MEAT DUCK PRODUCTION

Fig. Annual changes of meat duck slaughtered (2007-2016).

Fig. The proportion of different species of duck were slaughtered.

Before AI

- 2-way crossbreeding (natural mating)

Disadvantage
- Low fertility: 57%
- Higher labor: Human assisted
- Hard working: Stand in water
- Plumage color: Low utilization

Fig. The proportion of different species of duck were slaughtered.
After AI technique was used
- Cage feeding system were used in duck breeding
- To establish the accurate pedigree
- Progeny test
- To establish breeding system for selection
- Increase mating ratio of female
- Increase the utility of drake
- Increase fertility (mule duck production) (57% → 81%)

**FEEDING ENVIRONMENT OF KAIYA DUCKS**

![Feeding environment of Kaiya duck farm.](image)

**Model of 3-way Cross Mule Duck Production**

- GP farmer (AI for selection and breeding)
  - Pekin duck ♂
  - White Tsaiya duck ♂

- PS farmer (AI for producing)
  - Musovy ♂
  - Kaiya duck ♀

- Meat duck farmer

**THE MUSCOVY SEMEN CHARACTERISTICS IN KAIYA DUCK FARM**

Table. The comparison of Muscovy semen characteristics before or after 52 weeks age

<table>
<thead>
<tr>
<th>Week age</th>
<th>Average wks age</th>
<th>Semen volume ml</th>
<th>Sperm concentration x10⁹/ml</th>
<th>Total sperms/ejaculate x10⁹ sperms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 52 wks</td>
<td>36.2 ± 0.5</td>
<td>1.2 ± 0.5ᵃ</td>
<td>2.1 ± 1.2</td>
<td>2.5 ± 1.8</td>
</tr>
<tr>
<td>After 52 wks</td>
<td>62.2 ± 10.8</td>
<td>1.7 ± 0.6ᵇ</td>
<td>1.8 ± 0.9</td>
<td>2.6 ± 1.3</td>
</tr>
<tr>
<td>Total</td>
<td>43.4 ± 13.6</td>
<td>1.4 ± 0.6</td>
<td>2.0 ± 1.1</td>
<td>2.5 ± 1.7</td>
</tr>
</tbody>
</table>

ab: Means in the same row without a common superscript differ significantly (p < 0.01).

Wei et al., 2014.

Table. The comparison of Muscovy semen characteristics in different Kaiya duck farm

<table>
<thead>
<tr>
<th>Farm</th>
<th>Average wks age</th>
<th>Semen volume ml</th>
<th>Sperm concentration x10⁹/ml</th>
<th>Total sperms/ejaculate x10⁹ sperms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59.4</td>
<td>1.7 ± 0.7ᵃ</td>
<td>2.1 ± 1.5ᵇ</td>
<td>3.3 ± 2.5ᵃ</td>
</tr>
<tr>
<td>2</td>
<td>50.6</td>
<td>1.8 ± 0.4ᵇ</td>
<td>1.4 ± 0.8ᵇ</td>
<td>2.5 ± 1.3ᵇ</td>
</tr>
<tr>
<td>3</td>
<td>61.6</td>
<td>1.7 ± 0.2ᵃᵇ</td>
<td>1.2 ± 0.2ᵇ</td>
<td>2.1 ± 0.5ᵇ</td>
</tr>
<tr>
<td>4</td>
<td>35.3</td>
<td>1.2 ± 0.5ᵇ</td>
<td>1.9 ± 1.0ᵇ</td>
<td>2.2 ± 1.4ᵇ</td>
</tr>
<tr>
<td>5</td>
<td>60.0</td>
<td>1.8 ± 0.6ᵇ</td>
<td>2.7 ± 0.7ᵇ</td>
<td>3.4 ± 1.5ᵇ</td>
</tr>
</tbody>
</table>

ab: Means in the same row without a common superscript differ significantly (p < 0.05).

Wei et al., 2014.
Artificial insemination is widely used in mule duck production.
Every Kaiya duck was injected 0.05 ml of Muscovy semen.
The Kaiya duck farmer have to raise 40-50 Muscovy drake for semen collecting every 1000 Kaiya duck for artificial insemination.

Fig. The application of Al in Kaiya duck farm.

Thanks for your attention.