Mikawa Genki Monogatari Co.,Ltd.

Technology Type	Drone
Target Crop	Rice　Vegetables

MGM.Japan Japan Drone Business Center

株式会社 みかわ元気ものがたり

- Business: Diffusion/sales of agricultural drone
- Website : http://s-mgm.jp

PRO. LEVEL 3 16002785

Technology	Growth diagnosis by remote sensing, spraying of fertilizers & pesticides using drone most effectively
Outline	• Can visualize the rice growth condition which is photographed by a near-infrared camera attached to the drone (utilize NDVI) • Using the information of growth condition, the drone can be used to spray the appropriate quantity of fertilizers & pesticides aiming the best benefit
Benefit	• Increase in quantity & quality of harvest • Decrease in the use amount of fertilizers & pesticides cost cutting • Save labor (to spray fertilizers & pesticides) aged and female friendly • Beneficial for environmental management

Can contribute to the increase of productivity and decrease of production cost of Local farmers 【SDGs】

※Utilize Sensing drone (DJI P4 Multispectral)

※Utilize Spraying drone (Tobisuke-mini 5KL Tank)

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Idea/Plan of demonstration

- Set a demonstration zone and a control zone and verify the difference of growth by using the technology
- Crop: Rice Vegetables /Tomato Strawberry
- Starting period: 2022, April~June

Idea/Plan of business development

【2022】
- Conduct demonstration & pre-research

【2023】
- If the demonstration succeeded, start to conduct drone business with partners (provide support to partners who consider to open vocational training center/drone school, or to companies who want to start drone business in agriculture) hoping to join local firm

Requests	Concrete way to success
Demonstration Field【Where & How many】	• Number: 1 field each for demonstration and control zone • Size: Each field bigger than 1ha (6.25 rai) • Infrastructure: Has irrigation facilities • Other: Measures against weeds/pests are taken
Demonstration Partner【With whom & How to】	• Farmer who are willing to implement smart agricultural technology • Research institute of smart agriculture • Local companies who are considering to sell smart agricultural technology • University growing up human resources
Business Development【How to & Future Goal】	• Use of subsidies by local government • Introduction of suitable local partners for business development • Governmental support for promotion • Jointly open and operate a vocational training center/drone school with local organization (introduction of existing vocational training center operated by companies, governmental organization, universities that might implement courses regarding to drone)

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Remote Sensing　Growth Diagnosis
Sensing Drone　NDVI Analysis※

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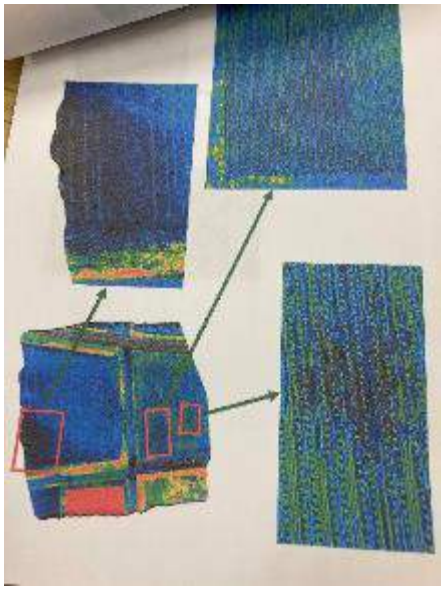
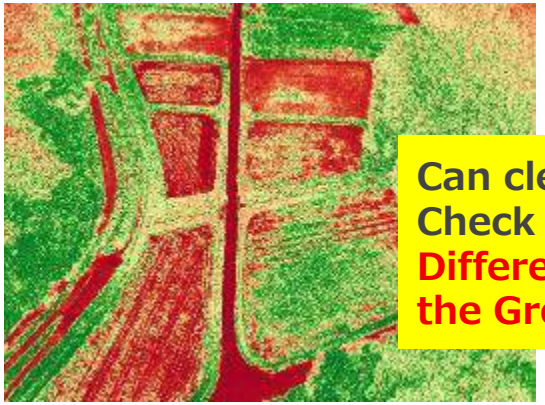
Outline

※**NDVI**　Normalized Difference Vegetation Index
Using **Near-Infrared Camera attached Drone**
Analyzing from the Difference of Color
Green Blue zone: Good growth
Red or Yellow zone: No good growth
Adjusting the Quantity of Fertilizers or Pesticides,　After that　All the Area of Field
We can get **best performance!!**

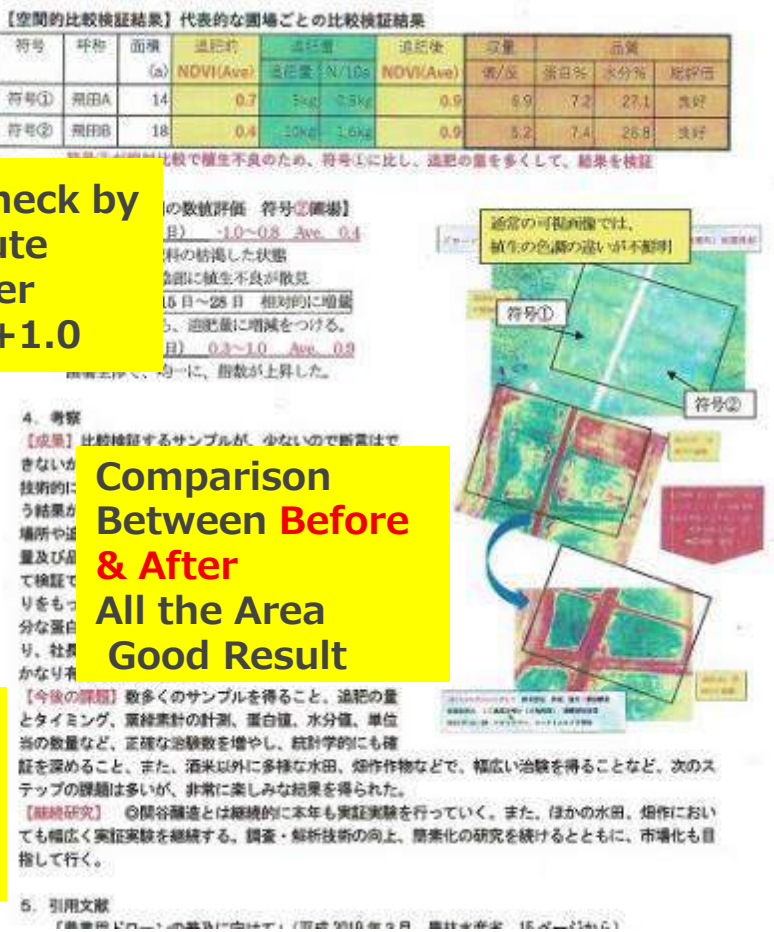
Can Check by Absolute Number -1.0~+1.0



☜Chart1　Sensing　Cabbage Field
☜Chart2　Sensing Rice Field
☜chart3 Sensing Rice Field



Can clearly Check the Difference of the Growth



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Spraying Drone Automatic Flight Control
Decrease Man-Power More Efficiency

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Outline

Tobisuke MINI by **Mazex** Manufacturing
One of the newest Spraying Drone
Low Fuel Consumption and Long Flight Possible
The Spraying Area is Doubled from
The Conventional one.
Less Downdraft Safety
Automatic Assist & Go Straight –ahead Assist
Automatic Return Function
Gross weight including battery 8.6kg
Maximum Loading Weight 5.okg
Propeller Size 24 inches

One Flight
One Battery
5 KL Loading
About 35a
(0.86acres)

Automated
Flight Control
Every 4
meters Wide

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Effect of Technology

- Improvement of productivity
  Approximately one-seventh reduction in work time when not using a drone
- Prevention of pollution of the human body and surrounding environment due to excessive supply of pesticides
- Optimal supply of pesticides and fertilizers, reduction of waste, optimal yield, and improvement of profits
- Relieving the agricultural workload of the elderly people and females
- Elimination of food shortages Elimination of poverty in all world SDGs

Assumed Business Scheme

- Establishment of a joint company with us: for example Local IT company that runs a drone business such as aerial photography, or is interested in drone business
- Provision of technology and human resources from our company
- Utilization of JICA's business scheme

Contact Address

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Requests

- Disclosure of actual conditions, laws and regulations, future prospects of drone business in Thailand
- Digging up local companies, farms, or farmers those who are interested in our projects

Can contribute to the increase of productivity and decrease of production cost of Local farmers 【SDGs】

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