Bukani Data Analysis

Wekesa

## Import data

library(tidyverse)

── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──  
✔ ggplot2 3.3.6 ✔ purrr 0.3.5   
✔ tibble 3.1.8 ✔ dplyr 1.0.10  
✔ tidyr 1.2.1 ✔ stringr 1.4.1   
✔ readr 2.1.3 ✔ forcats 0.5.2   
── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
✖ dplyr::filter() masks stats::filter()  
✖ dplyr::lag() masks stats::lag()

BUKANI <- readxl::read\_excel("BUKANI ANALYSED.xlsx")  
View(BUKANI)

## Data Wrangling

df <- bind\_cols(BUKANI |>   
 filter(SAMPLING == "DAY 0") |>   
 select(Initial\_weight = WEIGHT, POND),  
BUKANI |>   
 filter(SAMPLING == "DAY 21") |>   
 select(Final\_weight= WEIGHT)) |>   
 mutate(Weight\_Gain = Final\_weight - Initial\_weight,  
 Daily\_weight\_gain = Weight\_Gain/21,  
 Feed = case\_when(POND == "POND 16" ~ 13881,  
 POND == "POND 23" ~ 13329,  
 POND == "POND 20" ~ 16536,  
 POND == "POND 22" ~ 12088,  
 POND == "POND 35" ~ 13059,  
 POND == "POND 37" ~ 11298,  
 POND == "POND 44" ~ 11793,  
 POND == "POND 51" ~ 10386,  
 POND == "POND 52" ~ 13901))

## Growth parameters

df |> group\_by(POND) |>   
 summarise(Feed = mean(Feed)/1000,  
 Initial\_weight = mean(Initial\_weight),  
 Final\_weight = mean(Final\_weight),  
 Body\_Gain = Final\_weight-Initial\_weight,  
 Percent\_Weight\_gain = ((Final\_weight - Initial\_weight)/Initial\_weight)\*100,  
 Daily\_weight\_gain = (Final\_weight - Initial\_weight)/21,  
 Specific\_growth\_rate = ((log(Final\_weight) - log(Initial\_weight))/21)\*100,  
 Feed\_Conversion\_ratio = Feed/Body\_Gain) |>   
 gt::gt()

| POND | Feed | Initial\_weight | Final\_weight | Body\_Gain | Percent\_Weight\_gain | Daily\_weight\_gain | Specific\_growth\_rate | Feed\_Conversion\_ratio |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| POND 16 | 13.881 | 12.879333 | 27.73427 | 14.85493 | 115.33930 | 0.7073778 | 3.652594 | 0.9344370 |
| POND 20 | 16.536 | 9.392133 | 30.75907 | 21.36693 | 227.49819 | 1.0174730 | 5.649106 | 0.7739061 |
| POND 22 | 12.088 | 9.170333 | 28.24200 | 19.07167 | 207.97136 | 0.9081746 | 5.356365 | 0.6338198 |
| POND 23 | 13.329 | 12.986133 | 24.41413 | 11.42800 | 88.00156 | 0.5441905 | 3.006096 | 1.1663458 |
| POND 35 | 13.059 | 11.848000 | 33.45517 | 21.60717 | 182.36974 | 1.0289127 | 4.943082 | 0.6043828 |
| POND 37 | 11.298 | 10.122833 | 32.61217 | 22.48933 | 222.16441 | 1.0709206 | 5.570913 | 0.5023715 |
| POND 44 | 11.793 | 13.245667 | 31.01433 | 17.76867 | 134.14702 | 0.8461270 | 4.051329 | 0.6636964 |
| POND 51 | 10.386 | 10.514833 | 28.89450 | 18.37967 | 174.79751 | 0.8752222 | 4.813640 | 0.5650810 |
| POND 52 | 13.901 | 10.686833 | 26.82483 | 16.13800 | 151.00825 | 0.7684762 | 4.382455 | 0.8613831 |