Timed Flooding Yields Significant Gains in Rice Farming
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President, RGA Rice
Owner, Kanpeki Rice
How precision technology and real-time data drive true sustainability in rice production
Introducing Kanpeki Rice

What Makes Kanpeki Rice Different?
Unique cultural practices and precision technology.
Kanpeki’s Unique Cultural Practices

Kanpeki Uses Dry Seeding aka Alternate Wetting and Drying

• Traditional rice productions involves flooding the field just before applying seed aerially. Rice remains in a flooded environment until just before harvest.
  – Used in 95% of California Rice

• Dry seeding involves aerially applying seed to a field that has not been pre-germinated with water. Then, water is managed using Alternate Wetting and Drying (AWD), also called Dry Seeded rice farming.
  – AWD sends various flushes of water throughout a rice field in a timed manner - “timed flooding” - rather than having persistent water on the crop.
Crop Benefits of Dry Farming & Timed Flooding

• Improved physiology of the rice when the plant isn’t always in moisture. The semi-aquatic environment allows the root zone to get bigger and healthier.
• Lower risk of pathogens like fungi and stem rot.
• Huge increases in yield to water efficiencies.
• The semi-aquatic environment restricts the growth of weeds during the drying times.
• Only need to apply a soil-activated herbicide once during the season that never comes in contact with the crop, which eliminates the risk of herbicide residue.
Global Environmental Benefits of Dry Farming

- 15-25% water savings
- Reduced herbicide use
- Integrated environmental management
Precision Ag Makes Dry-Farming Possible

- Real-time soil monitoring allows for informed irrigation decisions
- Can pinpoint when to bring floods in or flushes across for saturation
- Integrate the data with other precision technologies & geo-farming practices with generational knowledge
Introducing WaterBit

- Precision irrigation solution
- Founded in 2015
- 40 employees
- Offices: San Jose, Salinas, Fresno
- Moving beyond simple valve automation to precision irrigation
- Products designed & assembled in USA
- $11.4M Series A in June 2018
Where is WaterBit Currently Deployed?

- CA
- KS
- IA
- OH

Deployed over 490,000 acres across the US

Installed and working in: Grapes | Tree Nuts | Rice | Leafy Greens | Cotton | Corn
Growers face a host of issues. WaterBit provides the solution.

- Crop Quality and Yield
- Water Management
  - Irrigation planning & execution
  - Leak detection
  - Verification of plan
- Labor Cost Management
- Automation

SOLAR POWER
Operates under canopy

COMPACT
Small form factor

SENSORS
Monitor field conditions

ZERO MAINTENANCE
No need to change batteries

LONG-RANGE
Long-range radio

ACTUATORS
Open/close valves and relays

www.waterbit.com  |  sales@waterbit.com  |  408.618.6900
### Automated Irrigation Benefits

Achieve optimum quality and yield with less labor and water

#### AGRONOMIC
- Prevent over and under-watering
- Reduce crop disease
- Confirm water delivery as planned
- Automate irrigation tasks

#### FINANCIAL
- Improve crop yield and quality
- Realize water savings via optimal water delivery
- Save labor costs
- Reduce fuel use

#### ENVIRONMENTAL
- Reduce soil erosion and nitrate leaching
- Save water
- Comply with reporting regulations
- Reduce emissions and carbon footprint

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WaterBit at Kanpeki Rice

Problems
• Over and under-watering comprises yield and quality, especially in dry-farming
• Invasive weed and pest growth
• Methane gas emissions due to standing water in fields

Solutions
• Low-power, wireless data collection for distributed sensors
• Unobtrusive and stays out of the way of field/harvest operations
• Ability to operate in standing water 24/7
• 30% increase yield to water efficiency gain

Products Used
• WaterBit Carbon™, WaterBit Connect™, WaterBit Dashboard™
• Aquacheck subsurface soil moisture probes

Current WaterBit Deployment at Kanpeki Rice
“We can learn more in the next two seasons of applying WaterBit technology around plants response to soil and moisture than we’ve learned in the past 3,000 years since rice has been cultivated.” – Greg Van Dyke
Questions?
Thank You
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For more information, visit www.waterbit.com.