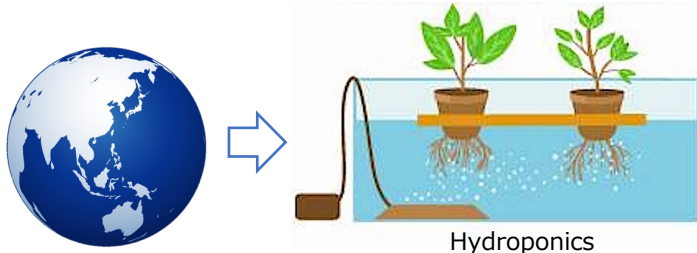


Our water-saving mist cultivation system grows lettuce with 70% less water



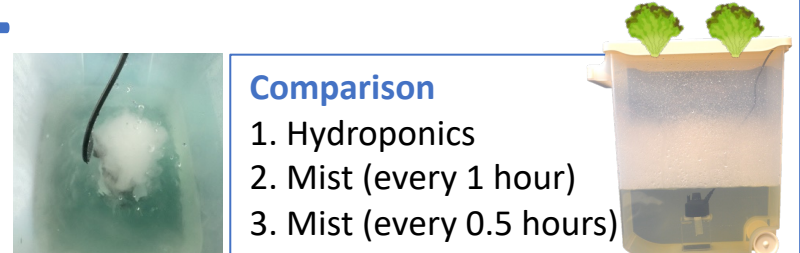
Shion Akaishi and Koya Shiratori FLORA HUNTERS
Aomori Prefectural Nakui Agricultural High School JAPAN

1 Introduction



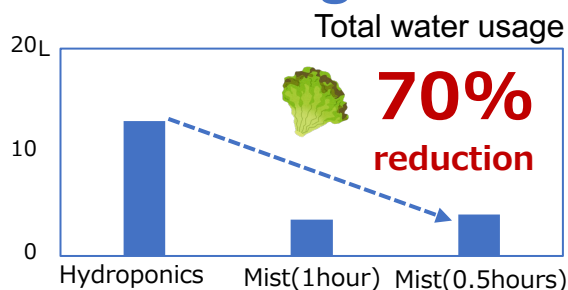
70% of the fwater we are using is for agriculture. Hydroponics can be grown with less water, but more water conservation is needed in the future.

2 Cultivation system



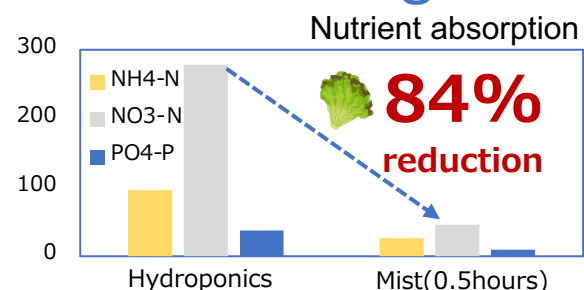
The water-saving mist cultivation system features an ultrasonic mist generator that sprays nutrient solution intermittently.

3 Water saving



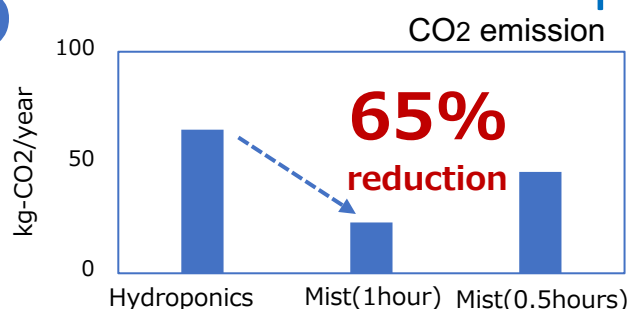
Lettuce grew with 70% less water than hydroponics. This is because mist can be generated with a small amount of water, and no water loss via evaporation in our system.

4 Fertilizer saving



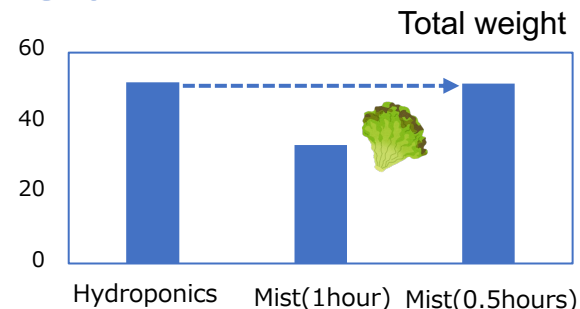
Fertilizer can be saved. This is because the nutrient solution is misted occasionally. In case of Mist(0.5 hours), the reduction was as much as 84%.

5 Low environmental impact



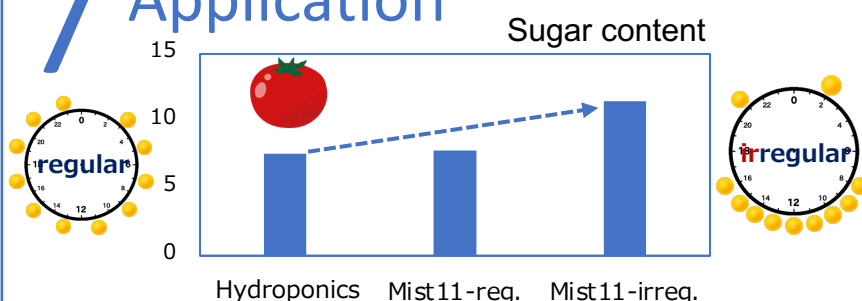
The operation of the mist generator is not continuous. Only 24 times or 48 times a day. This significantly contributes to reduce CO2 emissions by approximately 65%.

6 Yield



48 times for lettuce and 24 times for green beans produced yields comparable to hydroponics. The appropriate watering frequency depends on the crop.

7 Application



Tomatoes have higher sugar content when spraying more often during the day and less during the night. This is our proprietary technology.

8 Conclusions



This system can contribute to efficient water use and food security with water conservation, fertilizer reduction, and low environmental impact.

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