## Introduction

The on-farm testing of four chicken strains, Boschveld, C431, Sussex, and TRainbow, was conducted under on-farm management conditions in Zimbabwe. Day-old chickens were reared in three mother units for 28 days and distributed to households in three agroecological zones: Mat North, Bulawayo, and Mat South. Each household received 50 birds. The testing was run starting in 2021 and finalized in 2023. The challenge of the experiment was to collect data after chickens were distributed to the households. This report is prepared based on the data that was received from the partner in Zimbabwe and may show only part of the whole picture. A detailed analysis is required using the data available on ILRI's server.

## Growth performance during rearing period in mother units

*Table 1. Growth performance of Boschveld, C431, Sussex and TRainbow chicken under mother units in Zimbabwe*

| **Age** | **Breed** | **Average weight (g)** | **FCR (g/g)** | Mortality **(%)** |
|---|---|---|---|---|
| **Day0** | Boschveld | 34.3 | 0.260308 | 0 |
| Day7 | Boschveld | 88 | 0.960595 | 0.007143 |
| Day14 | Boschveld | 145 | 1.56625 | 0.025 |
| Day21 | Boschveld | 241 | 1.850089 | 0.026786 |
| Day28 | Boschveld | 309 | 2.173332 | 0.026786 |
| Day0 | C431 | 34 | 0.262137 | 0 |
| Day7 | C431 | 114 | 0.748241 | 0.017825 |
| Day14 | C431 | 187 | 1.203451 | 0.017825 |
| Day21 | C431 | 302 | 1.460319 | 0.017825 |
| Day28 | C431 | 449 | 1.63299 | 0.017825 |
| Day0 | Sussex | 37 | 0.240883 | 0 |
| Day7 | Sussex | 121 | 0.694865 | 0.003565 |
| Day14 | Sussex | 166 | 1.336293 | 0.003565 |
| Day21 | Sussex | 289 | 1.506865 | 0.005348 |
| Day28 | Sussex | 345 | 2.106141 | 0.008913 |
| Day0 | TRainbow | 35 | 0.254647 | 0 |
| Day7 | TRainbow | 107 | 0.810429 | 0.033868 |
| Day14 | TRainbow | 182 | 1.259369 | 0.035651 |
| Day21 | TRainbow | 304 | 1.477527 | 0.035651 |
| Day28 | TRainbow | 431 | 1.732634 | 0.035651 |

The average body weight of the test strains measured during the rearing period in mother units of Zimbabwe is shown in the Table 1 and Figure 1. All the chicken strains had comparable hatch weight at the start of the experiment. All the test strains weighed less than half kg at day 28. C431 weighed higher body weight at all stages followed by TRainbow and Sussex. The least performer was Boschveld.

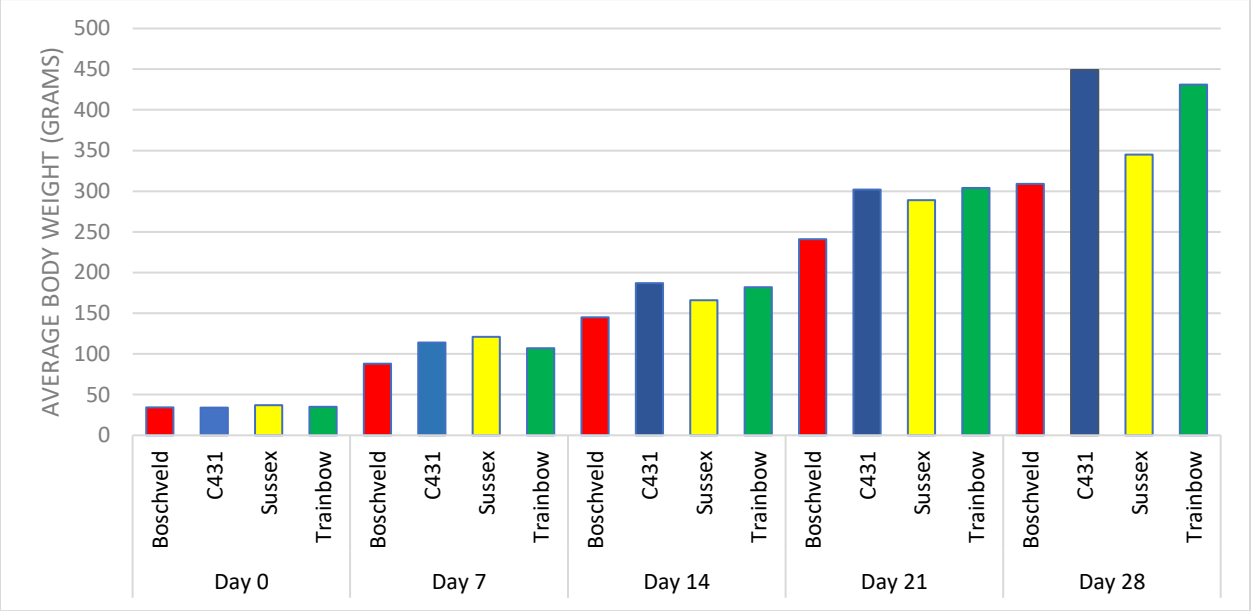


*Figure 1. Average body weight of chicken strains measured at different ages in mother units in Zimbabwe.*

The Feed conversion efficiency of the test strains is shown in the figure 2 below. FCR, the feed intake per a unit of body weight increase was compared among the strains. C431 has the lowest FCR followed by TRainbow. Boschveld had higher FCR suggesting that the breed's feed requirement for growth is higher.

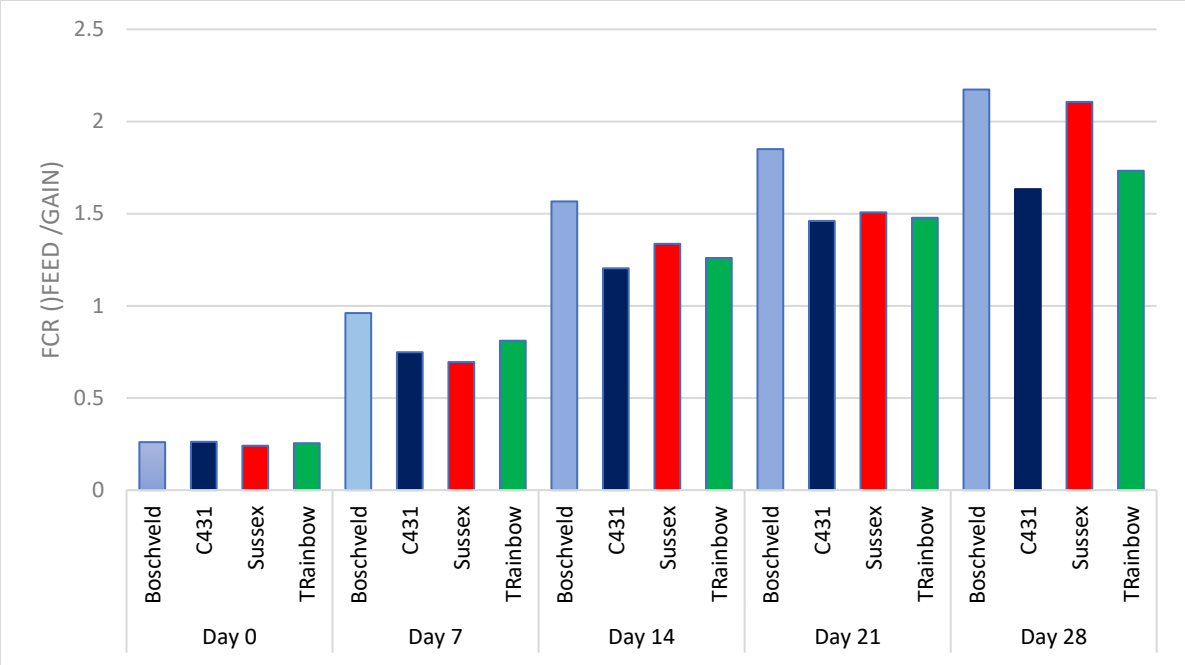


*Figure 2. Feed conversion ratio of different chicken strains in mother units in Zimbabwe*

## Performance under farmers management condition

The Average body weight, Feed conversion ratio and Mortality of test strains under on-farm conditions of Zimbabwe were evaluated (Table 2). Day 84 was considered as market weight for dual propose chicken strains in free range condition. T432 and TRainbow had higher body weight at day 84 followed by Sussex. The same pattern was observed for FCR. The lowest mortality was observed in C431.

*Table 2. Average body weight, Feed conversion ratio and Mortality of different chicken strains measured at day 84 under on-farm management conditions in Zimbabwe.*

| Parameters | Strain | Mean | SD |
|---|---|---|---|
| **Average Weight (Kg)** | Boschveld | 1.4 | 0.007 |
| | C431 | 2.35 | 0.108 |
| | Sussesx | 1.48 | 0.086 |
| | Trainbow | 2.06 | 0.051 |
| Feed conversion Ratio (feed per gain) | Boschveld | 2.17 | 0.011 |
| | C431 | 1.32 | 0.064 |
| | Sussesx | 2.09 | 0.126 |
| | Trainbow | 1.52 | 0.036 |

| | | | |
|---|---|---|---|
| Mortality (%) | Boschveld | 4 | 2.8 |
| | C431 | 3.2 | 1.8 |
| | Sussesx | 3.3 | 2.3 |
| | TRainbow | 4 | 2.4 |

This preliminary analysis showed that C431 and TRainbow are the two best performing strains during the rearing periods (0-28 days) and at 84 days.