

# All Crop Summary Stats

```
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/proj
```

```
## Linking to sp version: 1.3-1
```

```
library(sf)
```

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

```
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()
```

```
options(scipen = 9999)
```

```
# Values for for() loop
```

```
buf_width = c(50)
```

```
years = 2017
```

```
#### Read in KernAg_CDFA_join shapefile data for all years and buffer widths and convert to spatial data
```

```
for(i in years){
```

```
  for(j in buf_width){
```

```
    tmp = readOGR(paste0("../R_output/spatial/KernAg_CDFA_pest/",i,"/B",j,"/KernAg_CDFA_Pest",i,"_B",j,
                        st_as_sf())
```

```
    output = tmp %>%
```

```
      separate(col = "COMM",
```

```
        into = c("COMM_x","COMM_y"),
```

```
        sep = "-",
```

```
        remove = FALSE)
```

```
    output$COMM=as.character(output$COMM)
```

```
    output$COMM_x=as.character(output$COMM_x)
```

```
    output$COMM_y=as.character(output$COMM_y)
```

```
    output$COMM_new <- ifelse(output$COMM_y == "ORGANIC"|is.na(output$COMM_y),
```

```

        output$COMM_x,
        output$COMM)

output = output %>%
  dplyr::select(-COMM_x,-COMM_y)

write_csv(tmp,
  paste0("../R_output/CSV/CDFA_KernAg_join_2/CDFA_crops_",i,"_buf",j,".csv"))

assign(paste0("all_",i,"_B",j),output)

}
}

```

```

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

## Warning: Expected 2 pieces. Missing pieces filled with `NA` in 8330
## rows [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
## 20, ...].

```

All Fields Summary Stats

```

for(i in years){
  for(j in buf_width){

    tmp = eval(as.name(paste0("all_",i,"_B",j))) %>%
      as.data.frame() %>%
      dplyr::select(-geometry) %>%
      summarise(total_fields = n(),
                total_hectares = round(sum(AREA_HE),1),
                average_field_size = round(mean(AREA_HE),1),
                average_SoilQ = mean(STORIE_, na.rm = T),
                total_pest_app = sum(KgPstPr),
                kg_per_hectare = sum(KgPstPr)/sum(acrstst*0.0405))

    assign(paste0("all_",i,"_B",j,"_SumStats"),tmp)

  }
}

```

Organic Field Summary Stats

```

for(i in years){
  for(j in buf_width){

    tmp = eval(as.name(paste0("all_",i,"_B",j))) %>%
      as.data.frame() %>%
      dplyr::select(-geometry) %>%
      filter(CDFA == "1") %>%
      summarise(total_fields = n(),
                total_hectares = round(sum(AREA_HE),1),
                average_field_size = round(mean(AREA_HE),1),
                average_SoilQ = mean(STORIE_, na.rm = T),

```

```

        total_pest_app = sum(KgPstPr),
        kg_per_hectare = sum(KgPstPr)/sum(acrstrt*0.0405))

    assign(paste0("Organic_",i,"_B",j,"_SumStats"),tmp)

  }
}

```

Conventional Field Summary Stats

```

for(i in years){
  for(j in buf_width){

    tmp = eval(as.name(paste0("all_",i,"_B",j))) %>%
      as.data.frame() %>%
      select(-geometry) %>%
      filter(is.na(CDFA)) %>%
      summarise(total_fields = n(),
                total_hectares = round(sum(AREA_HE),1),
                average_field_size = round(mean(AREA_HE),1),
                average_SoilQ = mean(STORIE_, na.rm = T),
                total_pest_app = sum(KgPstPr),
                kg_per_hectare = sum(KgPstPr)/sum(acrstrt*0.0405))

    assign(paste0("Conv_",i,"_B",j,"_SumStats"),tmp)

  }
}

for(i in years){
  for(j in buf_width)
    tmp = rbind(# eval(as.name(paste0("all_",i,"_B0_SumStats"))),
                # eval(as.name(paste0("Conv_",i,"_B0_SumStats"))),
                # eval(as.name(paste0("Organic_",i,"_B0_SumStats"))),
                eval(as.name(paste0("all_",i,"_B50_SumStats"))),
                eval(as.name(paste0("Conv_",i,"_B50_SumStats"))),
                eval(as.name(paste0("Organic_",i,"_B50_SumStats"))),
                # eval(as.name(paste0("all_",i,"_B100_SumStats"))),
                # eval(as.name(paste0("Conv_",i,"_B100_SumStats"))),
                # eval(as.name(paste0("Organic_",i,"_B100_SumStats")))
                )

    rownames(tmp) = c(# "All_0", "Conv_0", "Org_0",
                      "All_50", "Conv_50", "Org_50")
                      #"All_100", "Conv_100", "Org_100")

    assign(paste0("ALL_",i,"_SumStats"),tmp)

  }
}

```