Managing Global Livestock Health

Chief of Legal and Global Marketing
Steve Kim
LiveCare Services

LiveCare Service Model

Orally-injected Sensor (Bio-Capsule)
Patch-type Device

Calf & Sheep capsule launched in 2018; The World's First and Only Devices for Swine and Horse were developed in 2019

Bio-capsule for Cow
Settle in ruminants
Battery Life maximum 5 yrs
Animal Medical Device
Biometric Data Collection

WEB/APP Services

Diseases Mgmt.
Estrus Detection
Calving Prediction
Farm Mgmt.

Biometric Data Provision per animal
Event Alerts via WEB/APP
Customer Supports
LiveCare Services

Bio-Capsules
for Ruminants

Administered within two weeks of birth;
For early disease detection and on-farm management

Administered a year after birth,
For Diseases/Estrus/Calving Detections and Movement Tracking in real-time

*Animal Medical Device: Sensor-based Capsule with Ingestible RFID Tag and Livestock Diseases Management System*
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Technological Innovation

<Cumulative number of heads>

1,500
2015

Bio-Capsule for Cow in Wi-Fi ver.

Core Temperature

Activity

10,000
2017

Bio-Capsule for Cow in LoRa ver.

Core Temperature

Activity

16,000
2018

Bio-Capsule for Calf

World's First

Core Temperature

Activity

Ruminal Activity

50,000
2019

Bio-Capsule for Sheep

World's First

Core Temperature

GPS

Activity

Ruminal Activity

2020

Device for Horse

World’s First

Core Temperature

GPS

Activity

Ruminal Activity

1,000,000
<Global Number of Goals>

Bio-Capsule for Cow in NB-IoT/Cat-M1

World's First

Bio-Capsule for Calf in NB-IoT/Cat-M1

World’s First

Devices for Pig; Chicken

Develop in progress
Breeding Management

Estrus Detection
- Jun 12: Normal delivery
- Jul 16: Estrus detected after 34 days
- Jul 17: Estrus stopped (morning)
- Aug 7: Estrus detected again (21 days)
∴ Estrus monitoring became easier/simpler

Calving Prediction
- June 11: Day before delivery, temp decrease
- June 12: Gave birth at 4 pm
∴ The cow showed continuous light temp increase for 2 months but temp decreased 1 day before delivery
A.I. based Early Disease Detection

Sheep
- Average Sheep mortality 14~16%
- Mainly caused brucellosis, Respiratory disorder, Peste des Petits Ruminants
- Disease-targeted Animal Healthcare

Early Detection in Sheep pneumonia
- Abnormal Temp.
- Treatment
- Cured 100%

Cow
- Detect more than 16 major diseases
- Monitoring of Vaccine Side Effects
- Breeding management in Estrus and Calving

Early Detection in Ketosis
- 1st Detection
- 2nd Detection
- Diagnosed Ketosis
- Cured 100%
- Treatment
- Ketosis Treatment

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Case Study: Bovine Coronavirus
I hesitated to vaccinate as the cow was pregnant.

After vaccination, temperature went up and I kept taking care of it.

In three days, the temperature came back to normal.

Fortunately, healthy female calf came out.

31 months-old Hanwoo Farm

Rapid high temperature for 3 times

Quick fever reducer Prescription

CURED 100%
Case Study: Blood Poisoning

64 months-old Dairy Farm

Thanks to LiveCare, I saved almost dying cow.

Usually, it takes three to six days to recover.

However, it recovered in one day.
Case Study: Mastitis

67 months-old Dairy Farm

I could detect mastitis very early.

It usually takes one week for medical treatment...

In only a day, she get back to normal with early treatment.
LiveCare Services

**LiveCare A.I. Technics**

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bovine Respiratory Disease (BRD)</td>
</tr>
<tr>
<td>2</td>
<td>Bovine Coronavirus</td>
</tr>
<tr>
<td>3</td>
<td>Pneumonia</td>
</tr>
<tr>
<td>4</td>
<td>Mastitis</td>
</tr>
<tr>
<td>5</td>
<td>Ketosis</td>
</tr>
<tr>
<td>6</td>
<td>Blood poisoning</td>
</tr>
<tr>
<td>7</td>
<td>Hyperthyroidism</td>
</tr>
<tr>
<td>8</td>
<td>Bovine tuberculosis</td>
</tr>
<tr>
<td>9</td>
<td>Foot Infection</td>
</tr>
<tr>
<td>10</td>
<td>Acute diabetes</td>
</tr>
<tr>
<td>11</td>
<td>Enzootic bovine leukemia</td>
</tr>
<tr>
<td>12</td>
<td>Calcium, phosphorus, kidney problem</td>
</tr>
<tr>
<td>13</td>
<td>Reproductive organs disease</td>
</tr>
<tr>
<td>14</td>
<td>Disease after calving</td>
</tr>
<tr>
<td>15</td>
<td>Digestive organs disability</td>
</tr>
<tr>
<td>16</td>
<td>Hepatic lipidosis</td>
</tr>
<tr>
<td></td>
<td>And more…</td>
</tr>
</tbody>
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Livestock w/ bio-capsules

Deep Learning based Biometric Analysis

**500M+**

World’s largest Livestock Biometric Data

98% Detection Accuracy

Estrus Detection

Calving Mgmt.

Estrus Detection Accuracy 98%
Global Livestock Control Tower

LiveCare Services

North America Branch

Europe & Middle East Branch

South America Branch

Asia-Pacific Branch

Asia Branch
Corporate Information
Corporate Information

Global Agritech Company
uLikeKorea

Company Name
uLikeKorea co. Inc.

CEO
Heejin Kim (Ph.D.)

Main Business
IoT/A.I based Agritech Solution (Livestock)

Since

Members
60

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## Corporate Information

### LiveCare Business Organization

<table>
<thead>
<tr>
<th>South Korea HQ / R&amp;D</th>
</tr>
</thead>
</table>

* Regional Agents: LiveM (Gyeonggi), LiveTech(Yeongnam), Hi-Farm Care(Chungcheong), Markgen(Honam)

<table>
<thead>
<tr>
<th>USA office</th>
<th>Japan office</th>
<th>EU office</th>
<th>Singapore office</th>
<th>Brazil office</th>
</tr>
</thead>
</table>
| Livestock Technology Services, Inc.  
San Francisco, CA, USA | 株式会社The Better  
Tokyo, Japan | LiveCare Denmark, Ltd.  
Copenhagen, Denmark | LiveCare Holdings PTE. Ltd.  
Singapore | LiveCare Brasil Ltda.  
São Paulo, Brazil |