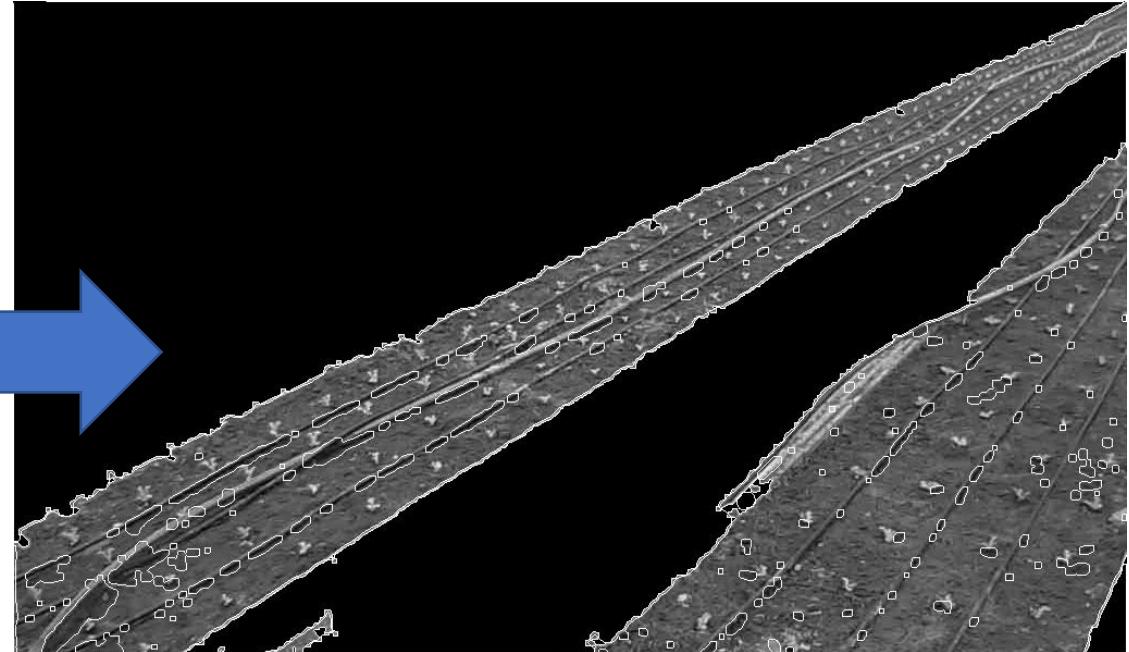


Day	Tim e	Re f Gr ow th	Actu al Gro wth	Set Te mp	Rea d Te mp	Ven til	Set Hu mid	Hu mid	Irr i	Fert il	Pes tici de
1	8.0 0	0	8	30	30	Off	70	66	5 min	46- 0-0	
	16. 00			30	33	on	70	68			



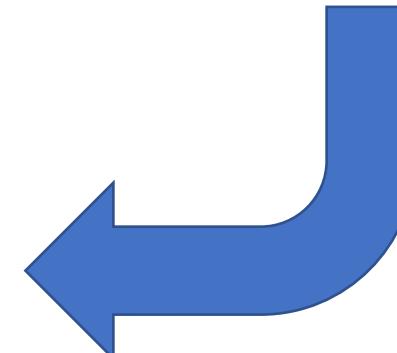
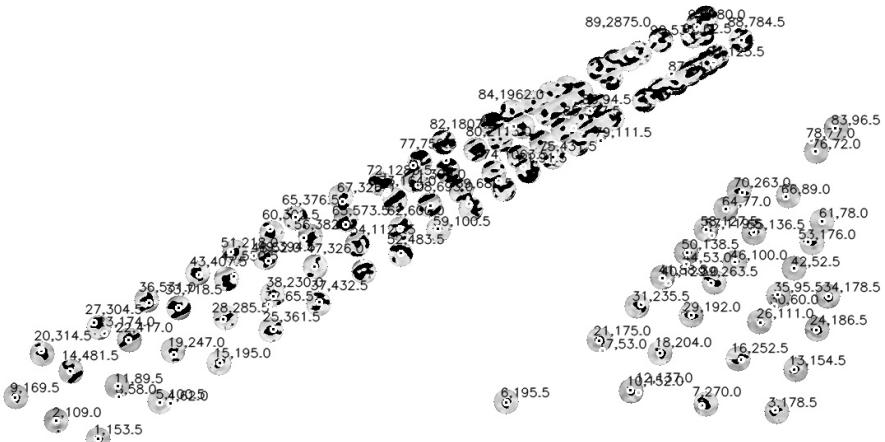
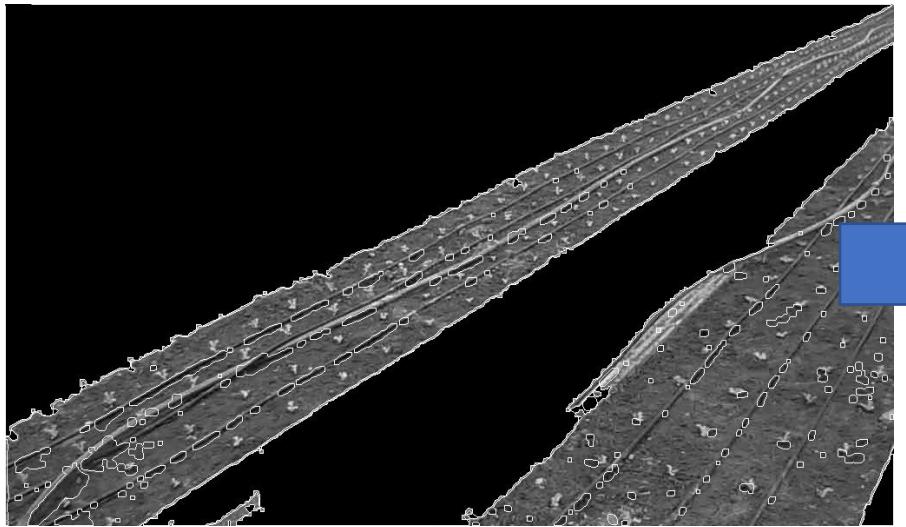
Day	Tim e	Re f Gr ow th	Actu al Gro wth	Set Te mp	Rea d Te mp	Ven til	Set Hu mid	Hu mid	Irr i	Fert il	Pes tici de
30	8.0 0	20 0	180	30	30	Off	70	66			
	9.0 0			30	33	on	70	68			

Image Processing



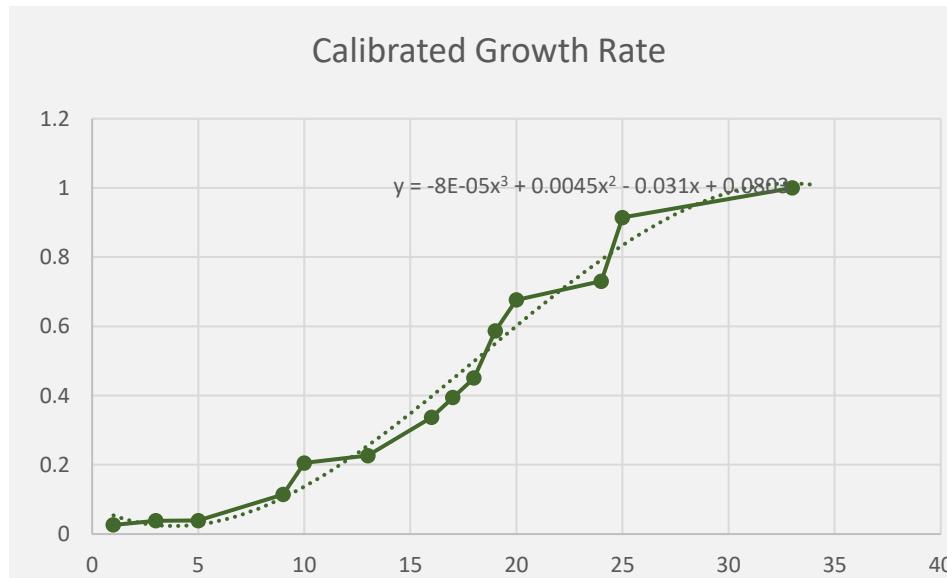
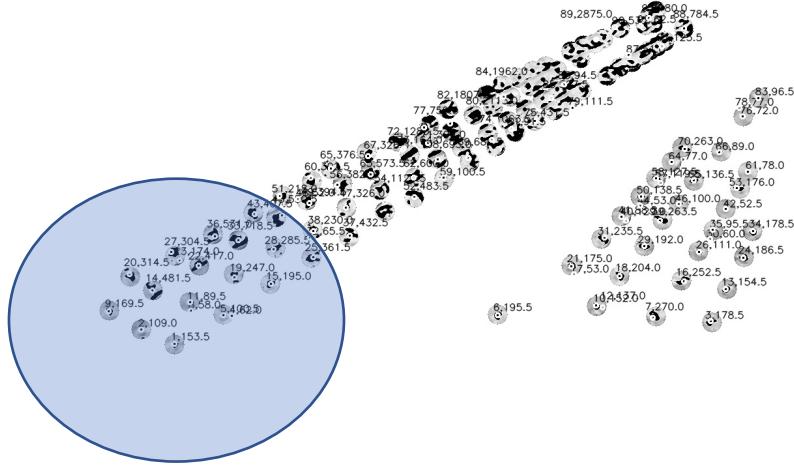
Area Selection

Image Processing



index	ContourArea	x	y
1	153.5	120.5625	593.5625
2	109	69.59091187	571.5908813
3	178.5	943.5	558.5
4	62	208.5	550.5
5	100.5	195.5	549
6	195.5	616.7098999	549.6542969
7	270	854	553
8	58	145.5	542
9	169.5	19.5	543.5
10	152	767.8043213	534.8043213
11	89.5	144	529.611084
12	137	777.5	537
13	154.5	966.5	509.5

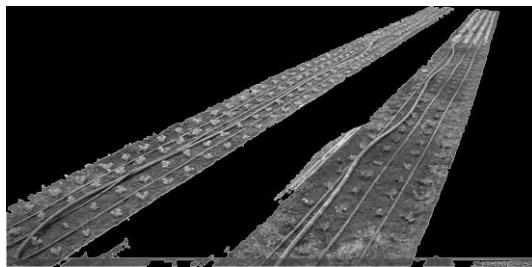
Image Processing



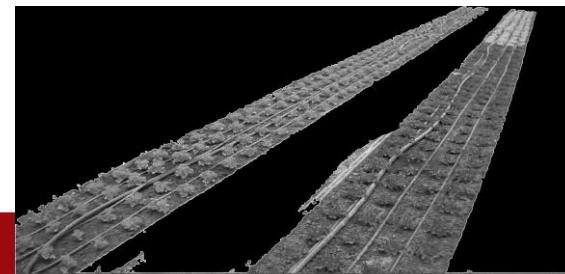
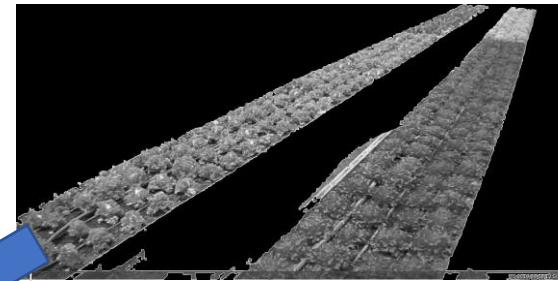
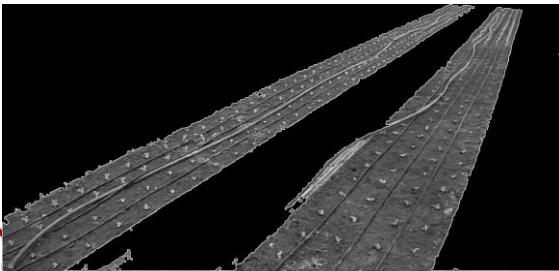
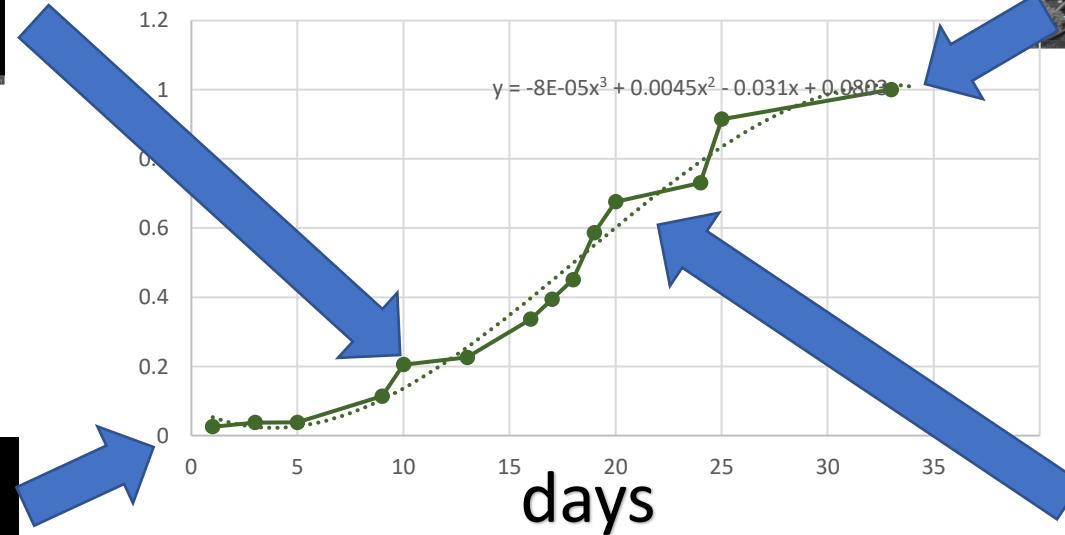
AI Deep Learning : Case Study

Growth state Detection (Image to Information)

Reference Point



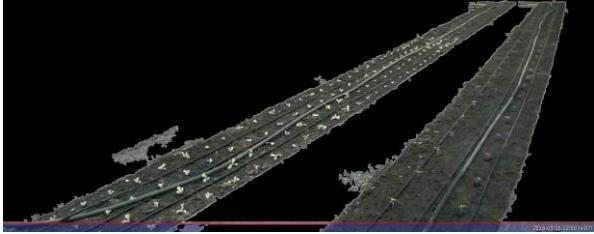
Calibrated Growth Rate



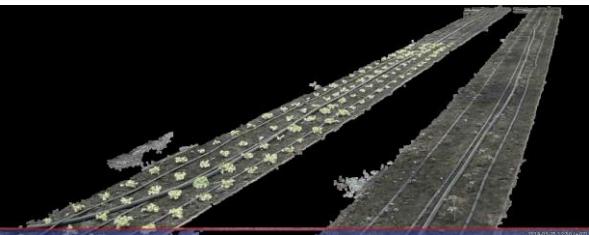
Model Training

Deep Learning -Transfer Learning

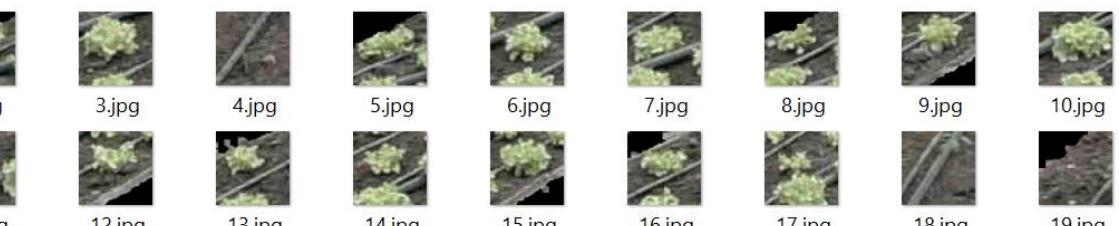
A



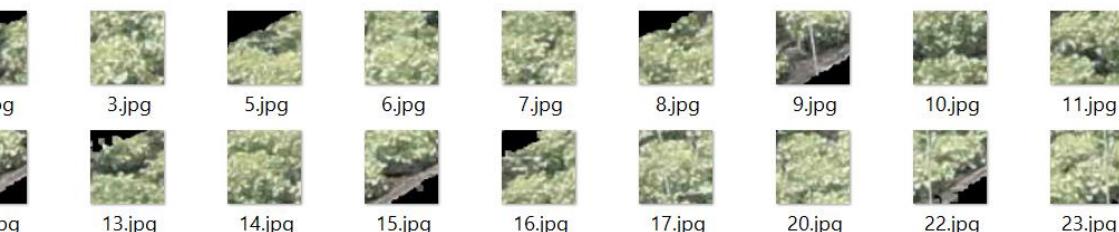
B



C

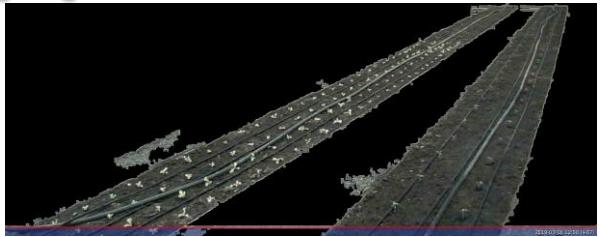


D

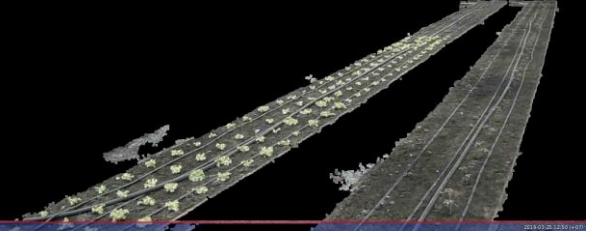


Model Validation

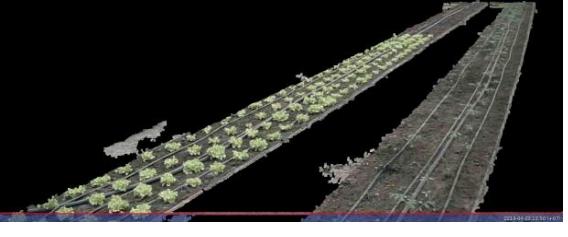
A



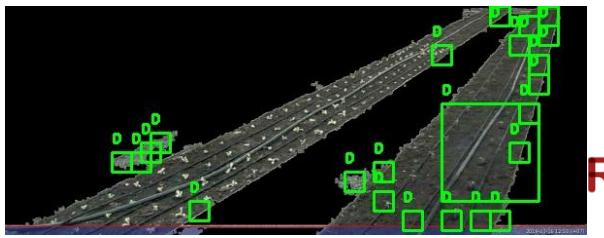
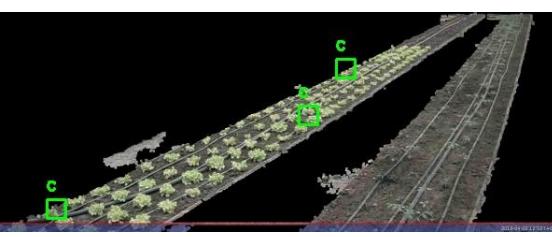
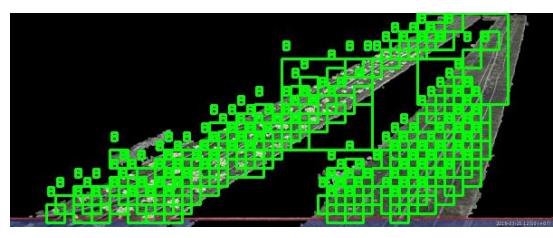
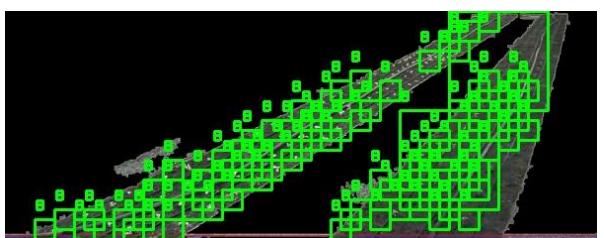
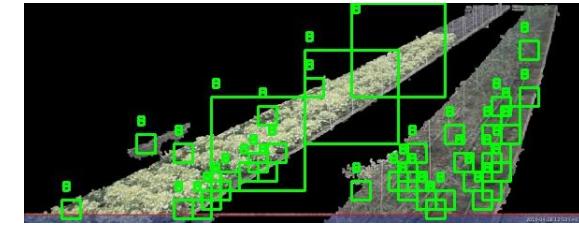
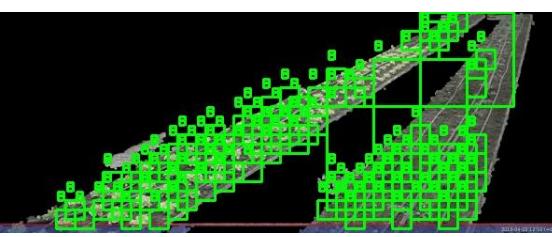
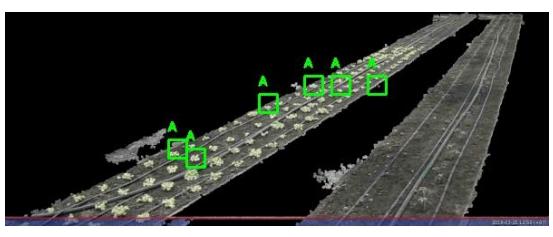
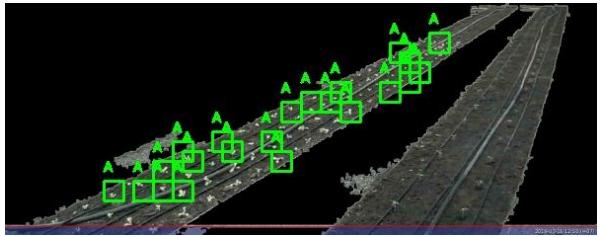
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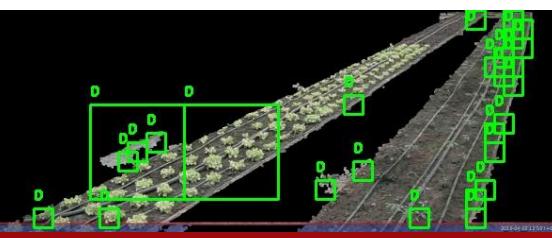
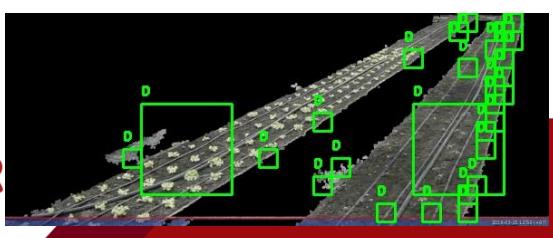
C



D

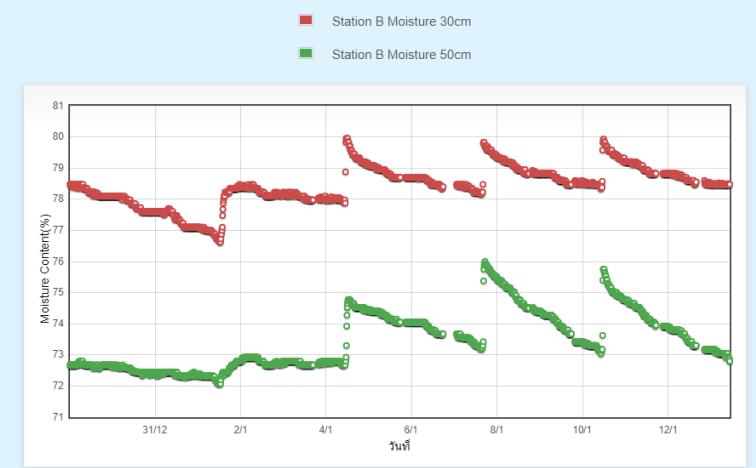


R



WIMARC for Horticulture

Farm Management
Yield



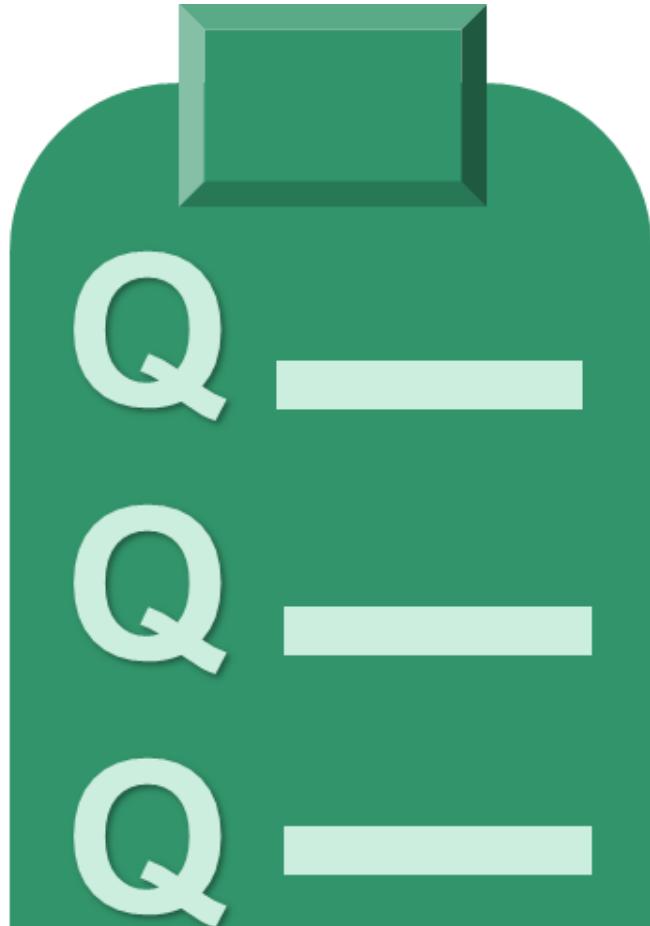
Optimize Irrigation
-surround plant area



Pest Pesticide

Fertilization
-growth rate

CONTACT DETAILS



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opastrith

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ค้นหาบน Facebook:

จัดการกลุ่ม

IoT WiMarC Farm กลุ่มสาธารณะ

หน้าแรก

ภาพรวม

เครื่องมือของผู้ดูแล

- ตัวช่วยผู้ดูแล 0 การดำเนินการ 0 เก加快发展
- คำขอเครื่องหมาย 0 คำขอใหม่ที่รันนี้
- โพสต์ที่รอค่าเป็นการ 0 โพสต์ใหม่ที่รันนี้
- โพสต์ที่กำหนดเวลาไว้

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IoT WiMarC Farm กลุ่มสาธารณะ · สมาชิก 2.1 พัน คน

ได้เข้าร่วม + เมื่อ