9_ByPermit_SummaryStats

```
library(tidyverse)
```

```
## -- Attaching packages ---------------------------------------------------------------------------
```

```
## v ggplot2 3.2.1     v purrr   0.3.2
## v tibble  2.1.3     v dplyr   0.8.3
## v tidyr   1.0.0     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0
```

```
## -- Conflicts ------------------------------------------------------------------------------------
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(rgdal)
```

```
## Loading required package: sp
```

```
## rgdal: version: 1.4-4, (SVN revision 833)
##  Geospatial Data Abstraction Library extensions to R successfully loaded
##  Loaded GDAL runtime: GDAL 2.4.2, released 2019/06/28
##  Path to GDAL shared files: /Library/Frameworks/R.framework/Versions/3.6/Resources/library/rgdal/gdal
##  GDAL binary built with GEOS: FALSE
##  Loaded PROJ.4 runtime: Rel. 5.2.0, September 15th, 2018, [PJ_VERSION: 520]
##  Path to PROJ.4 shared files: /Library/Frameworks/R.framework/Versions/3.6/Resources/library/rgdal/pr
##  Linking to sp version: 1.3-1
```

```
library(sf)
```

```
## Linking to GEOS 3.7.2, GDAL 2.4.2, PROJ 5.2.0
```

```
df = readOGR("../R_output/spatial/KernAg_CDFA_pest/2017/B50/KernAg_CDFA_Pest2017_B50.shp") %>%
  st_as_sf()
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "/Users/clairepowers/Desktop/Organics_Final/Working/R_files/R_output/spatial/KernAg_CDFA_pest
## with 8531 features
## It has 33 fields
```

```
farmers = df %>%
  as.data.frame() %>%
  dplyr::select(1,4,7,10,11,13:33)

farmers$CDFA = ifelse(is.na(farmers$CDFA),0,1) # Replace NAs with 0 in CDFA column
```

```
farmers_summary = farmers %>%
  group_by(PERMIT,PERMITT) %>%
  summarise(total_fields = n(),
            total_org = sum(CDFA),
            conv_soilQ = mean(STORIE_[CDFA==0],na.rm = T),
            org_soilQ = mean(STORIE_[CDFA==1],na.rm = T))

farmers_summary_2 = farmers_summary %>%
  filter(conv_soilQ !="NaN" & org_soilQ != "NaN"&total_org>5)

t.test(farmers_summary_2$conv_soilQ,farmers_summary_2$org_soilQ)
```

```
##
##  Welch Two Sample t-test
##
## data:  farmers_summary_2$conv_soilQ and farmers_summary_2$org_soilQ
## t = 0.42397, df = 19.401, p-value = 0.6763
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.4844333  0.7309744
## sample estimates:
## mean of x mean of y
##  1.790055  1.666784
```