

FarmSense 2020: ovibait summary and stats

Which weeks had counts?

```
trap_mns %>%
  filter(Lure == "Peterson") %>%
  ***Shows date where FarmSense trails off***
```

A tibble: 28 x 7

Groups: TrapType, Lure, intervalID [28]

| TrapType | Lure | intervalID | EndDate | nObs | mn | sem |
|----------|-----------|------------|---------------|-------|-------|-------|
| <chr> | <chr> | <dbl> | <date> | <int> | <dbl> | <dbl> |
| 1 | Farmsense | Peterson | 3 2020-07-16 | 7 | 18.7 | 8.15 |
| 2 | Farmsense | Peterson | 4 2020-07-22 | 7 | 13.7 | 6.77 |
| 3 | Farmsense | Peterson | 5 2020-07-29 | 7 | 18.4 | 7.30 |
| 4 | Farmsense | Peterson | 6 2020-08-06 | 7 | 22.4 | 8.26 |
| 5 | Farmsense | Peterson | 7 2020-08-12 | 7 | 12.1 | 4.40 |
| 6 | Farmsense | Peterson | 8 2020-08-20 | 7 | 3.71 | 1.13 |
| 7 | Farmsense | Peterson | 9 2020-08-27 | 7 | 1.29 | 0.522 |
| 8 | Farmsense | Peterson | 10 2020-09-03 | 7 | 1 | 0.436 |
| 9 | Farmsense | Peterson | 11 2020-09-11 | 7 | 0 | 0 |

Ovibait, 5-week trap totals

```
bait_trap_sums <- all %>%
  mutate(replicate = PlotID%/%10) %>%
  ***re-extract replicate block from plotID***
  arrange(intervalID,replicate) %>%
  ***convenient for visual confirmation***
  filter(Lure == "Peterson" & EndDate <= as.Date("2020-08-12")) %>%
  group_by(TrapType,replicate) %>%
  summarise(nObs = n(),
            total = sum(Count, na.rm = TRUE))
bait_trap_sums
```

A tibble: 14 x 4

Groups: TrapType [2]

| TrapType | replicate | nObs | total |
|-------------|-----------|-------|-------|
| <chr> | <dbl> | <int> | <dbl> |
| 1 Farmsense | 1 | 5 | 3 |
| 2 Farmsense | 2 | 5 | 3 |
| 3 Farmsense | 3 | 5 | 68 |
| 4 Farmsense | 4 | 5 | 148 |
| 5 Farmsense | 5 | 5 | 98 |
| 6 Farmsense | 6 | 5 | 227 |
| 7 Farmsense | 7 | 5 | 51 |
| 8 Wing | 1 | 5 | 0 |
| 9 Wing | 2 | 5 | 1 |
| 10 Wing | 3 | 5 | 0 |
| 11 Wing | 4 | 5 | 3 |
| 12 Wing | 5 | 5 | 0 |
| 13 Wing | 6 | 5 | 2 |
| 14 Wing | 7 | 5 | 2 |

Mean and SE by Device

```
bait_trap_sums %>%
  group_by(TrapType) %>%
```

```

  summarise(nObs = sum(!is.na(total)),
            mn = mean(total, na.rm = TRUE),
            sem = se(total))
A tibble: 2 x 4
  TrapType    nObs    mn    sem
  <chr>      <int> <dbl> <dbl>
1 Farmsense     7 85.4  30.5
2 Wing          7  1.14  0.459

```

Welch unequal variance t-test

```

t.test(total ~ TrapType,
       data = bait_trap_sums,
       var.equal = FALSE)

```

Welch Two Sample t-test

```

data:  total by TrapType
t = 2.7588, df = 6.0027, p-value = 0.03289
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 9.537056 159.034372
sample estimates:
 mean in group Farmsense      mean in group Wing
      85.428571             1.142857

```