There was a large difference in the state of accumulated litter in space between the hedges, which was where fertilizer was applied.
Space between the hedges after mechanization

Depth of accumulated litter: 16cm
N$_2$O emission potential in the litter, surface soil, and soil below 10 cm

Incubation experiment
(According to the method of Tokuda and Hayatsu)
Fig. $N_2O$ emission potential in the litter, surface soil, and soil below 10 cm
Table. $\text{N}_2\text{O}$ emission potential per surface area

<table>
<thead>
<tr>
<th>Incubation time (14 day)</th>
<th>Per weight $\mu\text{g N g}^{-1}$</th>
<th>Per surface area $\text{g N m}^{-2}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litter</td>
<td>671</td>
<td>12.9</td>
</tr>
<tr>
<td>surface soil</td>
<td>50</td>
<td>0.3</td>
</tr>
<tr>
<td>Soil</td>
<td>5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Litter: 16 cm in depth

Surface soil: 1 cm in depth

Soil: 16 cm in depth
Measuring the N$_2$O emissions in the space between hedges in a tea field
Fig. Cumulative $\text{N}_2\text{O}$ emissions in different soil environments

$p < 0.05$ according to REGWQ method
Incorporation of litter with soil by deep plowing can reduce N$_2$O emission.
Fig. Cumulative $\mathrm{N}_2\mathrm{O}$ emission in deep plowing
These techniques are now being used in 50-70% of the areas in Shiga Prefecture in Japan.

<table>
<thead>
<tr>
<th>Developed techniques</th>
<th></th>
<th>Production cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep plowing + Fertilizer</td>
<td>○</td>
<td>◎</td>
</tr>
<tr>
<td>application to under canopy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

○ : equal to or greater than conventional farmers' cultivation
◎ : greater than conventional farmers' cultivation

Farmers’ efforts to preserve water quality in Lake Biwa led to techniques to reduce N₂O emissions in tea fields.

These techniques are now being used in 50-70% of the areas in Shiga Prefecture in Japan.
Thank you for your attention!