Fan and no fan effect on LCMS measurements

Necessary libraries

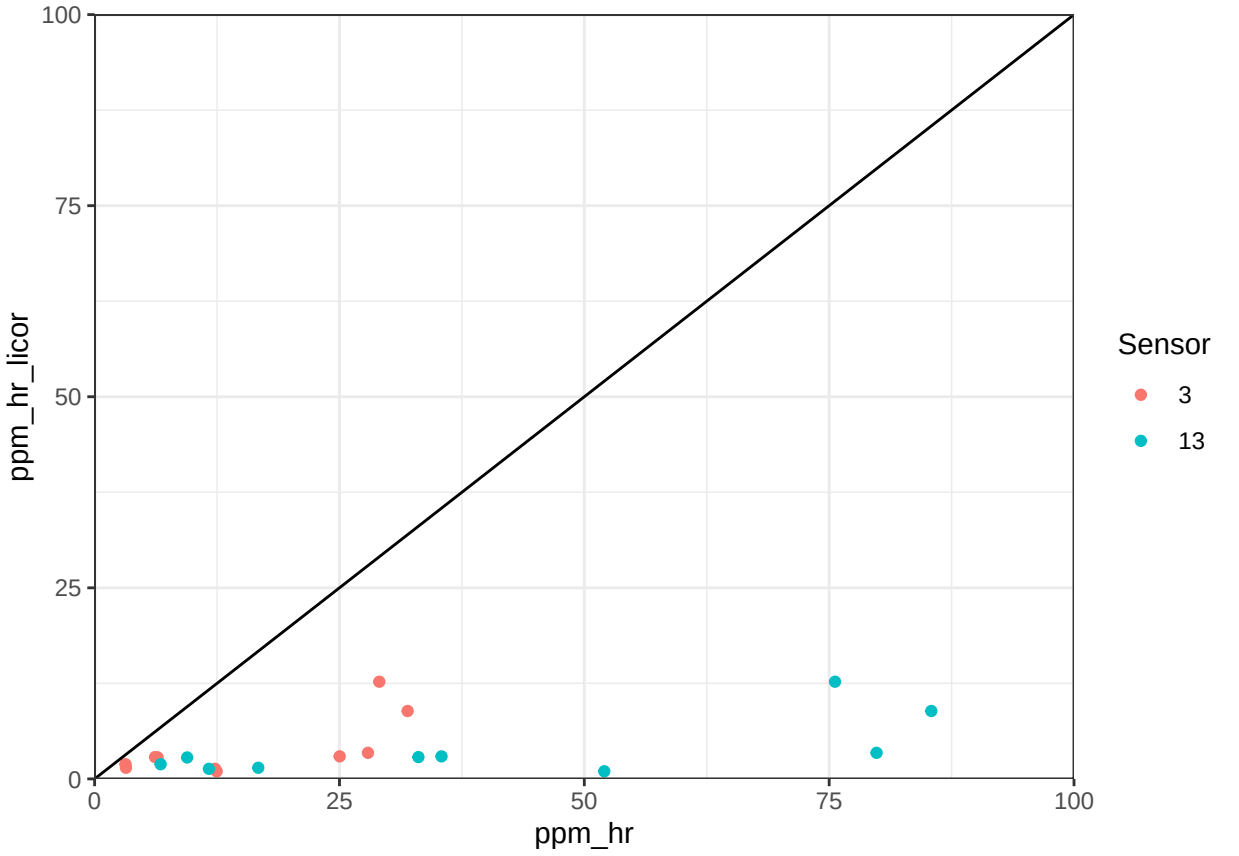
Read file

```
master <- read_excel("F_NF_Final _Zhang_Wrangle.xlsx", sheet=2)
master$Sensor <- as.factor(master$Sensor)
str(master)
```

```
## tibble [20 x 5] (S3: tbl_df/tbl/data.frame)
##  $ Sensor      : Factor w/ 2 levels "3","13": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Fan         : chr [1:20] "On" "On" "On" "On" ...
##  $ ppm_hr      : num [1:20] 29.07 12.46 27.91 6.17 3.2 ...
##  $ ppb_s_licor : num [1:20] 3.532 0.277 0.947 0.793 0.404 ...
##  $ ppm_hr_licor: num [1:20] 12.715 0.997 3.41 2.854 1.456 ...
```

ggplot - all together

```
ggplot(data=master, aes(x=ppm_hr, y=ppm_hr_licor, color=Sensor))+
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)
```



ggplot - fan off all together

```
fan_off <-
ggplot(data=master%>% filter(Fan == "Off"), aes(x=ppm_hr, y=ppm_hr_licor, color=Sensor))+
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)+
  ggtitle("Fan off")
```

ggplot - fan on all together

```
fan_on <-
ggplot(data=master%>% filter(Fan == "On"), aes(x=ppm_hr, y=ppm_hr_licor, color=Sensor))+
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)+
  ggtitle("Fan On")
```

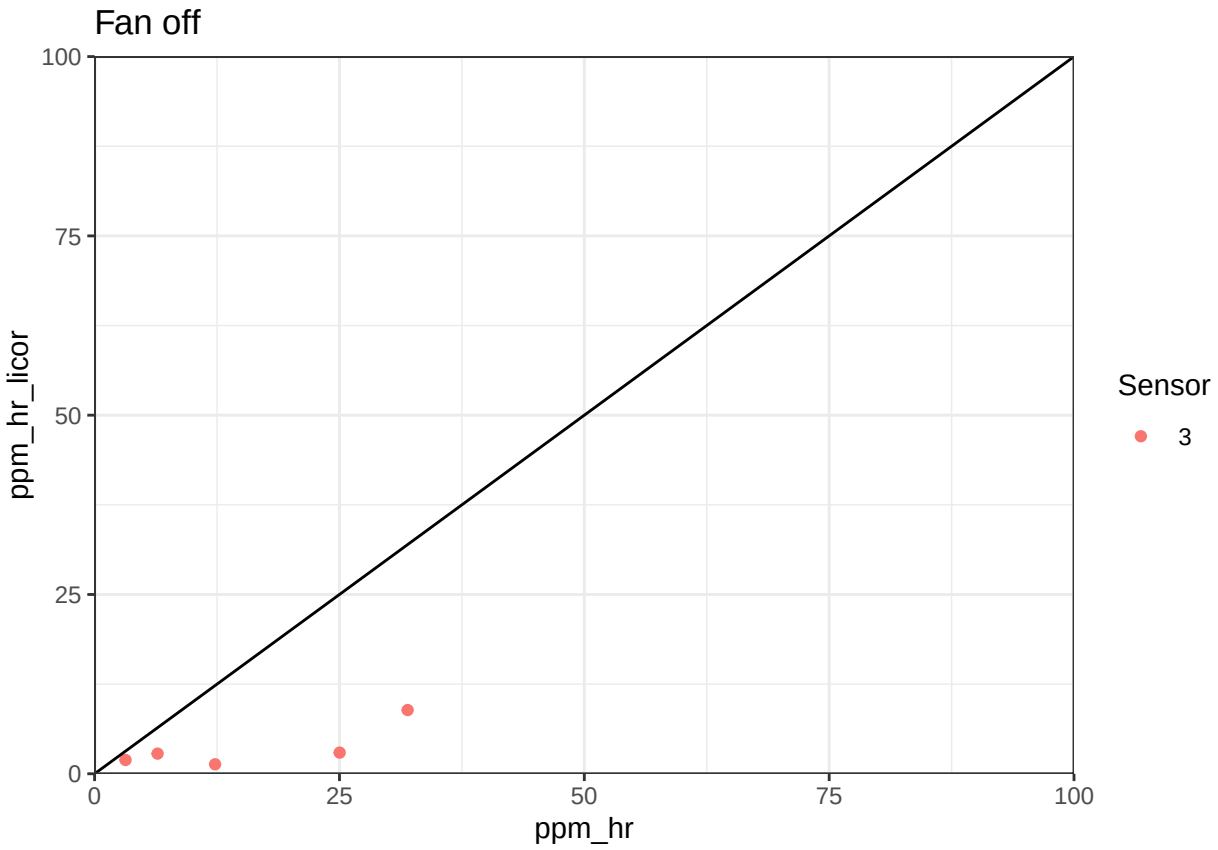
Combine into one graph

```
all <- ggarrange(fan_off,fan_on,
                 nrow = 1,
                                common.legend = TRUE,
                                legend= "bottom")


ggsave(filename = "all.jpg",  # Include the file extension here
       plot = all,              # Specify the plot
       dpi = 400,
       height = 12, width = 30, units = "cm")
```

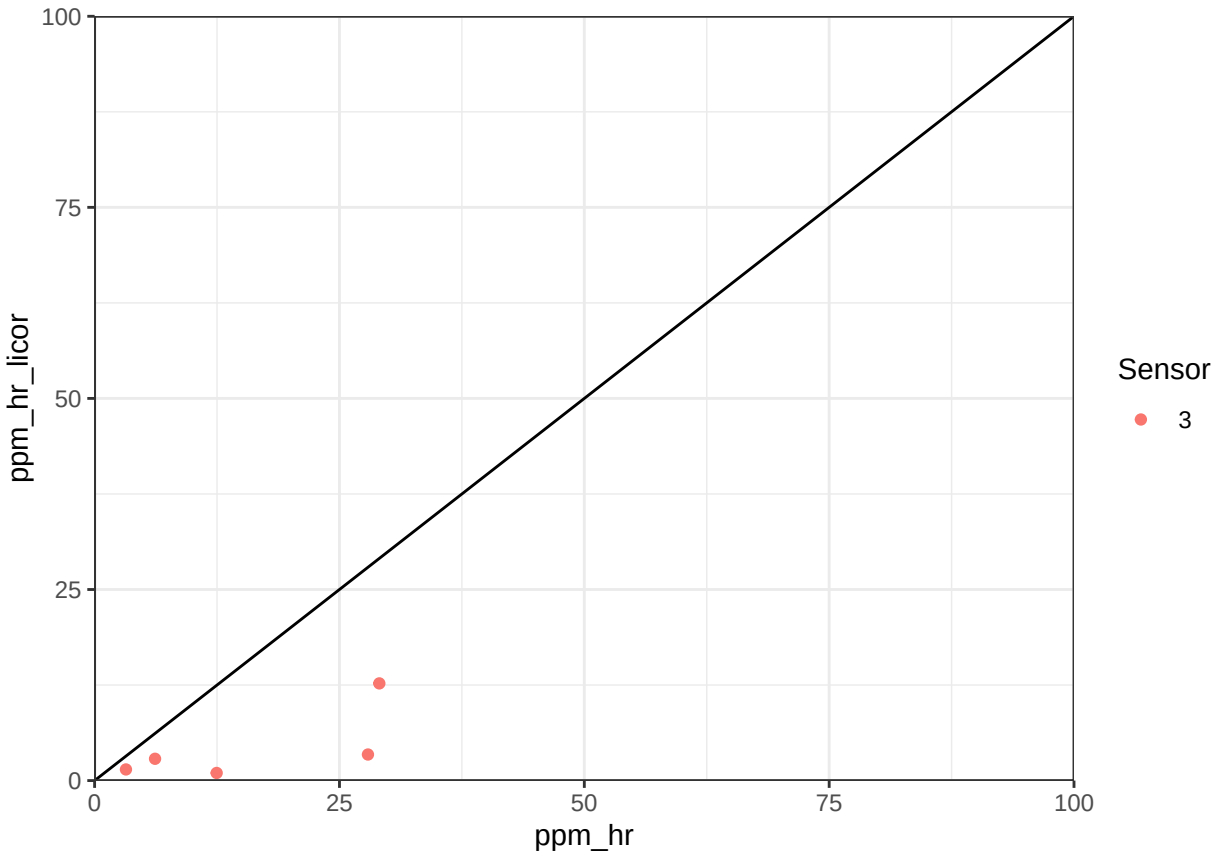
ggplot - fan off sensor 3

```
ggplot(data=master%>% filter(Fan == "Off") %>% filter(Sensor =="3"), aes(x=ppm_hr, y=ppm_hr_licor, colo
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)+
  ggtitle("Fan off")
```



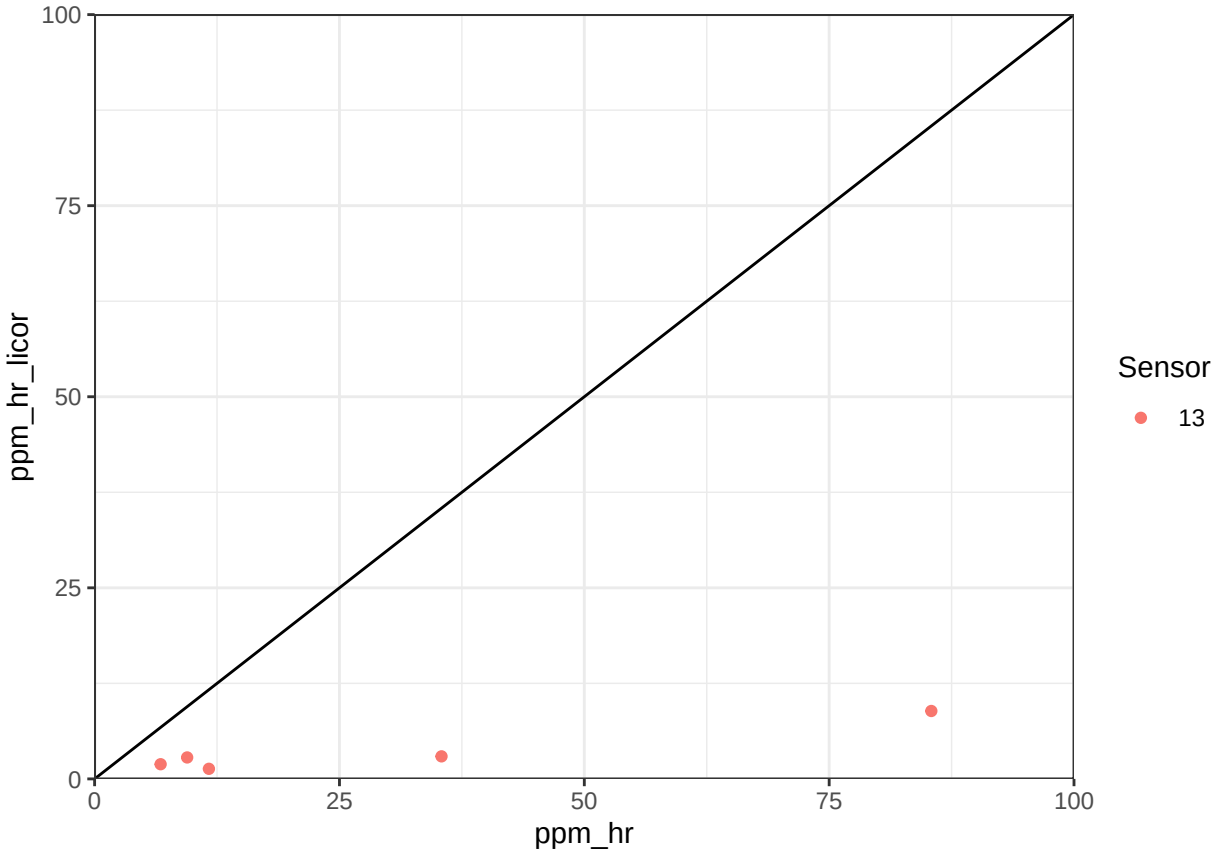
ggplot - fan on sensor 3

```
ggplot(data=master%>% filter(Fan == "On") %>% filter(Sensor =="3"), aes(x=ppm_hr, y=ppm_hr_licor, color=
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)
```



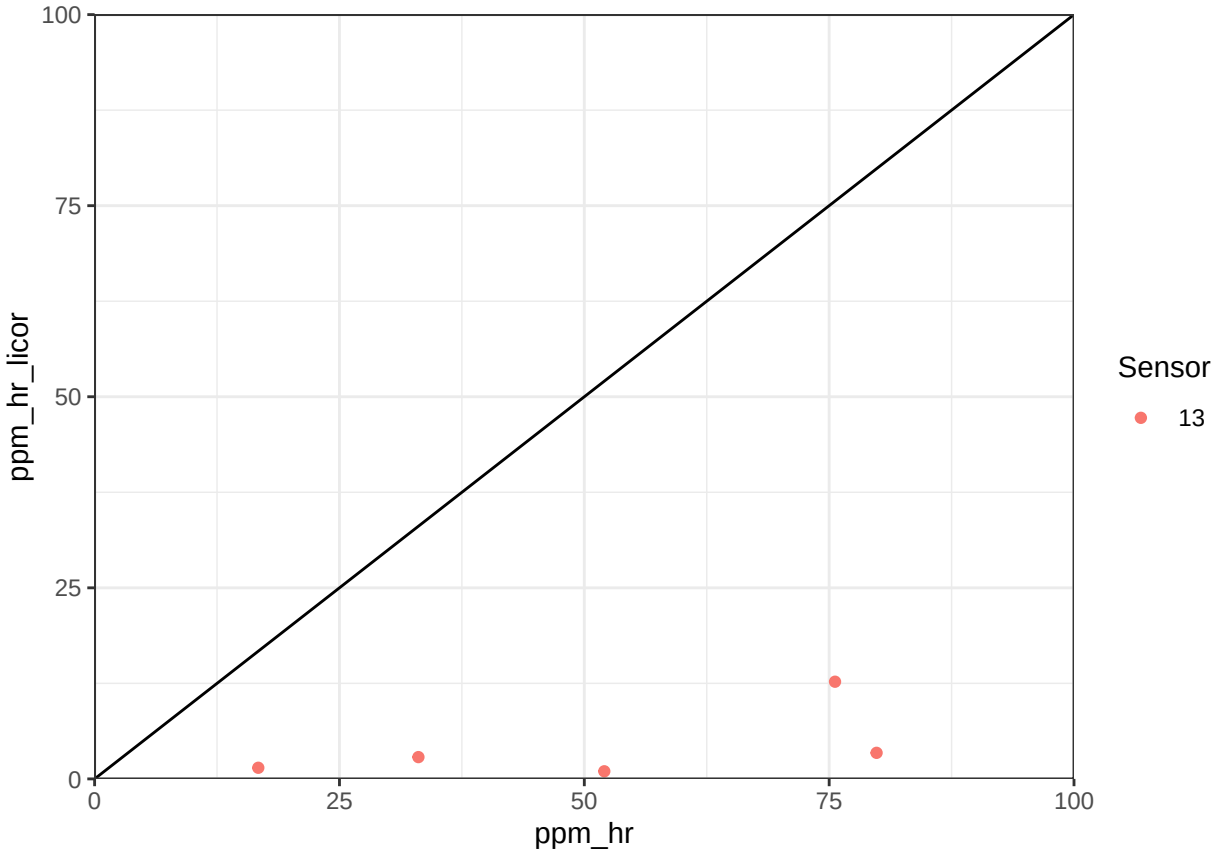
ggplot - fan off sensor 13

```
ggplot(data=master%>% filter(Fan == "Off") %>% filter(Sensor =="13"), aes(x=ppm_hr, y=ppm_hr_licor, col
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)
```



ggplot - fan on sensor 13

```
ggplot(data=master%>% filter(Fan == "On") %>% filter(Sensor =="13"), aes(x=ppm_hr, y=ppm_hr_licor, colo
  geom_point()+
  scale_x_continuous(limits = c(-0, 100), expand = c(0, 0))+
  scale_y_continuous(limits = c(-0, 100), expand = c(0, 0))+
  geom_abline(intercept = 0, slope = 1)
```


100
75
50
25
0
ppm_hr_licor
0
25
50
75
100
ppm_hr
Sensor
13