

VTR QINLEWANG (Mannanase) broiler trial protocol in Korea

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1. Project :

-To check the influence of Mannanase products on early stage broiler productivity--

To see the difference of competing products (Hemicell vs QINLEWANG)

2. Method and material:

1) Test period : 2013.9. 5 ~ 2013.10.10 (35days)

2) Test place : Sang-ju, Kyung-sang book-do, Korea

3) Test animal : A.A total 3house (about 17,000 birds per house)

4) Test feed : general commercial feed

5) Test design

| Control | T1 | T2 | 소요량 |
|-------------------------|----------------------------|-------------------------|------------------|
| Commercial feed + | Commercial feed + | Commercial feed + | (Hemicell) 160kg |
| Competitor's | Competitor's (Hemicell) | Qinlewang 0.05% | Qinlewang 150kg |

3. Result:

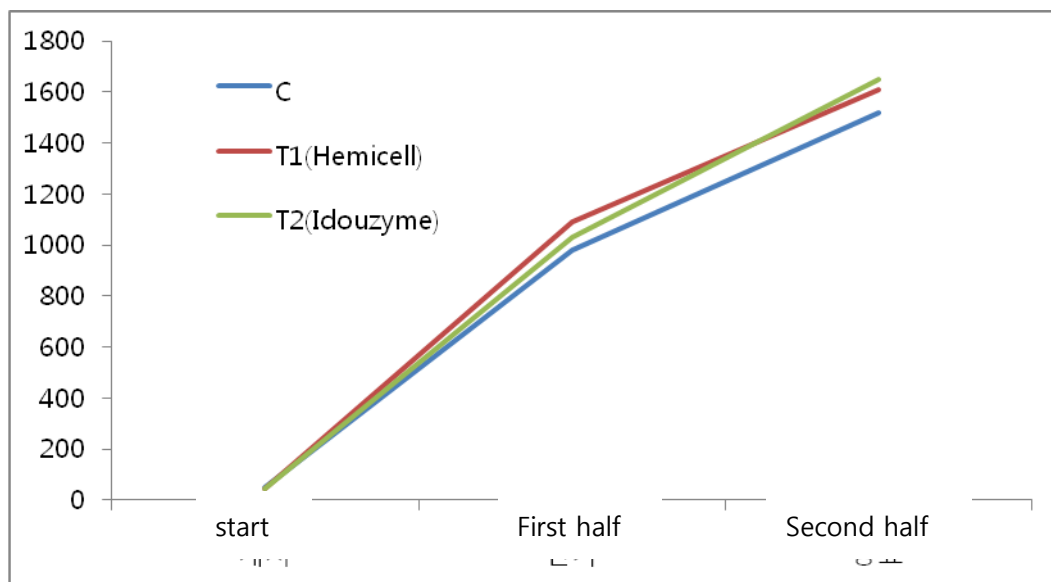
1) Weight

| Weight | repeat | C | T1 | T2 |
|---|---------------|-----------|------------|-----------|
| Initial weight (9/5) (unit :g) | 1 | 49.51 | 45.83 | 46.79 |
| | 2 | 50.29 | 44.47 | 45.63 |
| | 3 | 50.68 | 45.63 | 46.99 |
| | 4 | 49.90 | 44.85 | 44.55 |
| | 5 | 49.32 | 45.05 | 42.80 |
| | 6 | 50.09 | 44.47 | 44.47 |
| | Average | 49.96 | 45.05 | 45.20 |
| | SD | 0.50 | 0.57 | 1.58 |
| | | 49.96±0.5 | 45.05±0.57 | 45.2±1.58 |

| Weight | Repeat | C | T1 | T2 |
|---|---------------|-----------|-----------|-----------|
| Middle weight (9/27) (Unit:kg) | 1 | 1.006 | 1.114 | 1.052 |
| | 2 | 0.96 | 1.112 | 1.04 |
| | 3 | 0.984 | 1.07 | 1.112 |
| | 4 | 1 | 1.084 | 0.988 |
| | 5 | 0.978 | 1.11 | 0.99 |
| | 6 | 0.982 | 1.076 | 1.048 |
| | Average | 0.98 | 1.09 | 1.03 |
| | SD | 0.01 | 0.01 | 0.04 |
| | | 0.98±0.01 | 1.09±0.01 | 1.03±0.04 |

| | Repeat | C | T1 | T2 |
|--|---------------|----------|-----------|-----------|
| Weight before market (10/ 06) (unit:kg) | 1 | 1.600 | 1.674 | 1.642 |
| | 2 | 1.496 | 1.652 | 1.770 |
| | 3 | 1.474 | 1.508 | 1.692 |
| | 4 | 1.526 | 1.670 | 1.698 |
| | 5 | 1.594 | 1.648 | 1.658 |
| | 6 | 1.428 | 1.632 | 1.634 |
| | 7 | 1.492 | 1.606 | 1.648 |
| | 8 | 1.578 | 1.568 | 1.590 |
| | 9 | 1.574 | 1.624 | 1.684 |
| | 10 | 1.524 | 1.532 | 1.578 |

| | | | |
|---------|-----------|-----------|-----------|
| Average | 1.520 | 1.610 | 1.650 |
| SD | 0.05 | 0.05 | 0.05 |
| | 1.52±0.05 | 1.61±0.05 | 1.65±0.05 |



2) Total Feed Intake

| | Control | T1(Hemicell) | T2(Qinlewang) | Total (MT) |
|-------------------------------------|---------|--------------|---------------|------------|
| Start feed(kg) | 3.03 | 3.03 | 3.09 | 9.15 |
| 1st half feed(kg) | 9.82 | 9.98 | 10.26 | 30.06 |
| 2nd half feed(kg) | 27.69 | 28.76 | 29.39 | 85.84 |
| Total(kg) | 40.54 | 41.77 | 42.74 | 125.05 |

3) FCR

| | Control | T1(Hemicell) | T2(Qinlewang) |
|------------|---------|--------------|---------------|
| FCR | 1.622 | 1.570 | 1.567 |

4) Result

- Field trial showed that two enzyme product made significant difference ($p < 0.05$) in weight gain, feed intake and FCR.
- There was not much difference between Hemicell and Qinlewang but Qinlewang showed more improved FCR.