

CannabinoidAccumLineGraphs

```
library(readxl)
setwd("~/2019 Hemp Field Trials/2019 CBD TRIALS/Data Analysis/Cannabinoid Data")
Cannabinoids2019 <- read_excel("CBDTrial2019.xlsx")
```

```
## New names:
## * `` -> ...18
## * `` -> ...26
## * `` -> ...33
## * `` -> ...36
```

```
Cannabinoids2019$Chemotype = as.factor(Cannabinoids2019$Chemotype)
library(ggplot2)
```

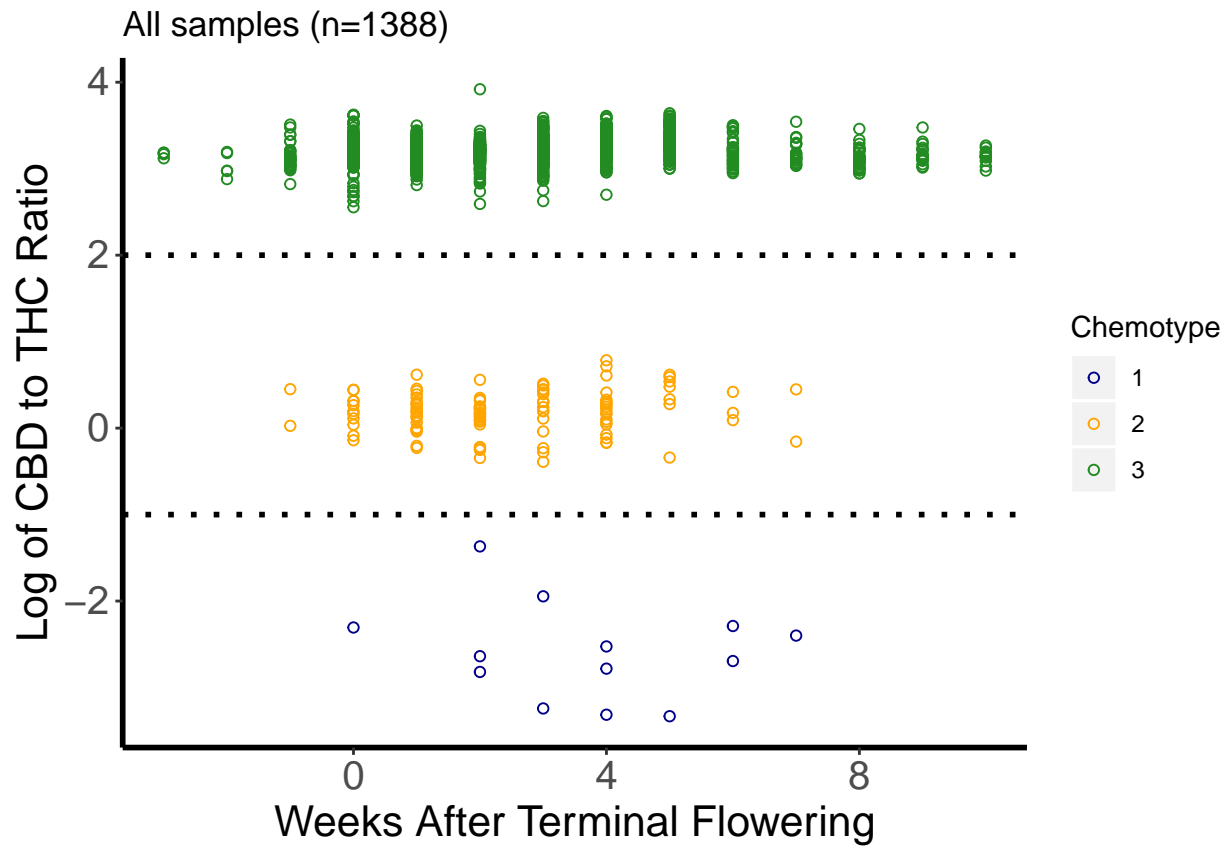
```
ChemotypeIII = subset(Cannabinoids2019, Chemotype=="3")
ChemotypeII = subset(Cannabinoids2019, Chemotype=="2")
ChemotypeI = subset(Cannabinoids2019, Chemotype=="1")
```

```
#Make list of cultivars
cultivars = vector()
for(i in Cannabinoids2019$Cultivar) {
  if(i %in% cultivars) {}
  else{cultivars = append(cultivars, i)}
}
cultivars
```

```
## [1] "A2R4"           "A2R4 (E)"       "AC/DC"
## [4] "Brilliance"     "Cherry 307"     "Cherry 308"
## [7] "Cherry 5"       "Deschutes"      "Deschutes (E)"
## [10] "FL 49"          "FL 58"          "FL 70"
## [13] "FL 70x70"       "FL 71"          "FL 71x71"
## [16] "FL 80"          "KG9201"         "KG9202"
## [19] "Late Sue"       "GVA.H.19.1097"  "GVA.H.19.1097 (E)"
## [22] "NY Cherry"      "Otto II"        "RN 13a"
## [25] "RN 16"          "RN 17"          "RN 19"
## [28] "GVA.H.19.1039"  "Rogue"          "Rogue (E)"
## [31] "T2"             "Tangerine"      "TJs CBD"
## [34] "Umpqua"         "Umpqua (E)"
```

```
ggplot(data = Cannabinoids2019, aes(y=log(CBDtoTHC), x=WeeksPostFlower, color=Chemotype, na.rm=TRUE))+
  #geom_line(stat="summary", size=1, aes(color=Chemotype))+
  geom_point(shape=1, aes(color=Chemotype))+
  scale_color_manual(values=c("blue4", "Orange", "forestgreen"))+
  labs(title=paste("All samples (n=", nrow(Cannabinoids2019), ")", sep=""), y="Log of CBD to THC Ratio",
  geom_abline(intercept=2, slope=0, color="Black", size=1, linetype=3)+
```

```
geom_abline(intercept=-1,slope=0, color="Black", size=1,linetype=3)+
theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
      axis.title = element_text(size=16),
      panel.grid.major = element_blank(),
      panel.grid.minor = element_blank(),
      panel.background = element_blank(),
      axis.line = element_line(color="black", size = 1))
```



```
linegraphTHC = function(cultivar){

  subs = subset(Cannabinoids2019, Cultivar == cultivar)

  if(min(as.numeric(subs$Chemotype))==3){
    ggplot(data = subs, aes(y=THCtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
    geom_line(stat="summary", size=1,aes(color=Chemotype))+
    geom_point(shape=4, aes(color=Chemotype))+
    geom_abline(intercept=.3,slope=0, color="Black", size=1,linetype=3)+
    scale_color_manual(values=c("forestgreen"))+
    labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential THC", x="Weeks After T
    geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
    theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
          axis.title = element_text(size=16),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
```

```

    axis.line = element_line(color="black", size = 1))
  }

  else if(min(as.numeric(subs$Chemotype))==2){
    ggplot(data = subs, aes(y=THCtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
    geom_line(stat="summary", size=1,aes(color=Chemotype))+
    geom_point(shape=4, aes(color=Chemotype))+
    geom_abline(intercept=.3,slope=0, color="Black", size=1,linetype=3)+
    scale_color_manual(values=c("orange","forestgreen"))+
    labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential THC", x="Weeks After T
    geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
    theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
          axis.title = element_text(size=16),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
          axis.line = element_line(color="black", size = 1))
  }

  else{
    ggplot(data = subs, aes(y=THCtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
    geom_line(stat="summary", size=1,aes(color=Chemotype))+
    geom_point(shape=4, aes(color=Chemotype))+
    geom_abline(intercept=.3,slope=0, color="Black", size=1,linetype=3)+
    scale_color_manual(values=c("blue4","Orange","forestgreen"))+
    labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential THC", x="Weeks After T
    geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
    theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
          axis.title = element_text(size=16),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
          axis.line = element_line(color="black", size = 1))
  }
}

```

```

linegraphCBD = function(cultivar){

  subs = subset(Cannabinoids2019, Cultivar == cultivar)

  if(min(as.numeric(subs$Chemotype))==3){
    ggplot(data = subs, aes(y=CBDtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
    geom_line(stat="summary", size=1,aes(color=Chemotype))+
    geom_point(shape=4, aes(color=Chemotype))+
    scale_color_manual(values=c("forestgreen"))+
    labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential CBD", x="Weeks After T
    geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
    theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
          axis.title = element_text(size=16),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
          axis.line = element_line(color="black", size = 1))
  }
}

```

```

}

else if(min(as.numeric(subs$Chemotype))==2){
  ggplot(data = subs, aes(y=CBDtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
  geom_line(stat="summary", size=1,aes(color=Chemotype))+
  geom_point(shape=4, aes(color=Chemotype))+
  scale_color_manual(values=c("orange","forestgreen"))+
  labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential CBD", x="Weeks After T
  geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
  theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
        axis.title = element_text(size=16),
        panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(),
        axis.line = element_line(color="black", size = 1))
}

else{
  ggplot(data = subs, aes(y=CBDtot, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
  geom_line(stat="summary", size=1,aes(color=Chemotype))+
  geom_point(shape=4, aes(color=Chemotype))+
  scale_color_manual(values=c("blue4","Orange","forestgreen"))+
  labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Potential CBD", x="Weeks After T
  geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
  theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
        axis.title = element_text(size=16),
        panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(),
        axis.line = element_line(color="black", size = 1))
}
}

```

```

linegraphTOTAL = function(cultivar){

  subs = subset(Cannabinoids2019, Cultivar == cultivar)

  if(min(as.numeric(subs$Chemotype))==3){
    ggplot(data = subs, aes(y=TotalCannabinoids, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
    geom_line(stat="summary", size=1,aes(color=Chemotype))+
    geom_point(shape=4, aes(color=Chemotype))+
    scale_color_manual(values=c("forestgreen"))+
    labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Cannabinoids", x="Weeks After Te
    geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
    theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
          axis.title = element_text(size=16),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
          axis.line = element_line(color="black", size = 1))
  }

  else if(min(as.numeric(subs$Chemotype))==2){

```

```

ggplot(data = subs, aes(y=TotalCannabinoids, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
geom_line(stat="summary", size=1,aes(color=Chemotype))+
geom_point(shape=4, aes(color=Chemotype))+
scale_color_manual(values=c("orange","forestgreen"))+
labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Cannabinoids", x="Weeks After Te
geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
      axis.title = element_text(size=16),
      panel.grid.major = element_blank(),
      panel.grid.minor = element_blank(),
      panel.background = element_blank(),
      axis.line = element_line(color="black", size = 1))
}

else{
ggplot(data = subs, aes(y=TotalCannabinoids, x=WeeksPostFlower, fill=Chemotype,na.rm=TRUE))+
geom_line(stat="summary", size=1,aes(color=Chemotype))+
geom_point(shape=4, aes(color=Chemotype))+
scale_color_manual(values=c("blue4","Orange","forestgreen"))+
labs(title=paste(cultivar, " (n=", nrow(subs),")", sep=""), y="Total Cannabinoids", x="Weeks After Te
geom_errorbar(stat="summary", size=1,width=.1,na.rm=T)+
theme(axis.text = element_text(angle = 0, hjust = , vjust=.45, size=15),
      axis.title = element_text(size=16),
      panel.grid.major = element_blank(),
      panel.grid.minor = element_blank(),
      panel.background = element_blank(),
      axis.line = element_line(color="black", size = 1))
}
}

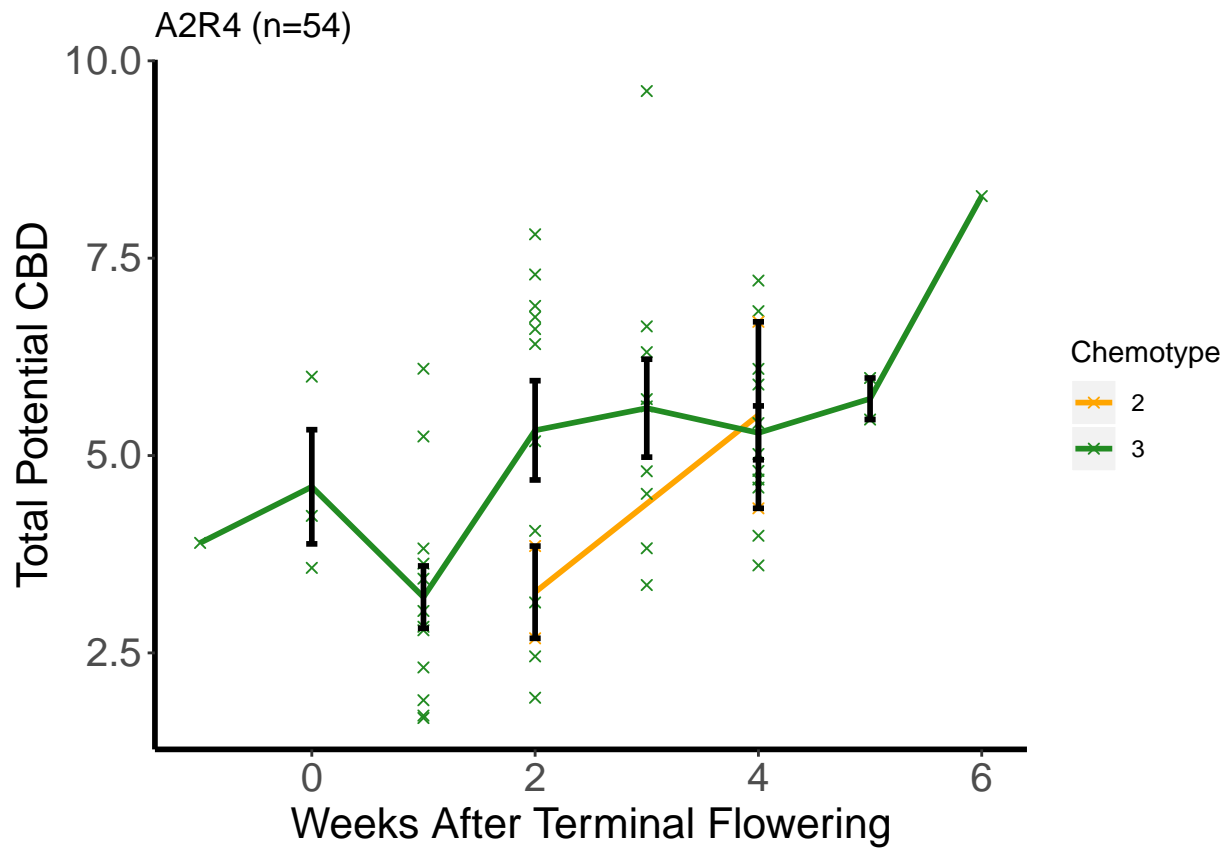
for(cv in cultivars){
  print(linegraphCBD(cv))
  print(linegraphTHC(cv))
  print(linegraphTOTAL(cv))
}

```

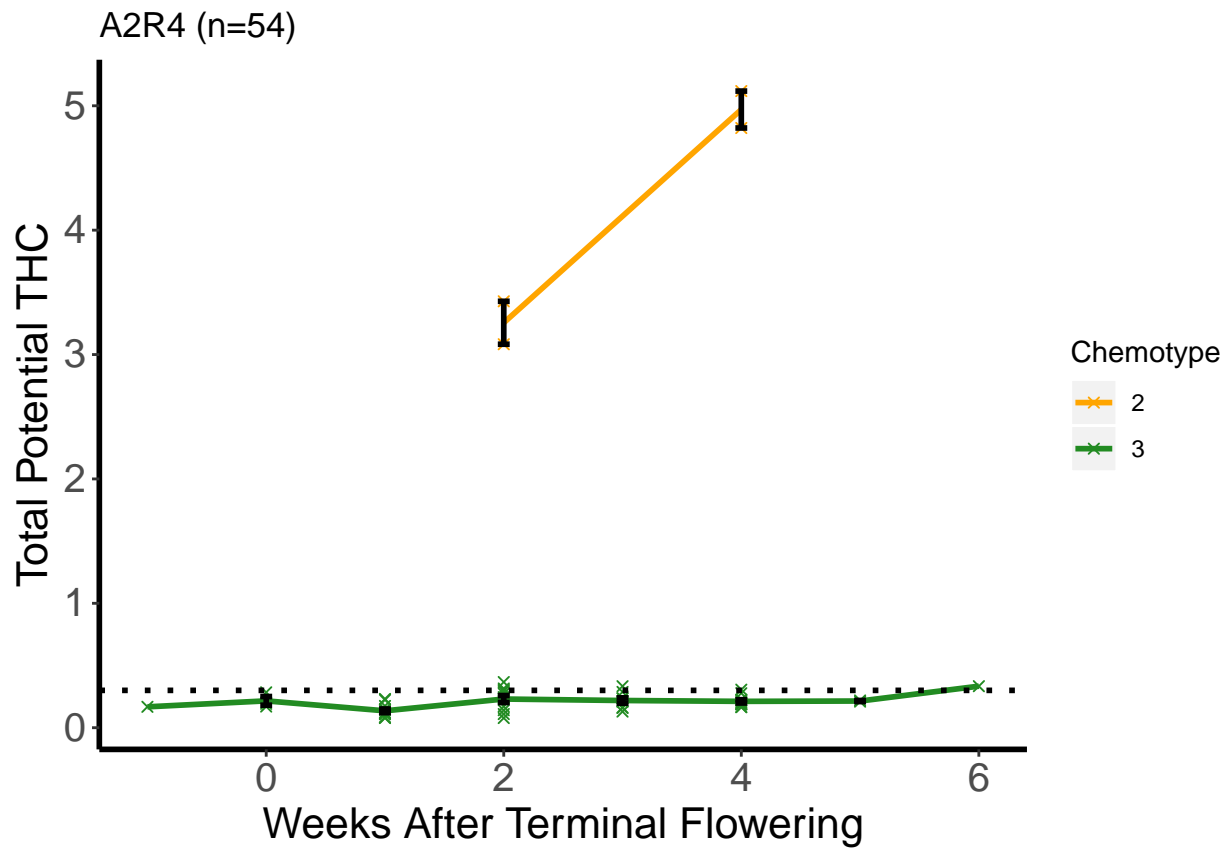
```

## No summary function supplied, defaulting to `mean_se()
## No summary function supplied, defaulting to `mean_se()

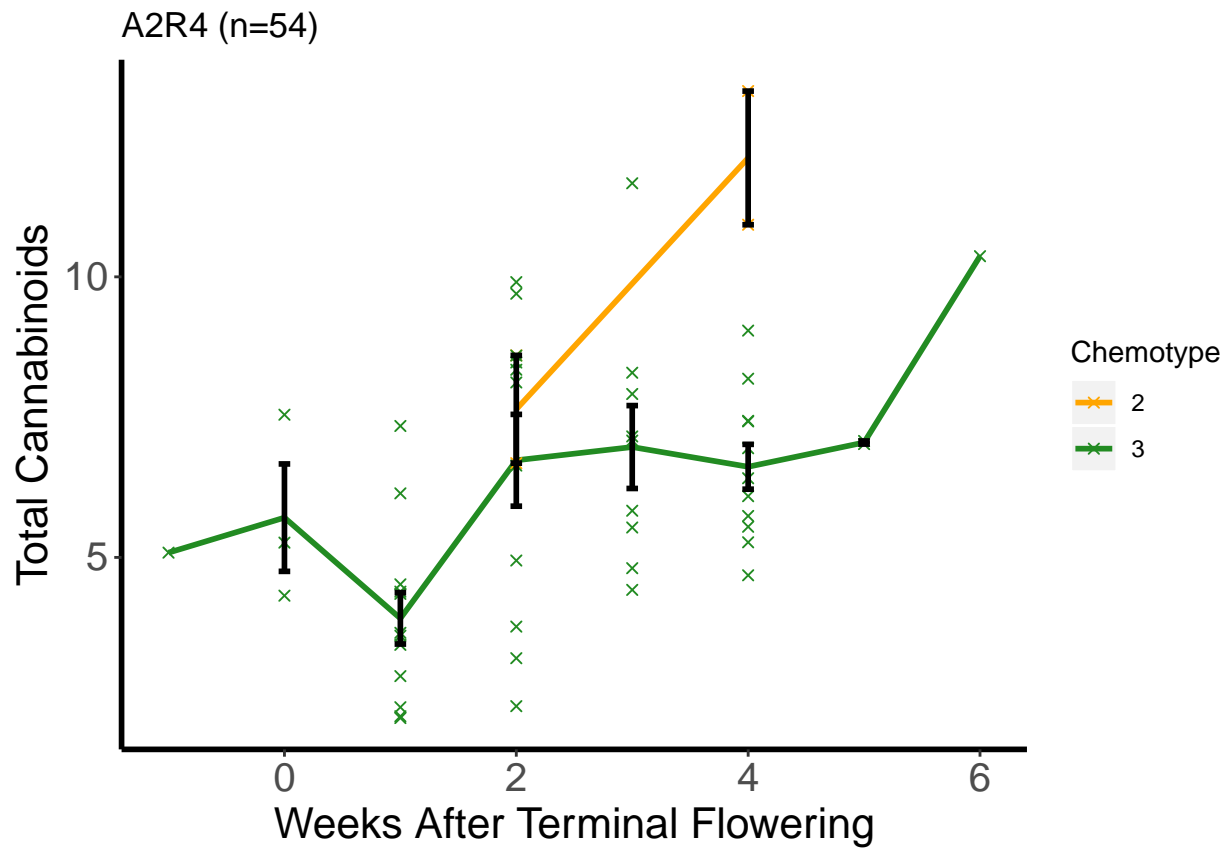
```



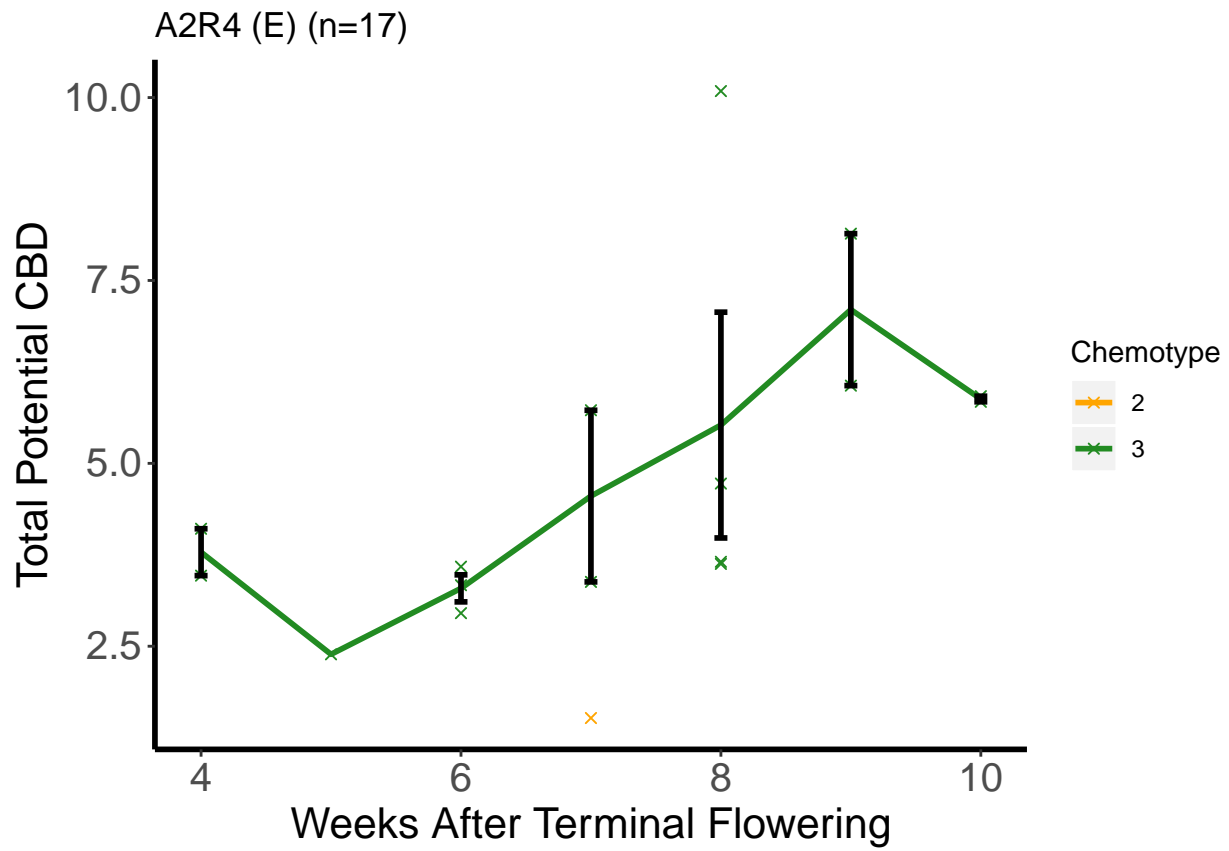
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



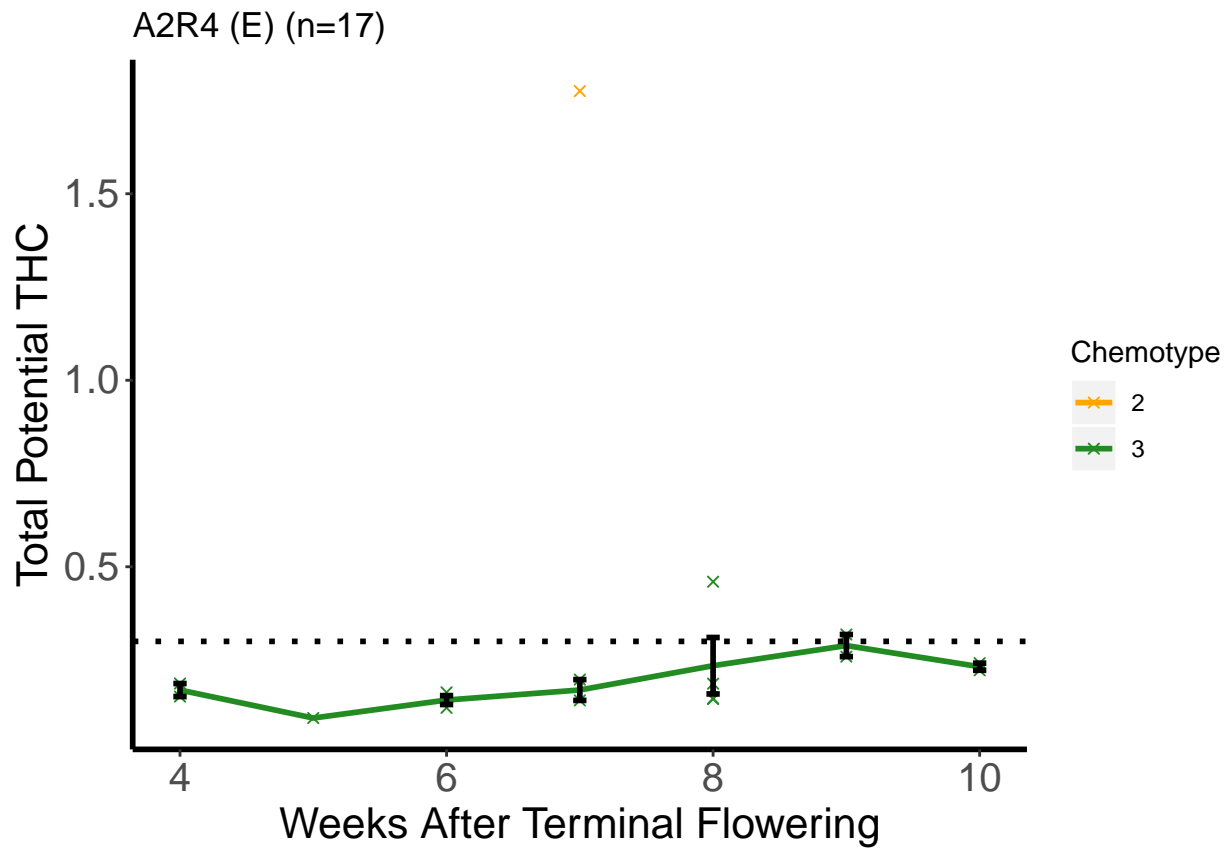
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



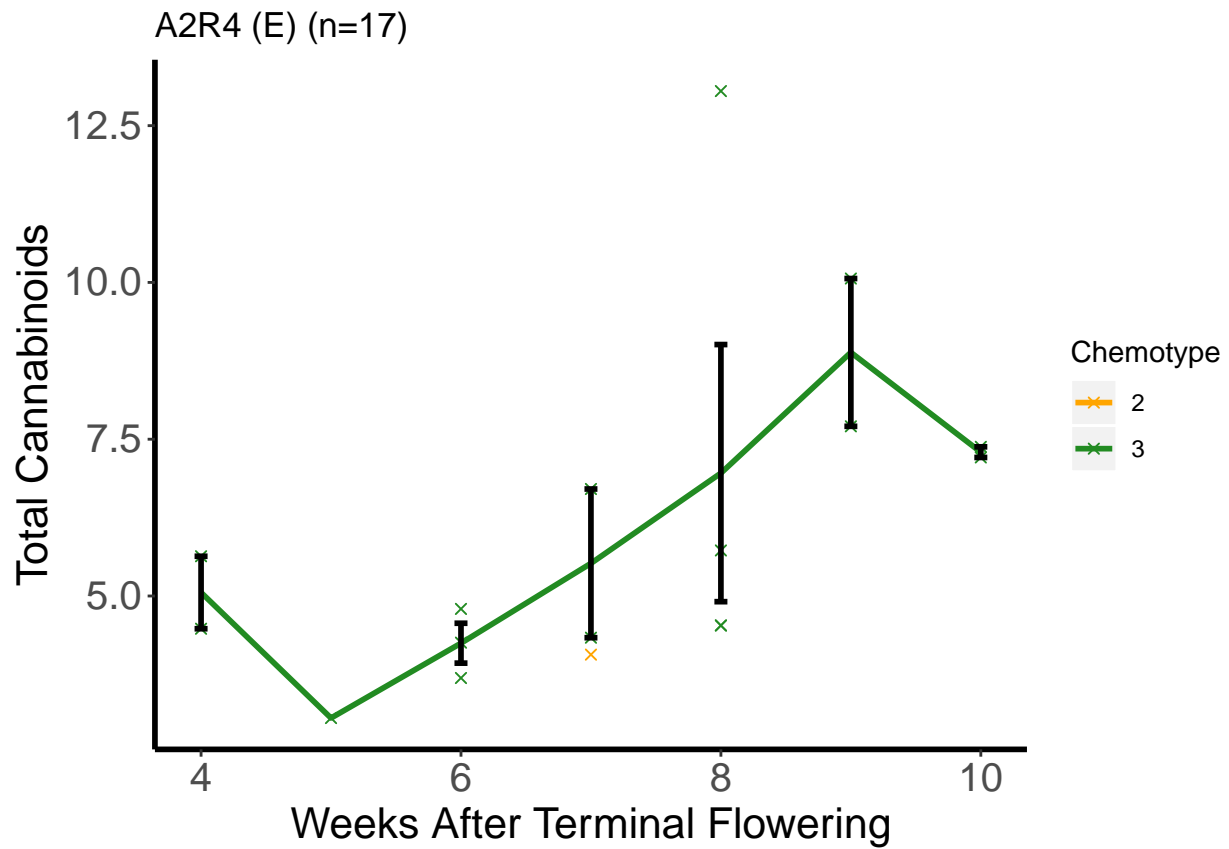
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

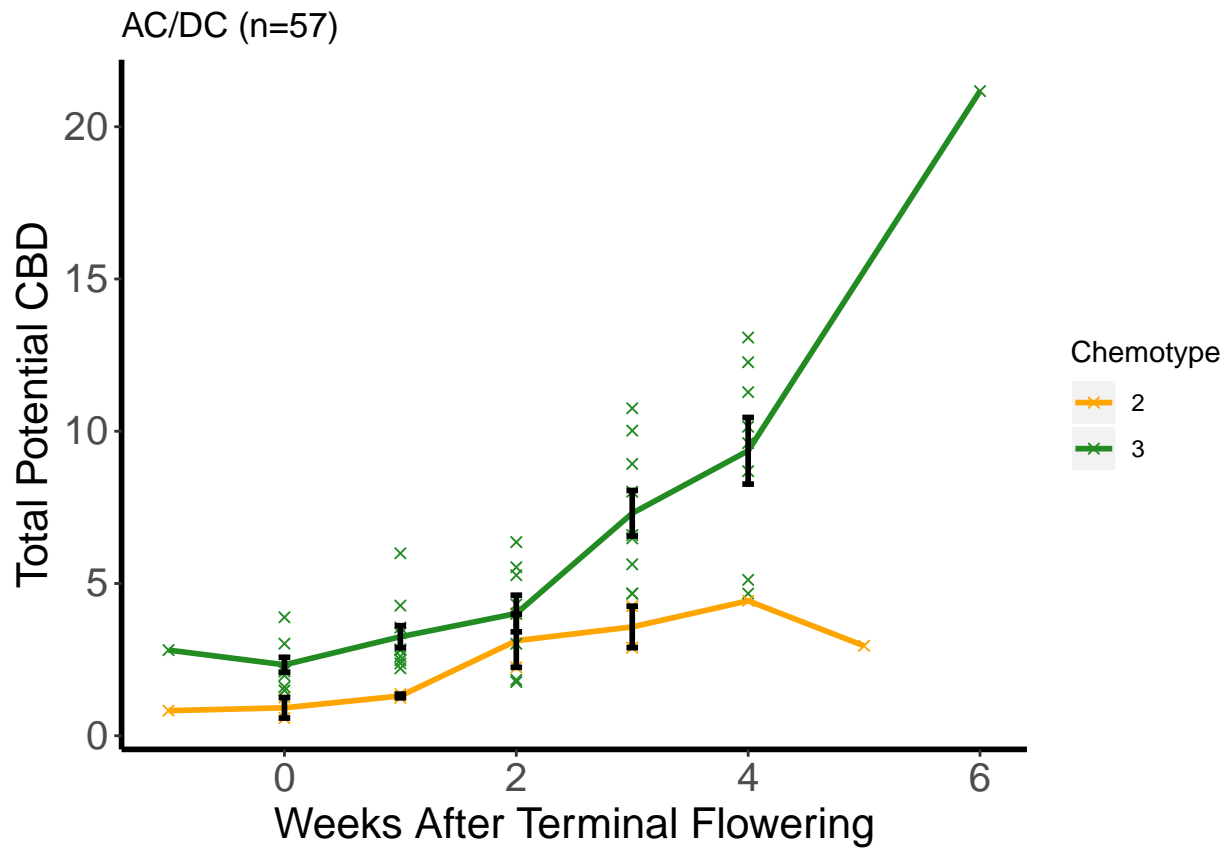
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



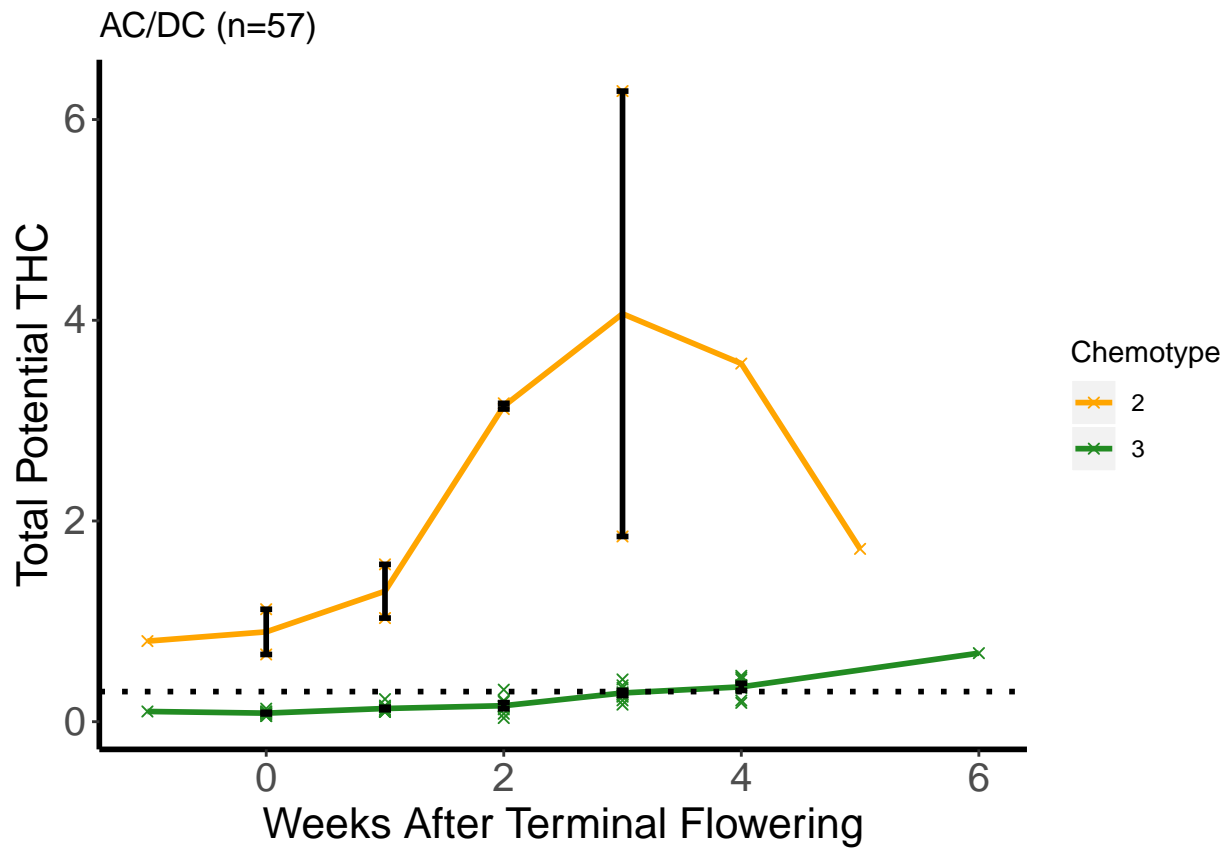
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



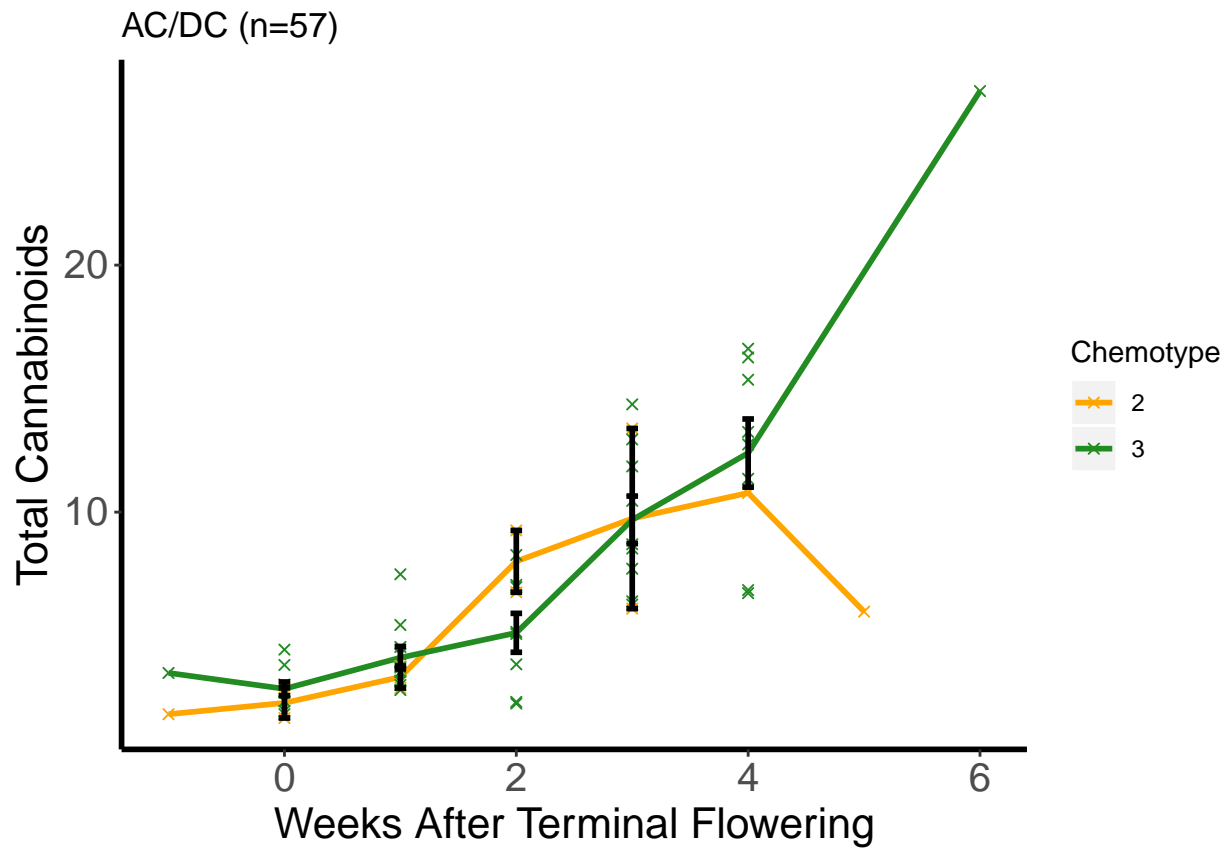
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



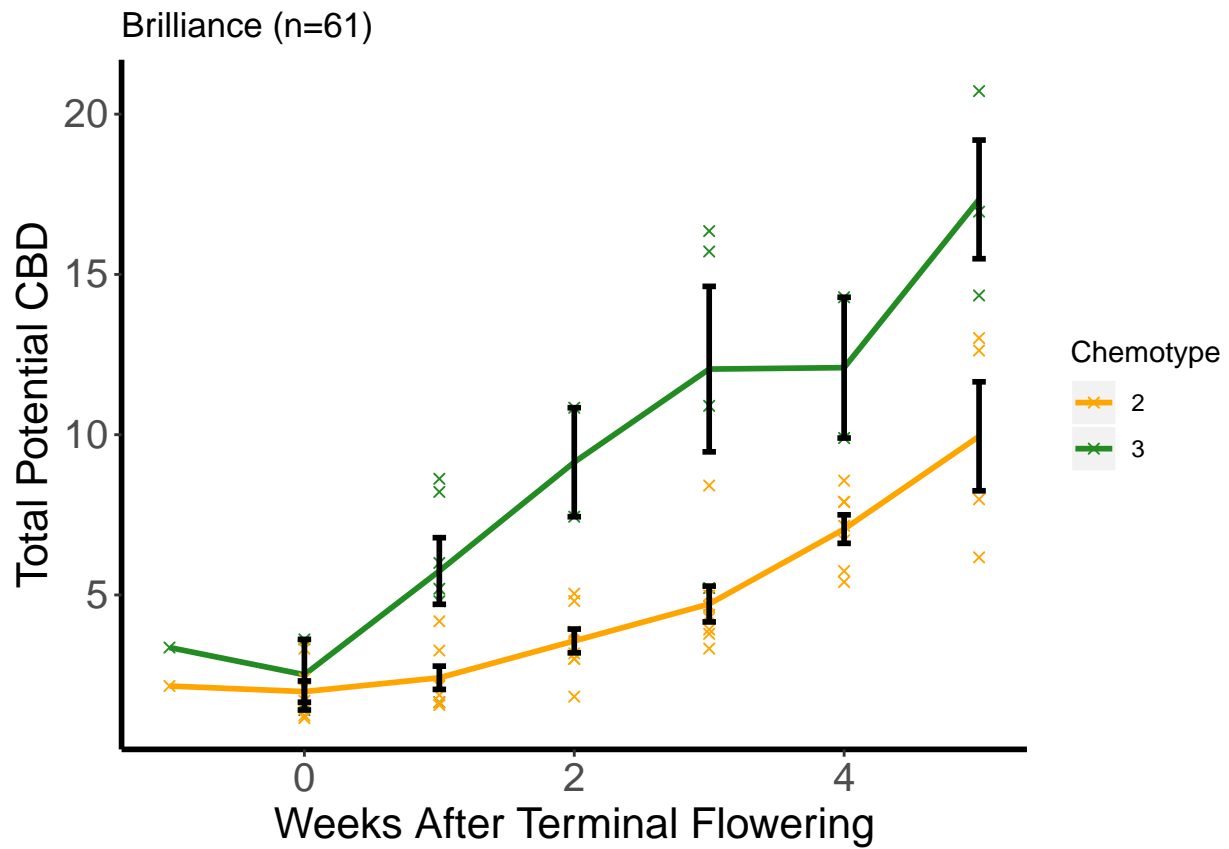
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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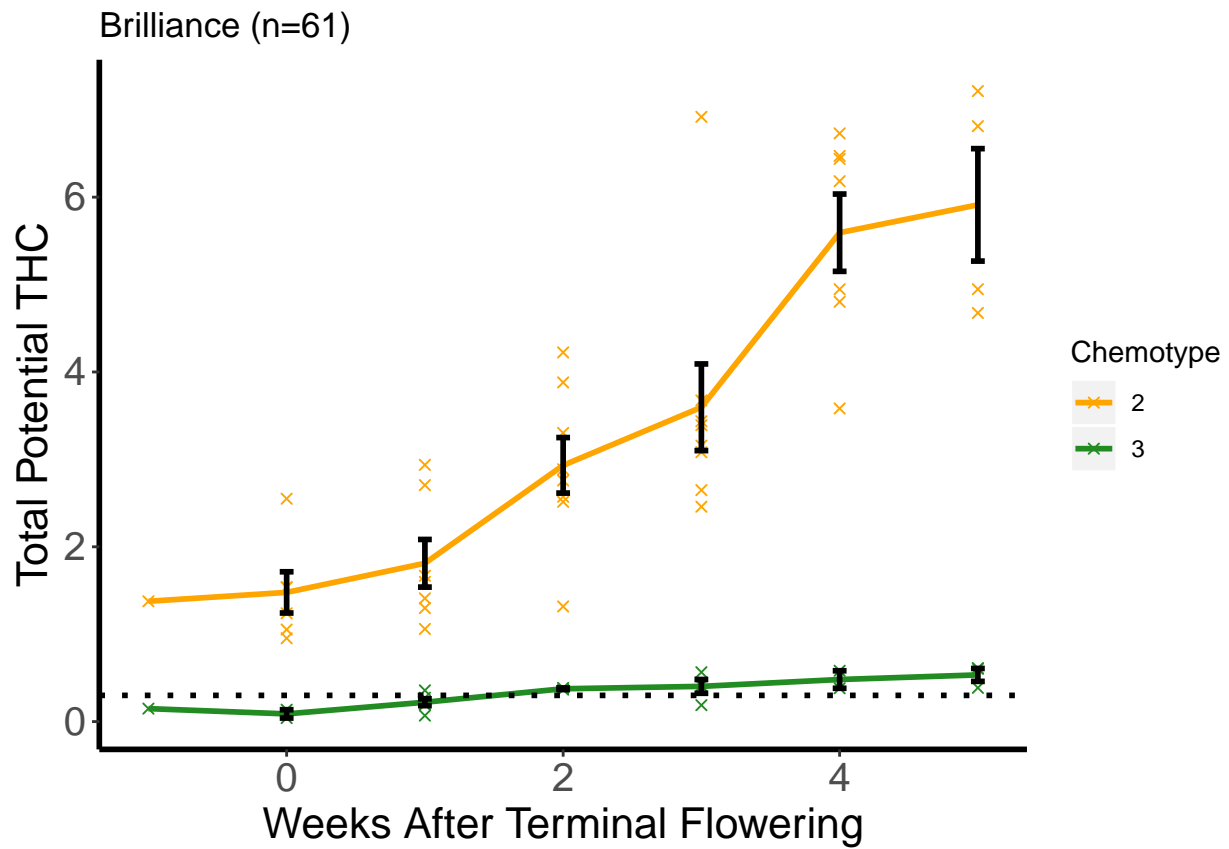
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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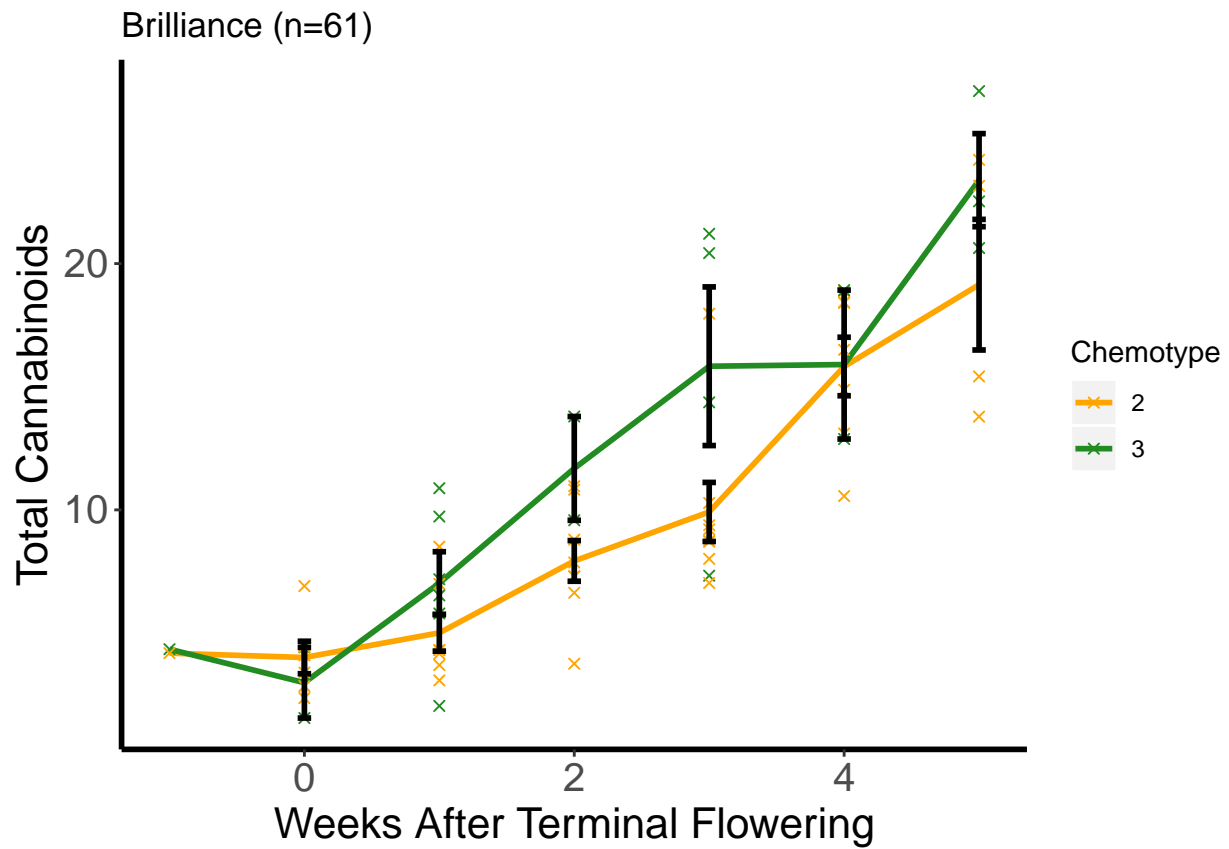
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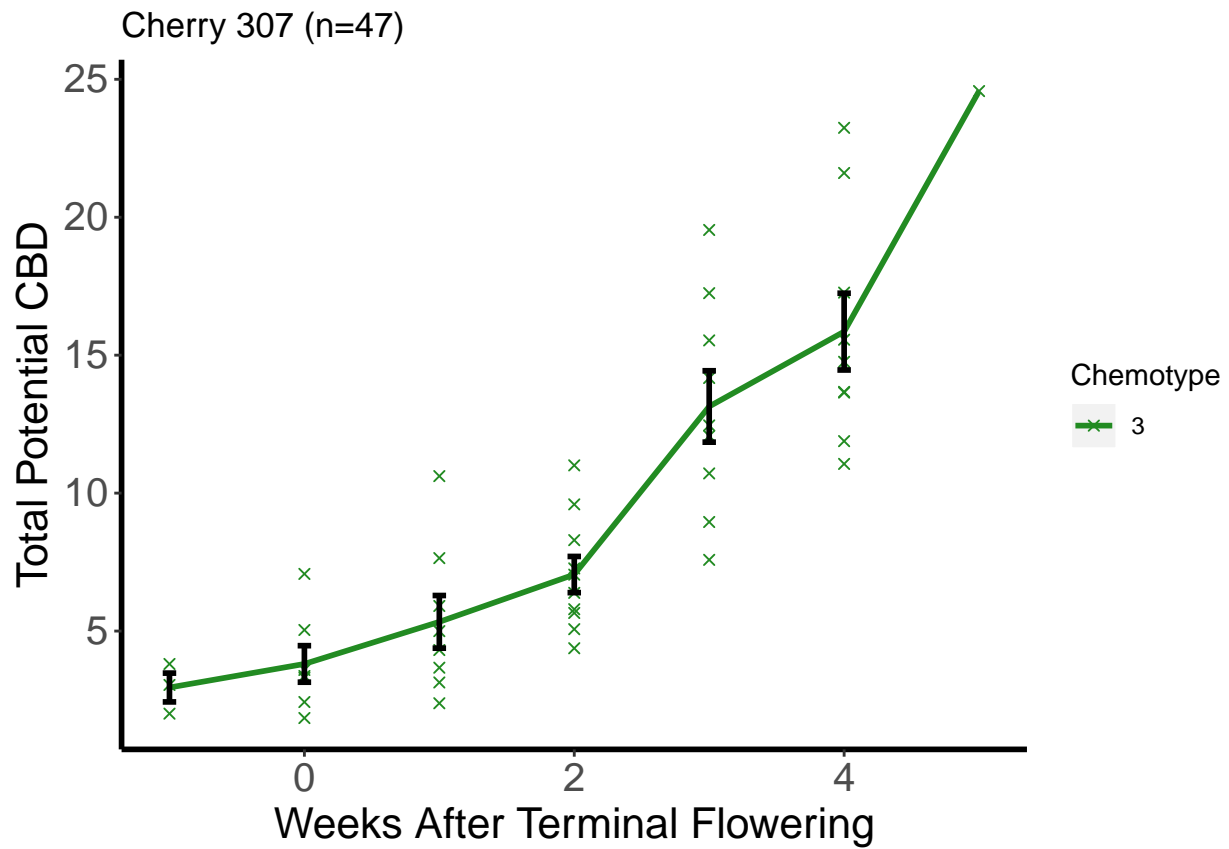
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## No summary function supplied, defaulting to `mean_se()`
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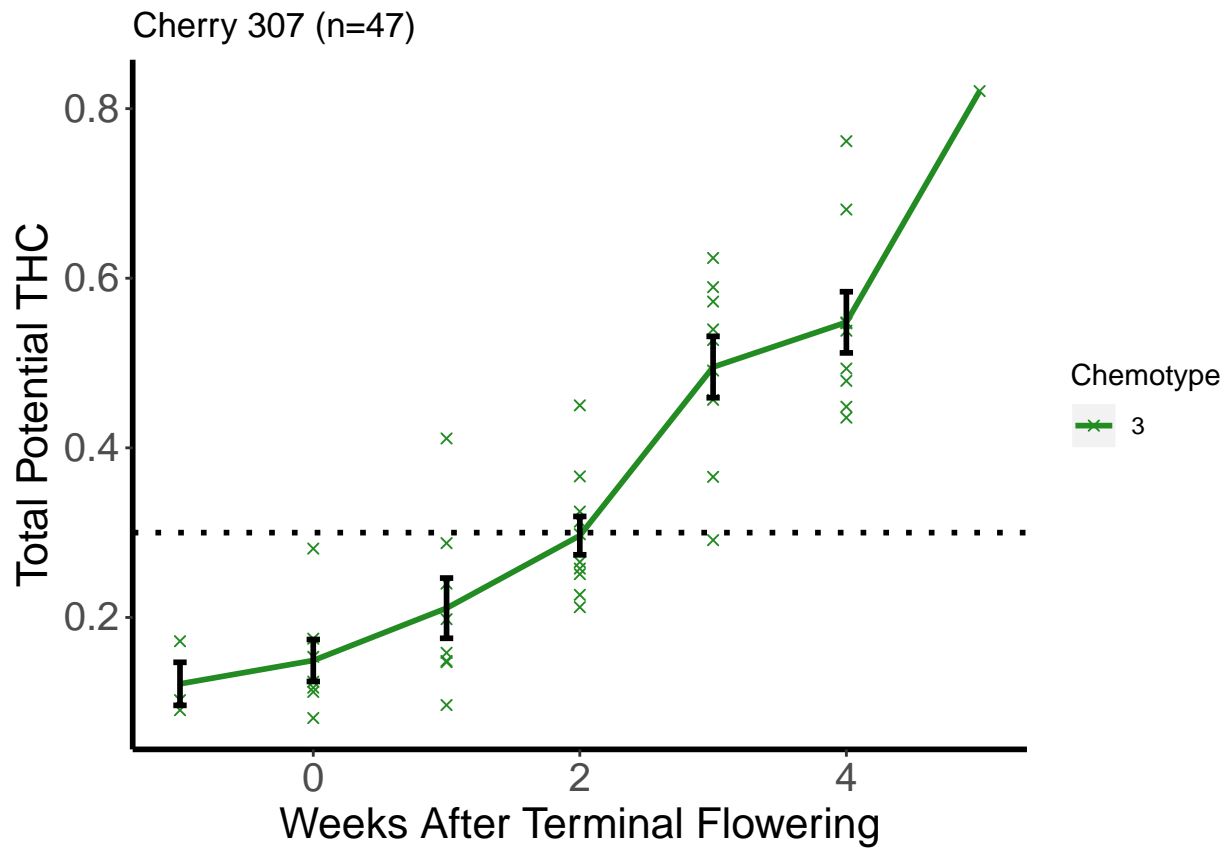
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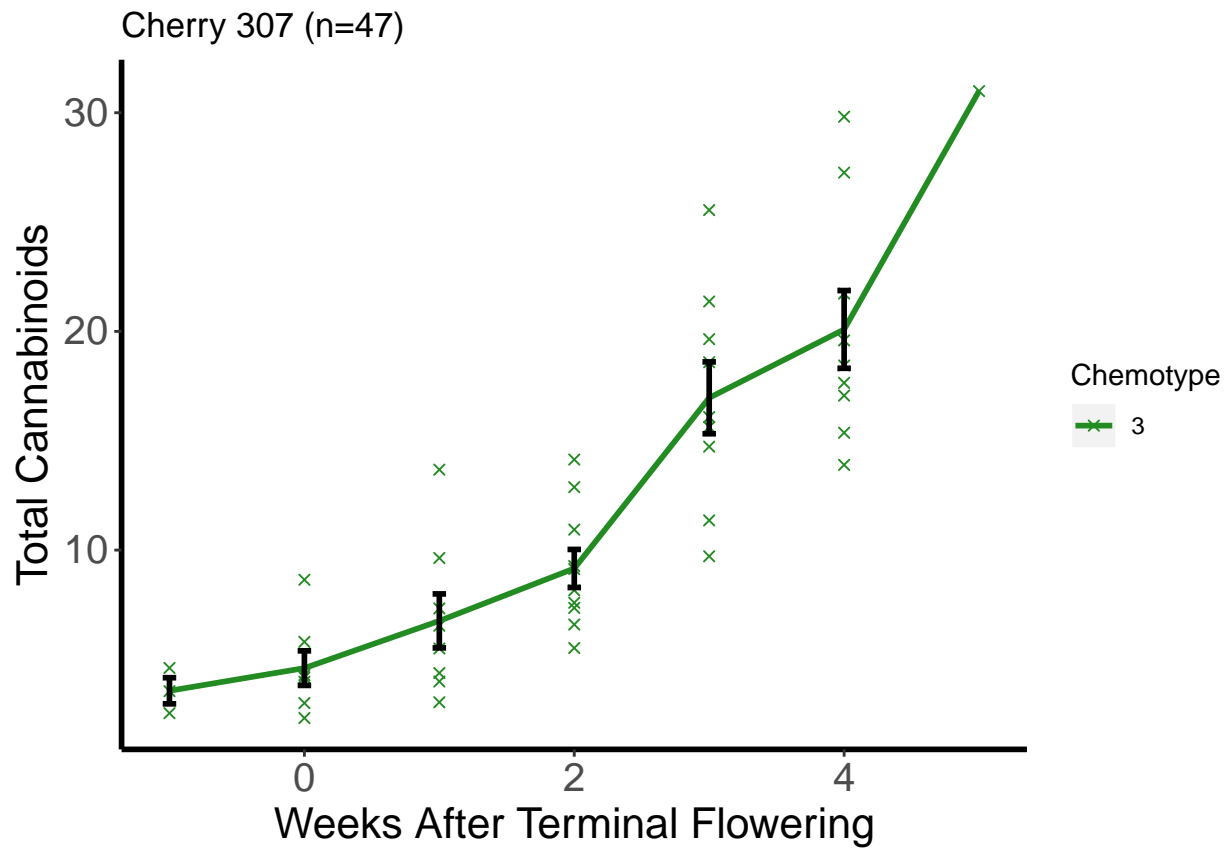
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## No summary function supplied, defaulting to `mean_se()`
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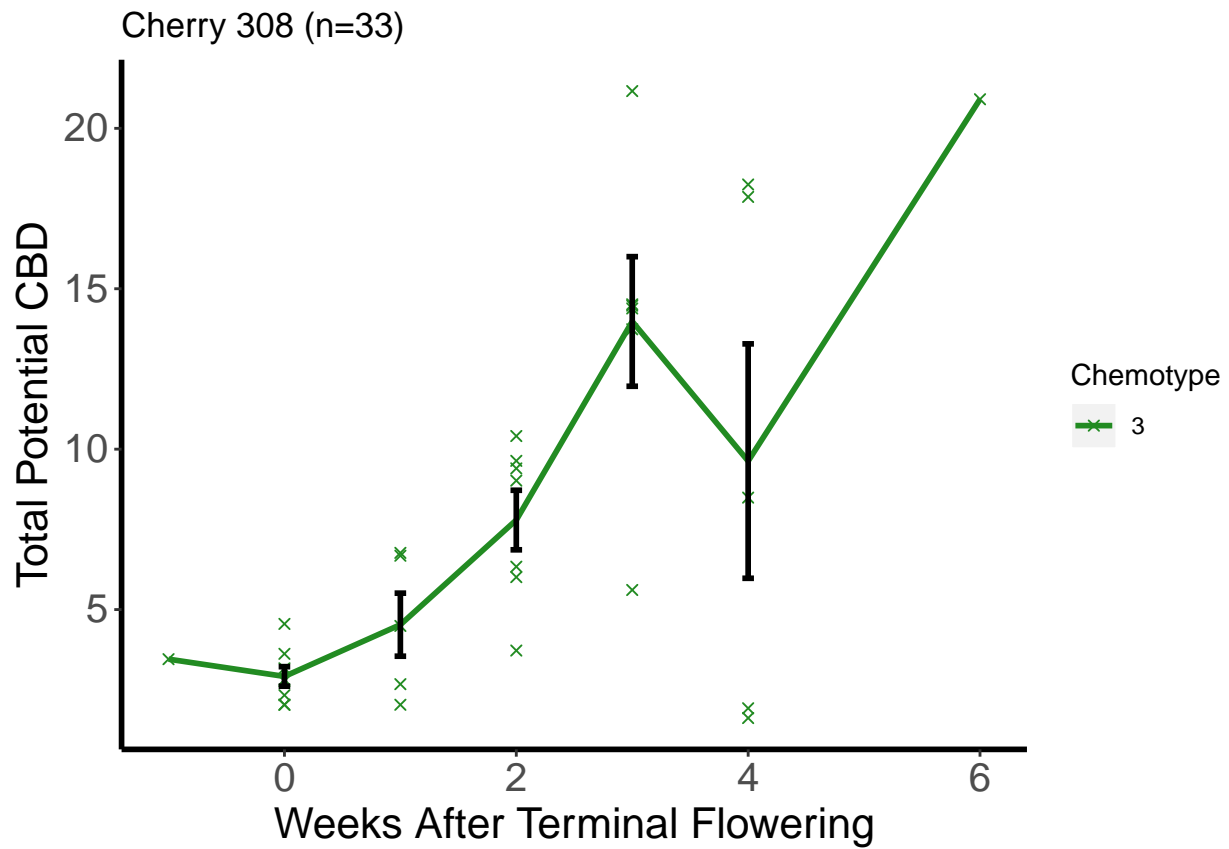
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## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
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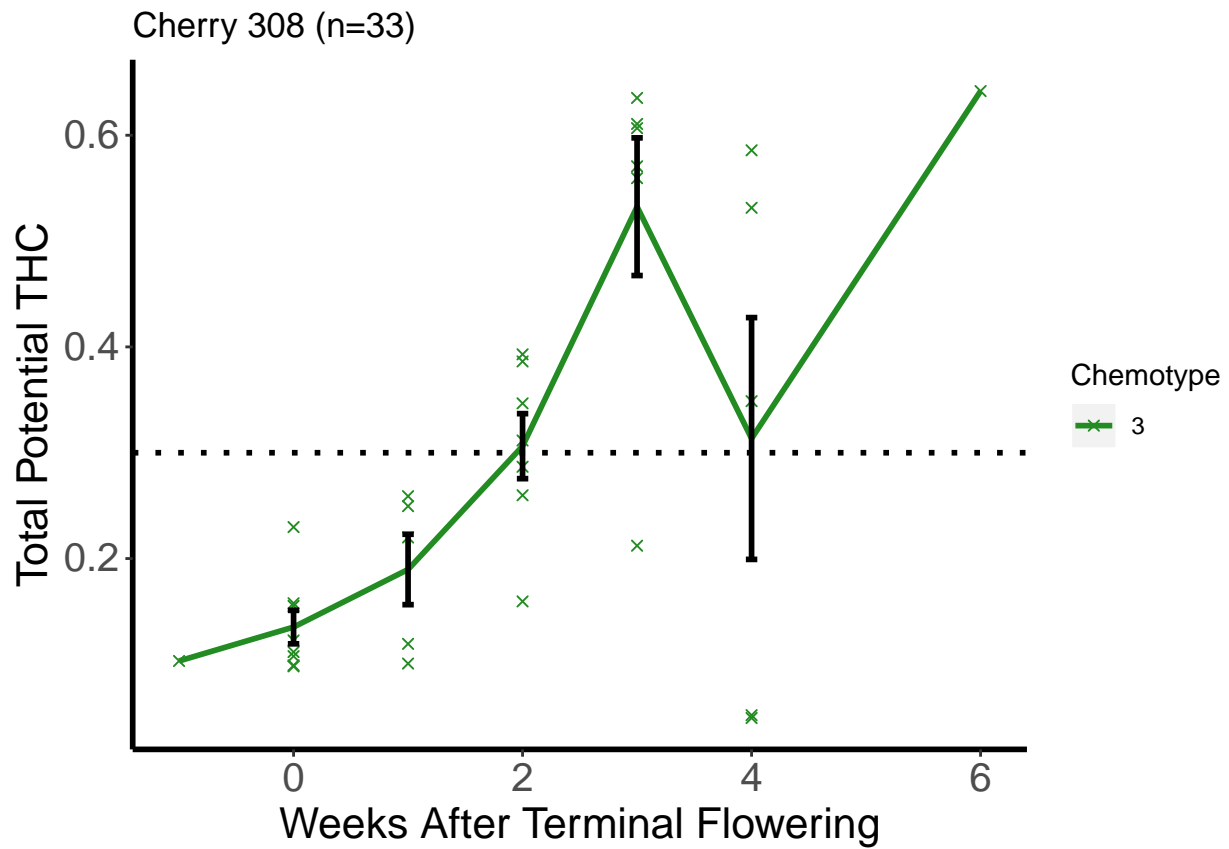
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



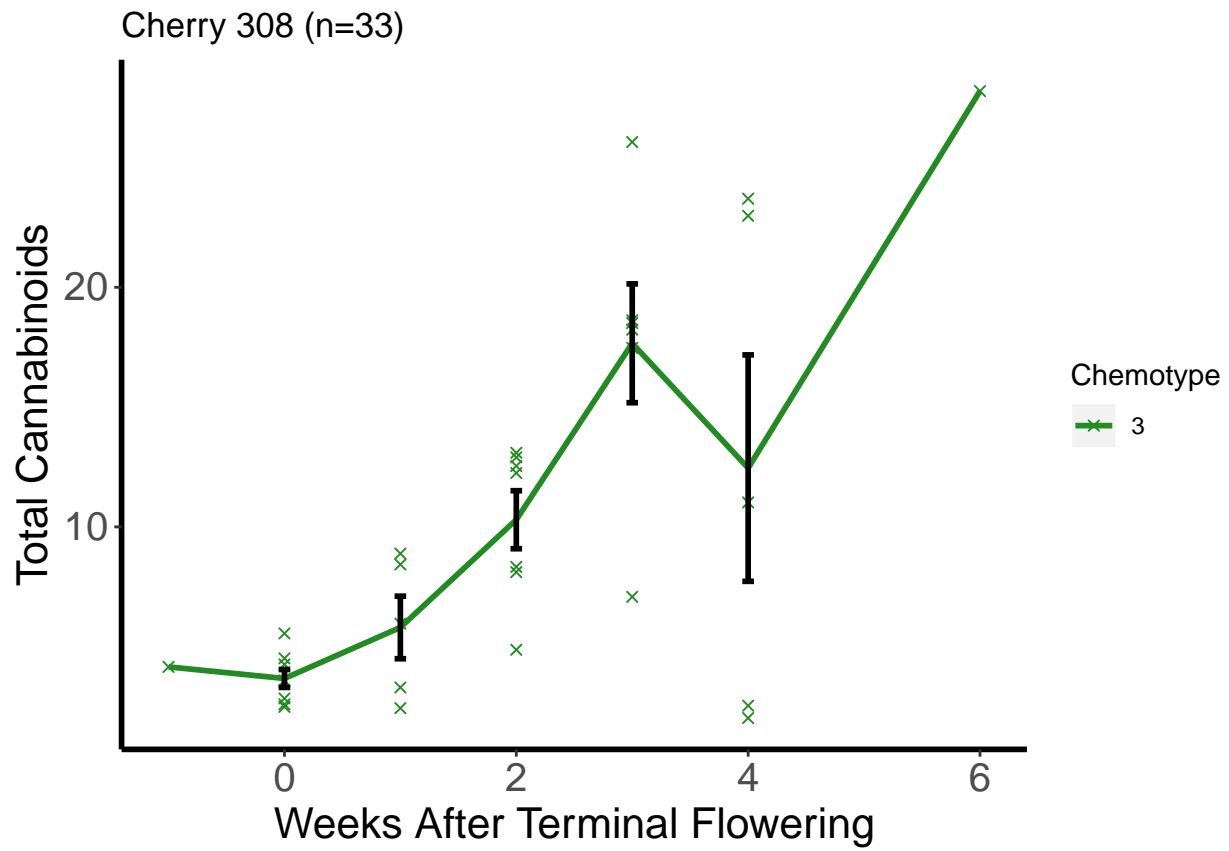
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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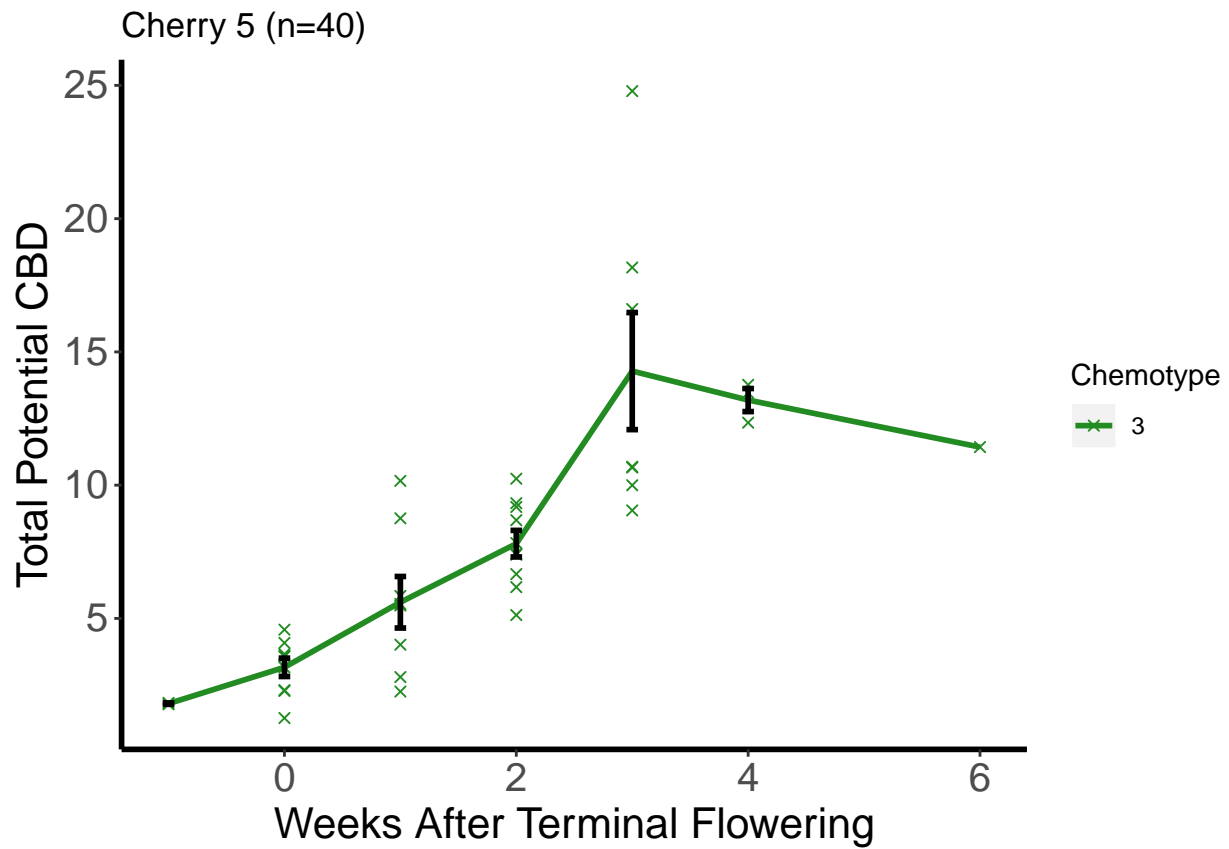
```
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## No summary function supplied, defaulting to `mean_se()`
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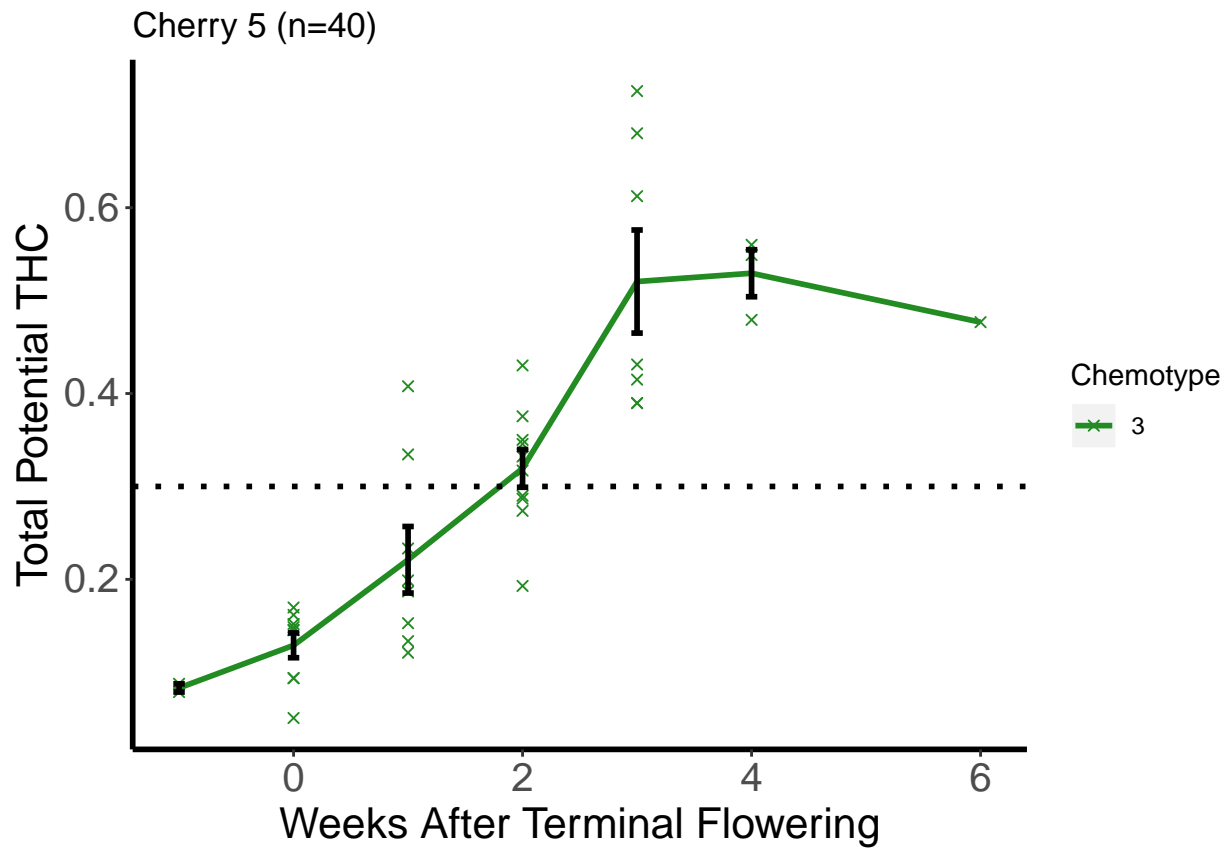
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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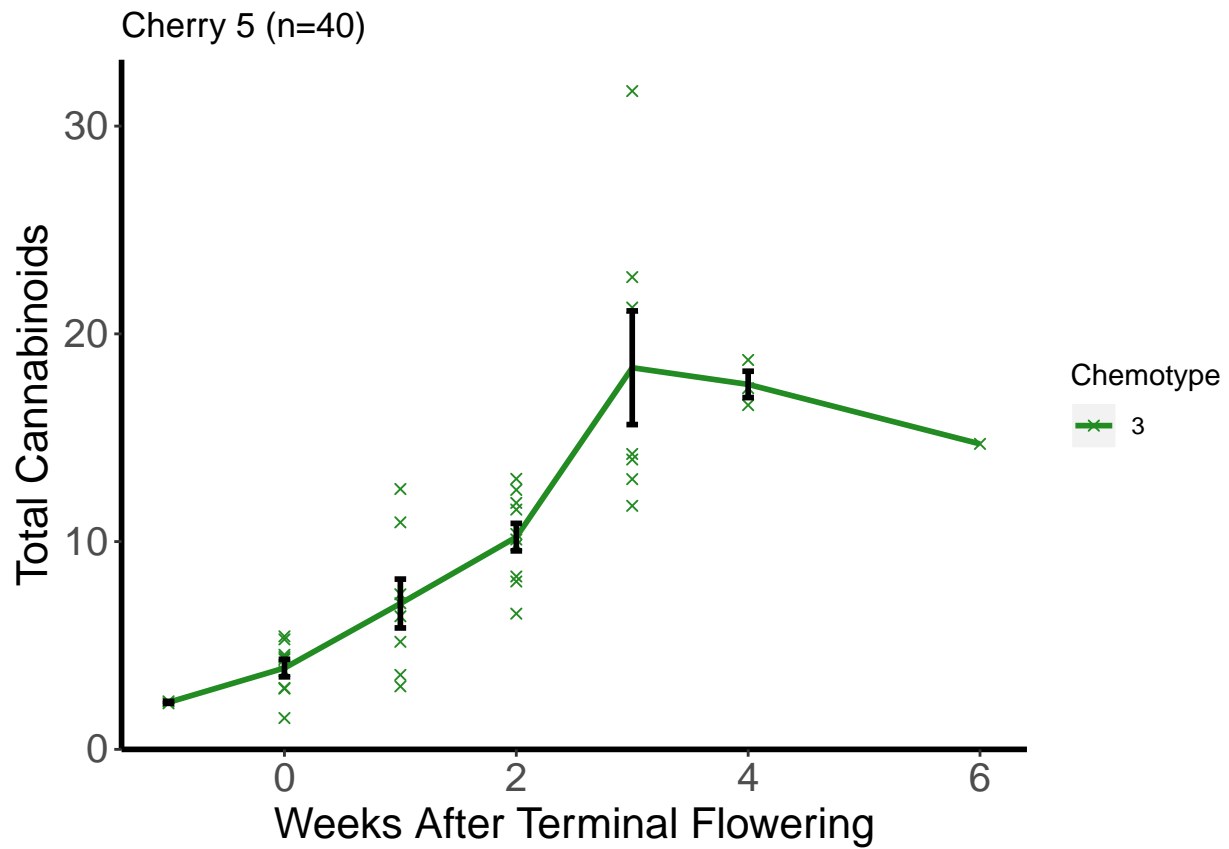
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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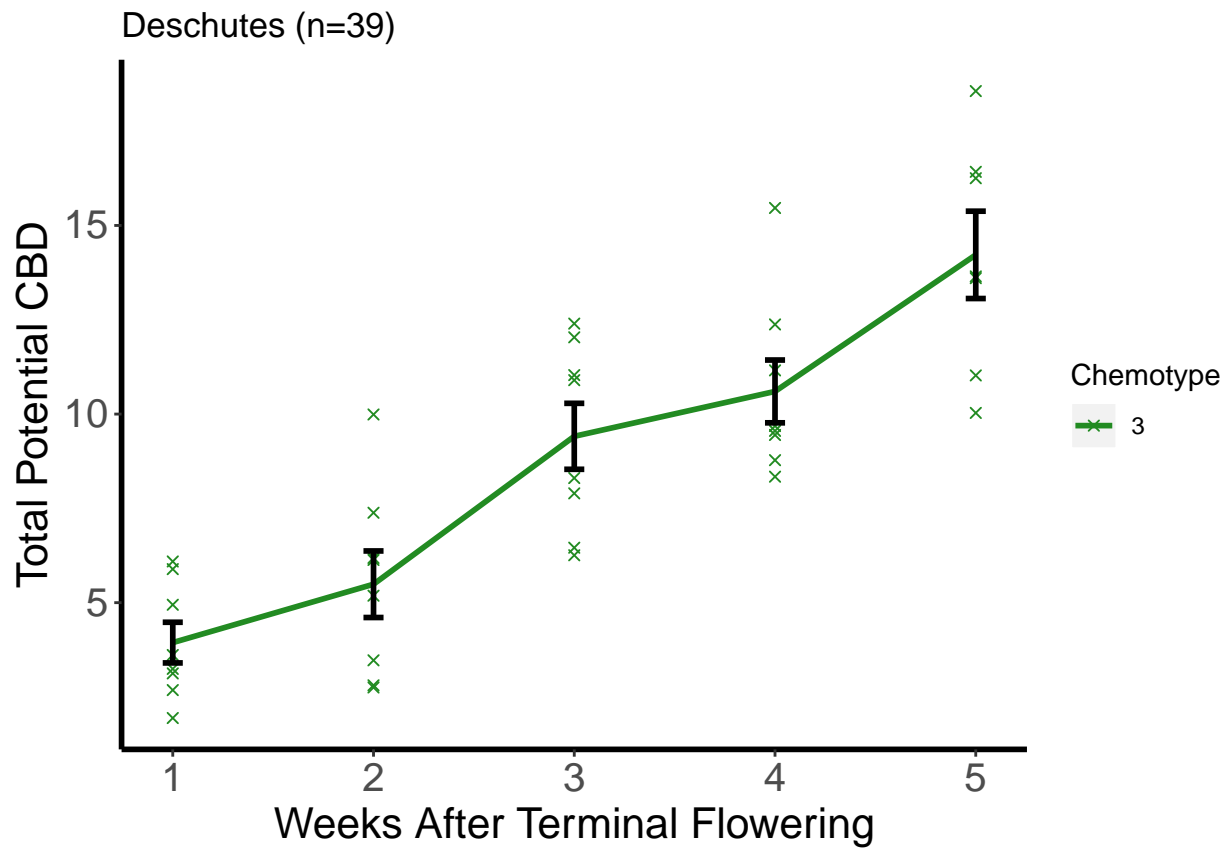
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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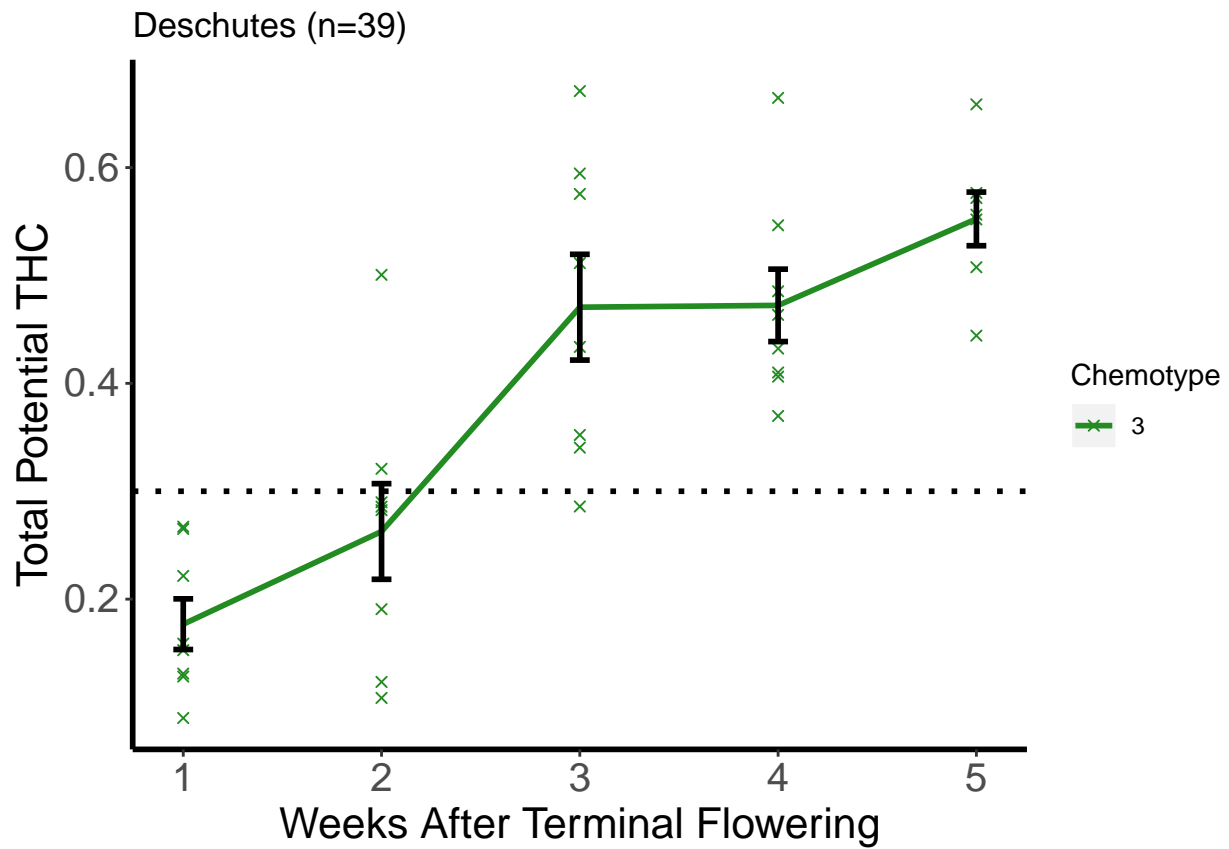
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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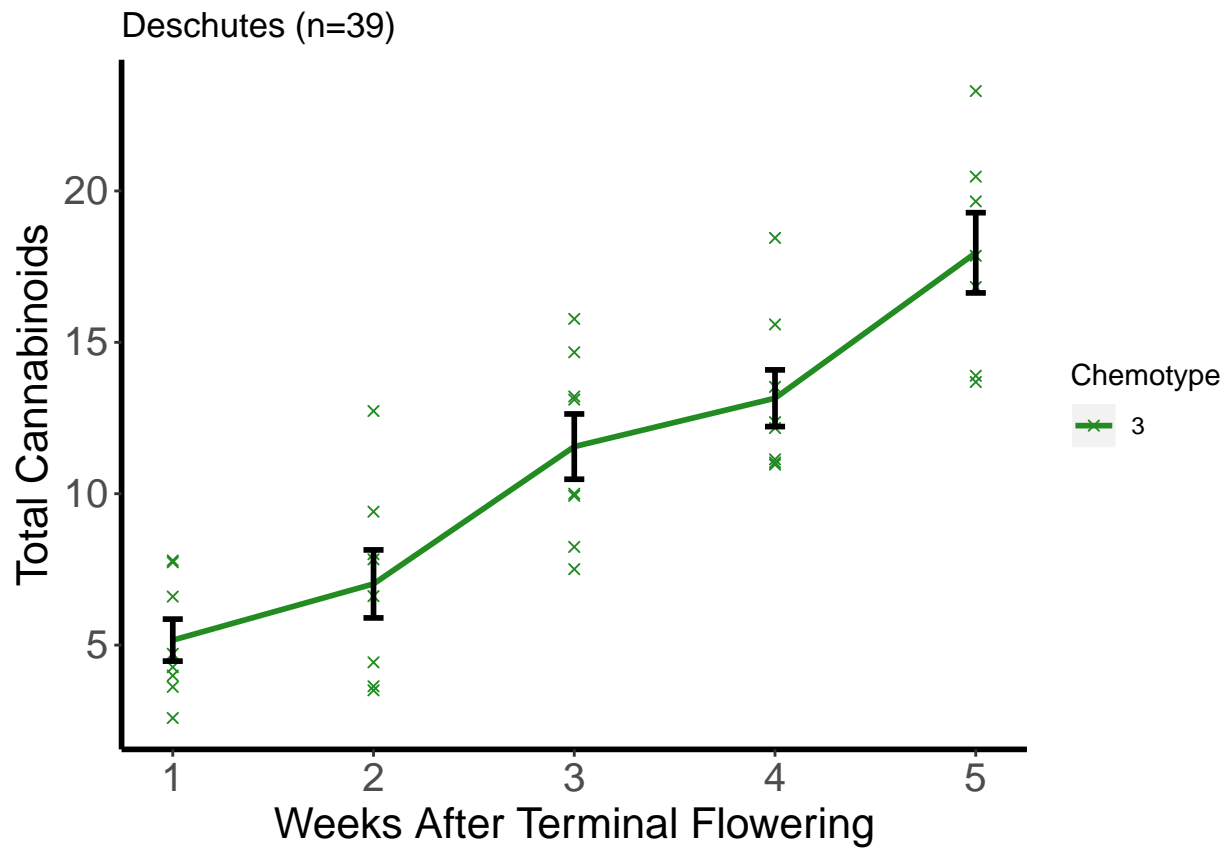
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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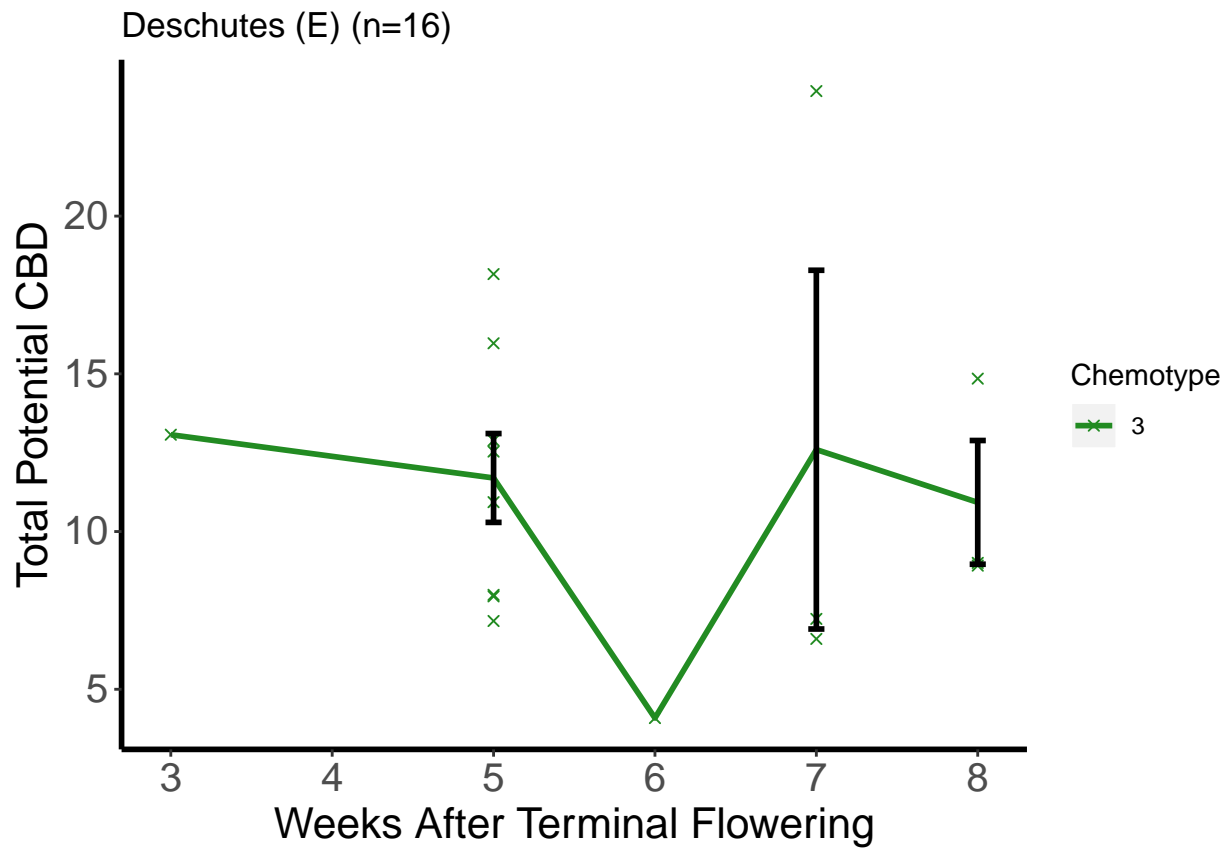
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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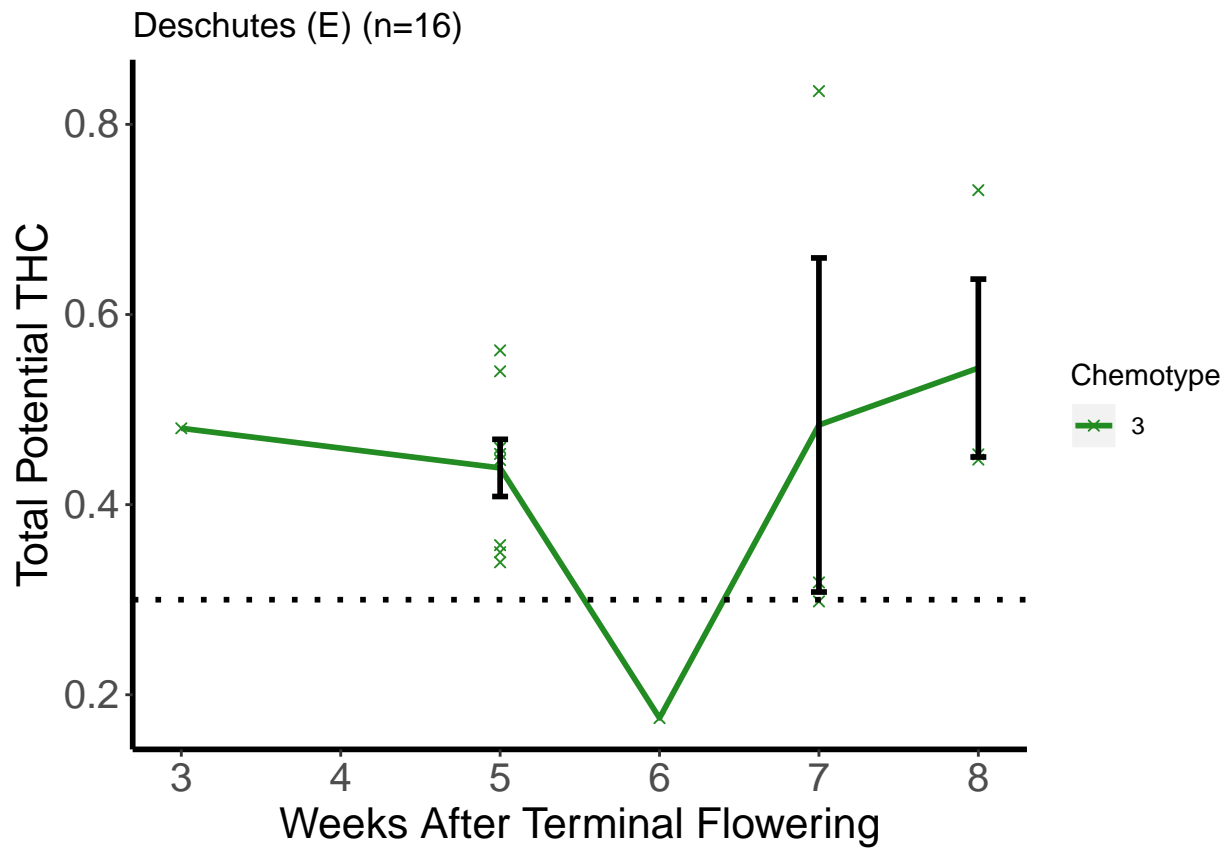
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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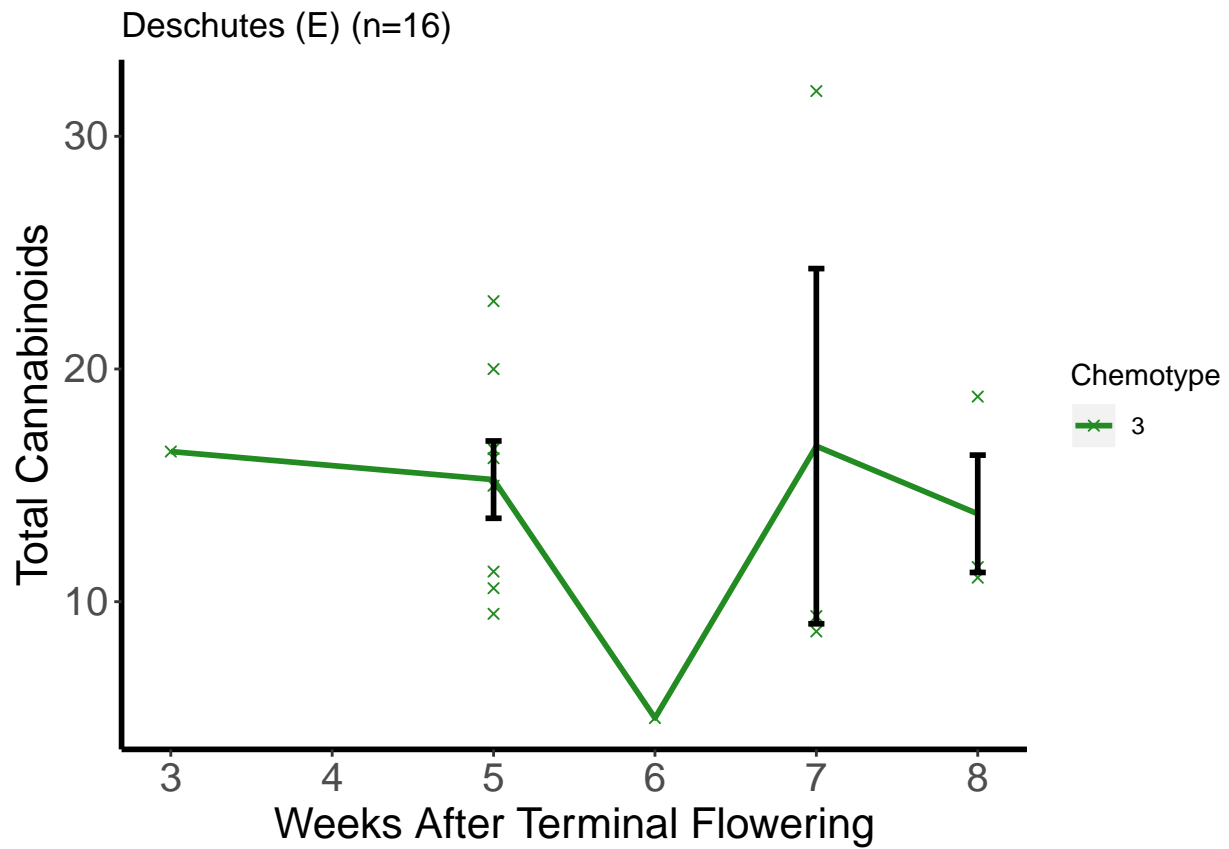
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
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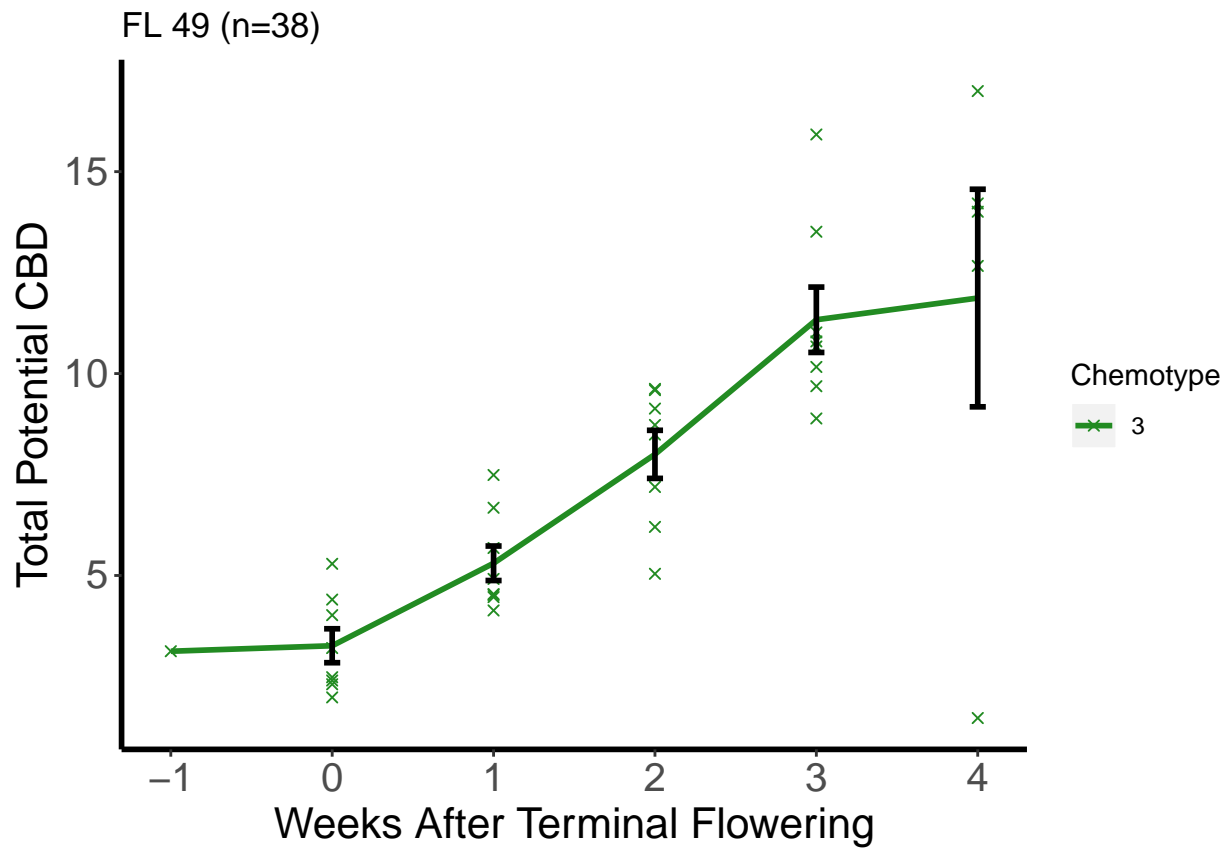
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



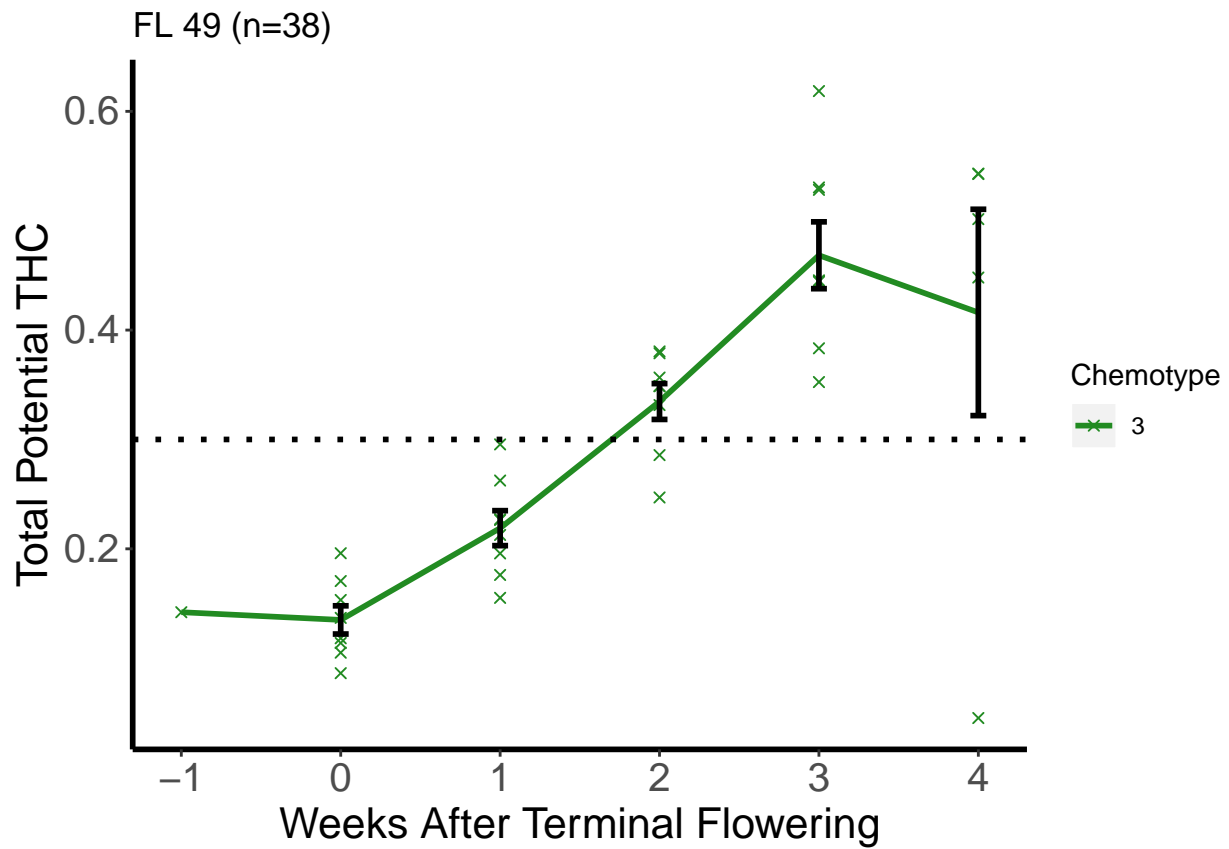
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



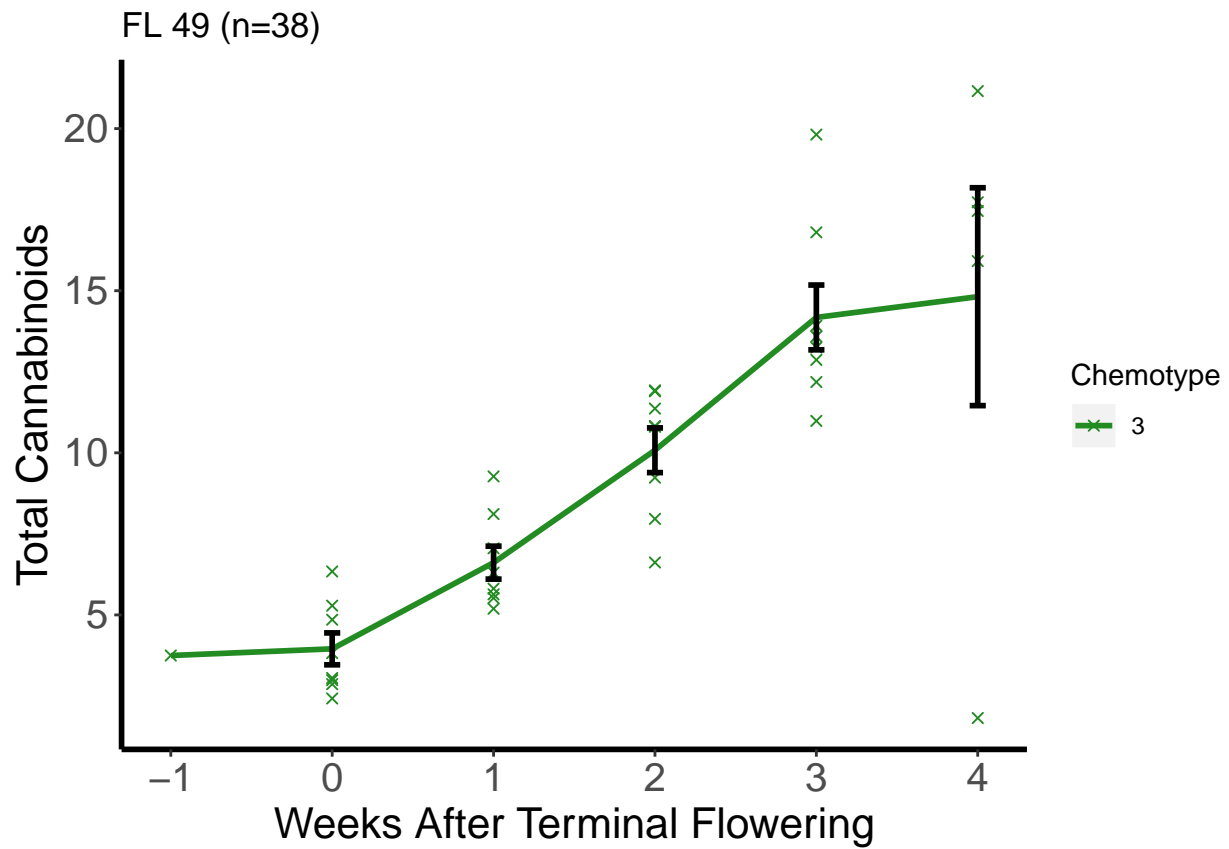
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## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

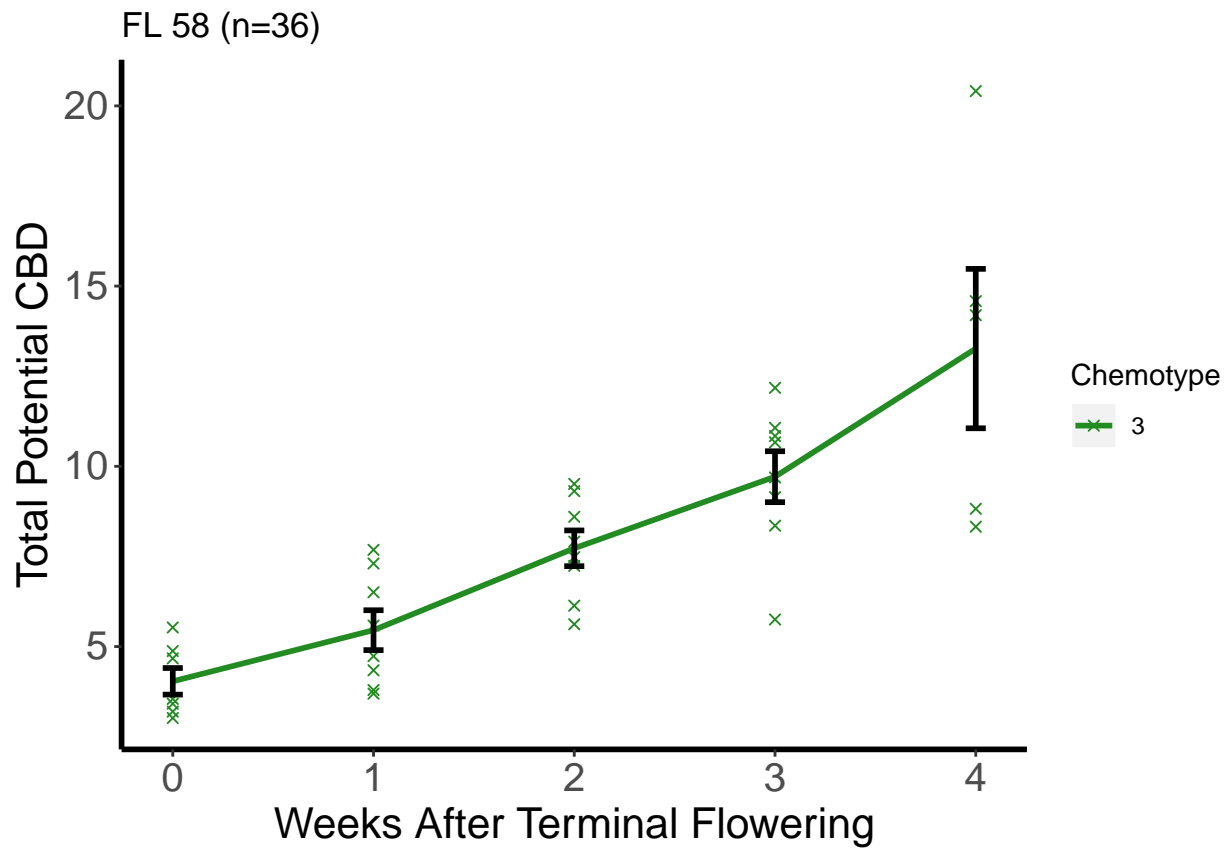
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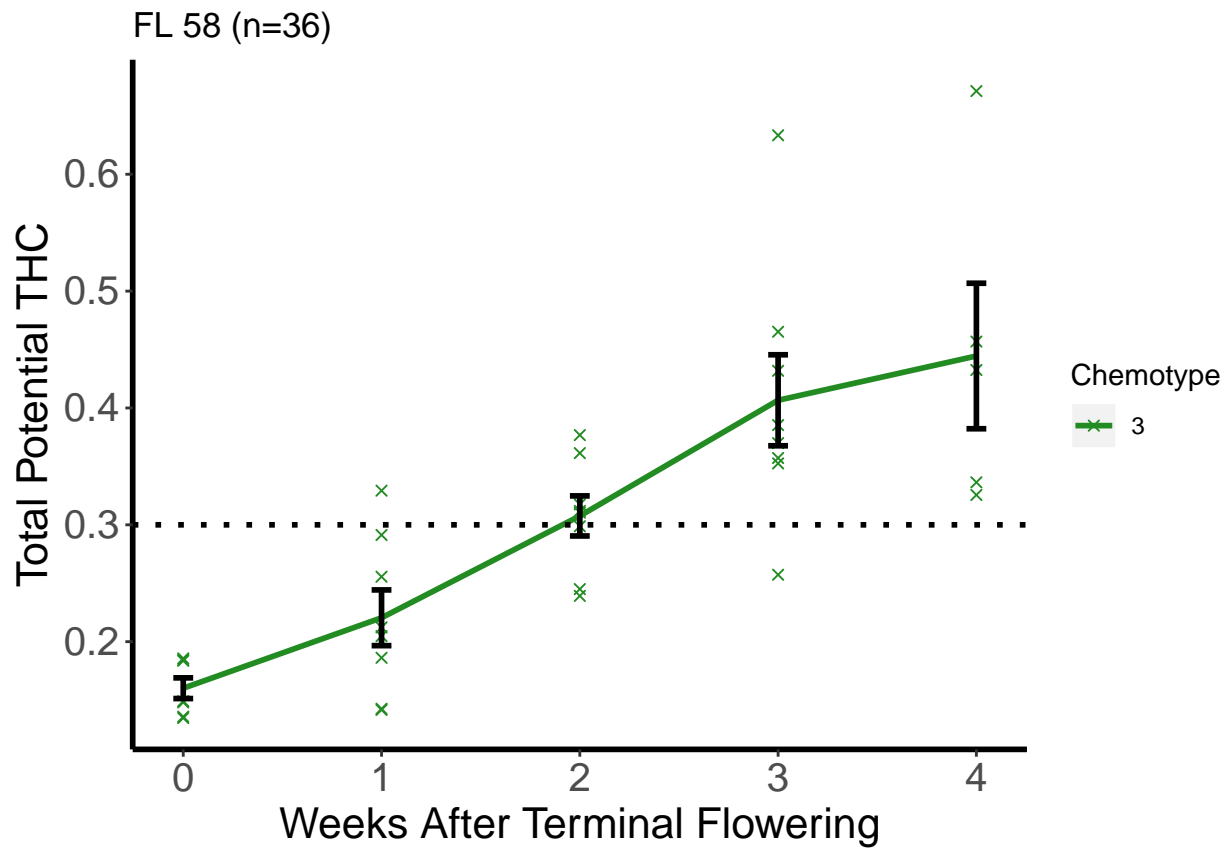
```
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## No summary function supplied, defaulting to `mean_se()`
```



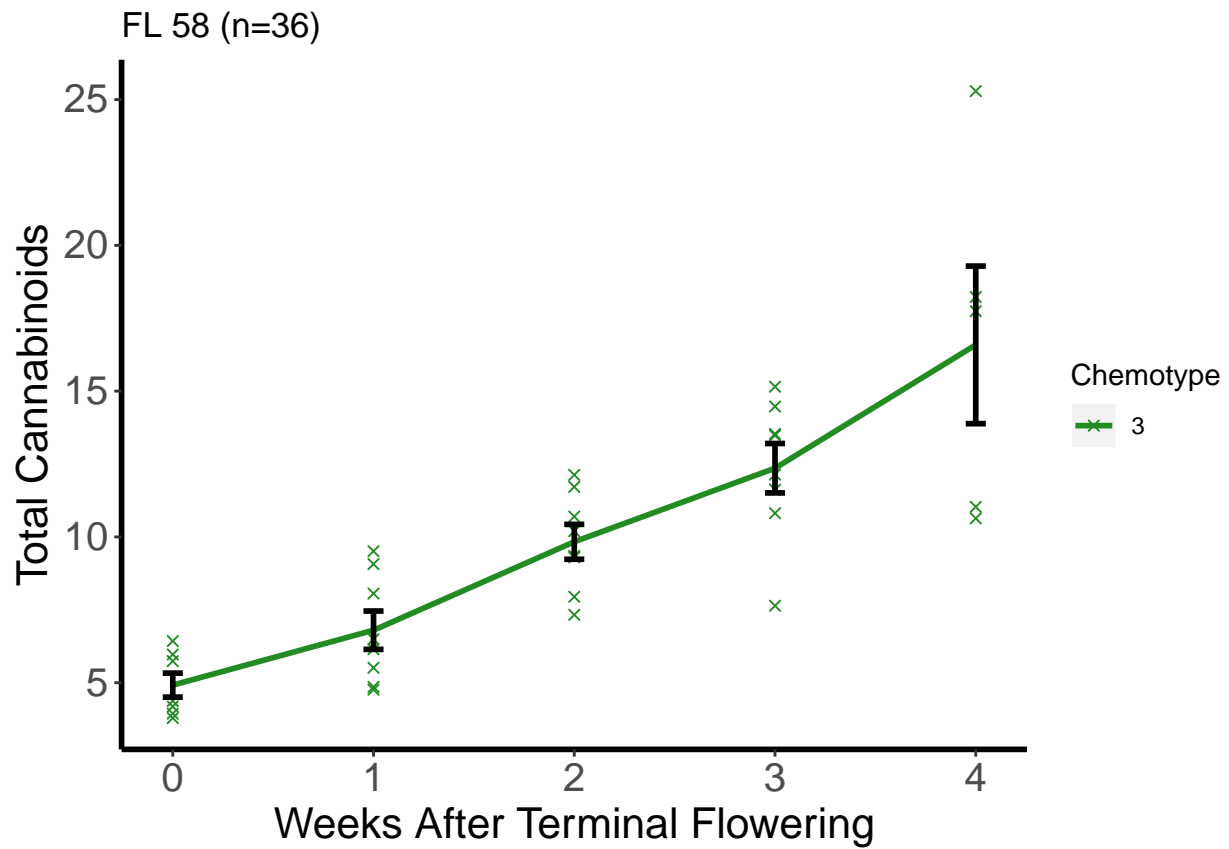
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



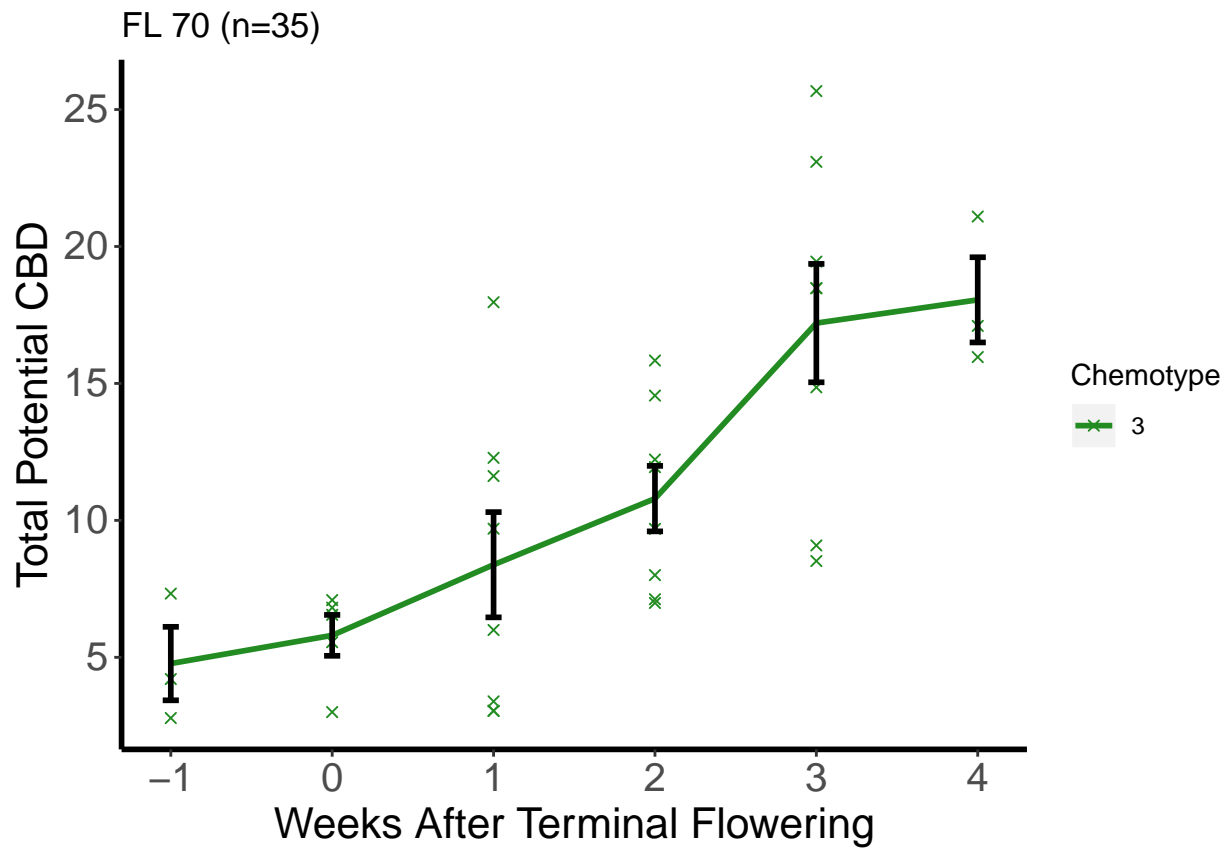
```
## No summary function supplied, defaulting to `mean_se()`  
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```



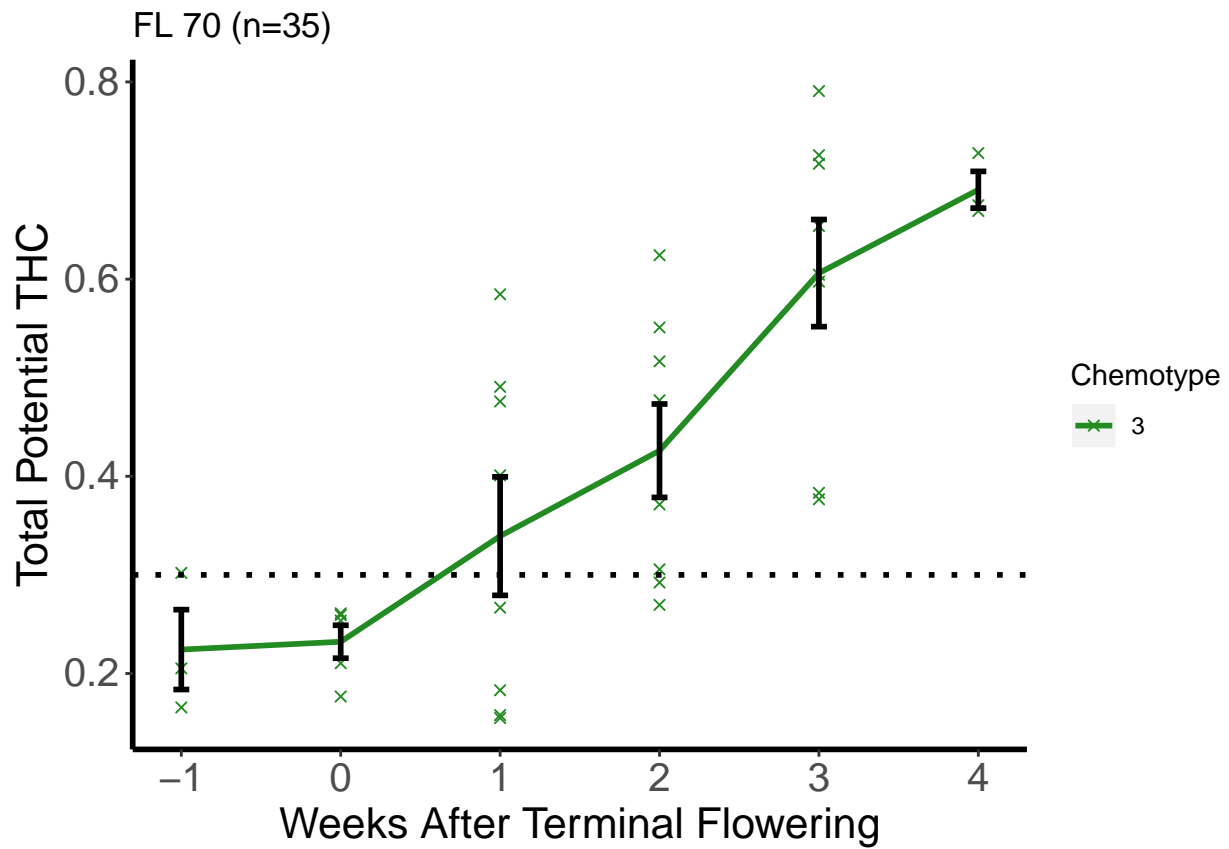
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



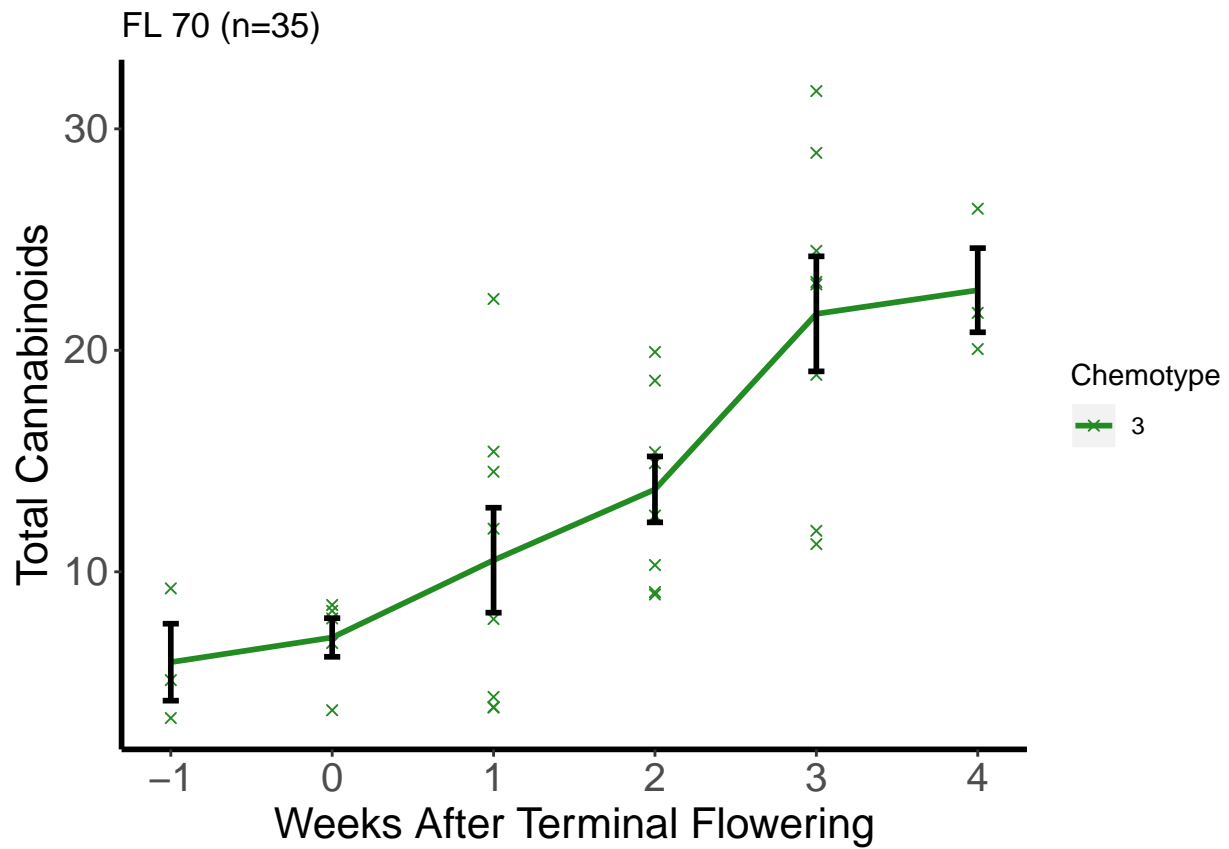
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



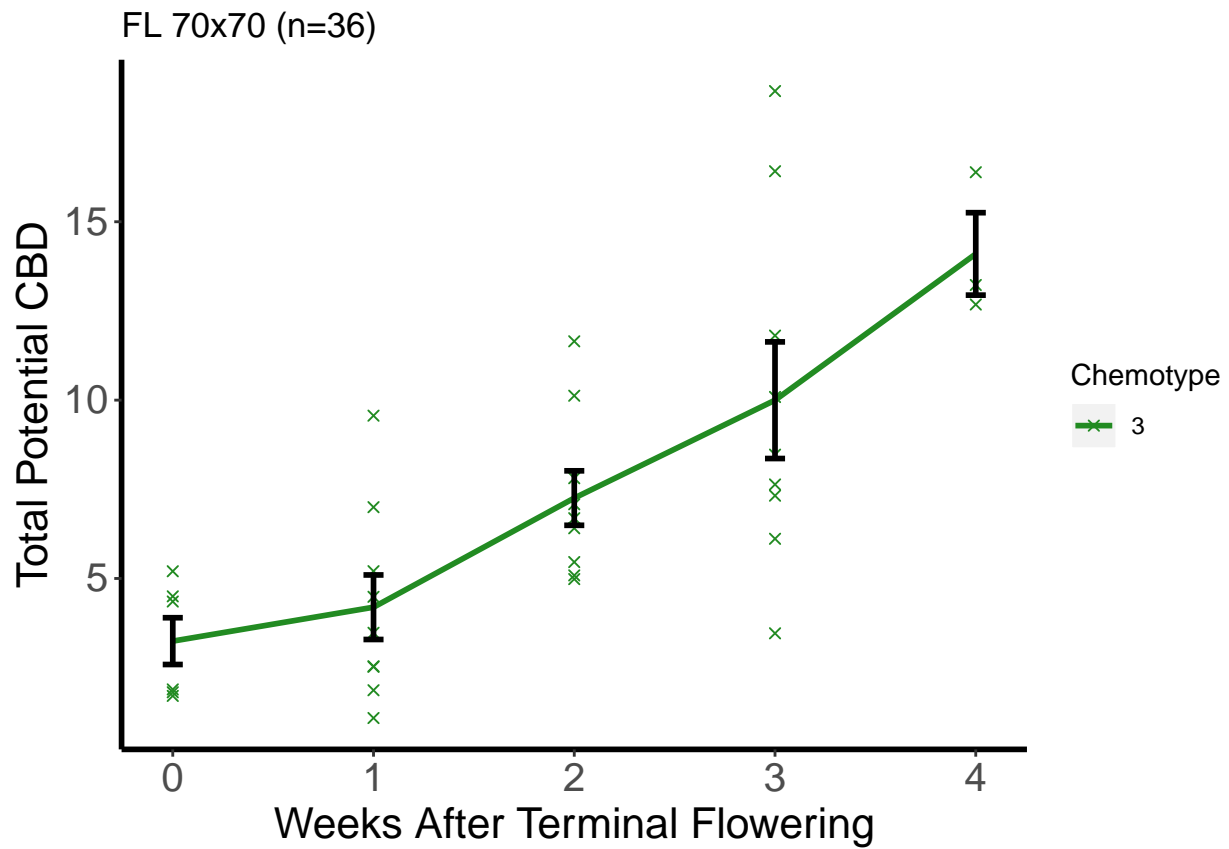
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



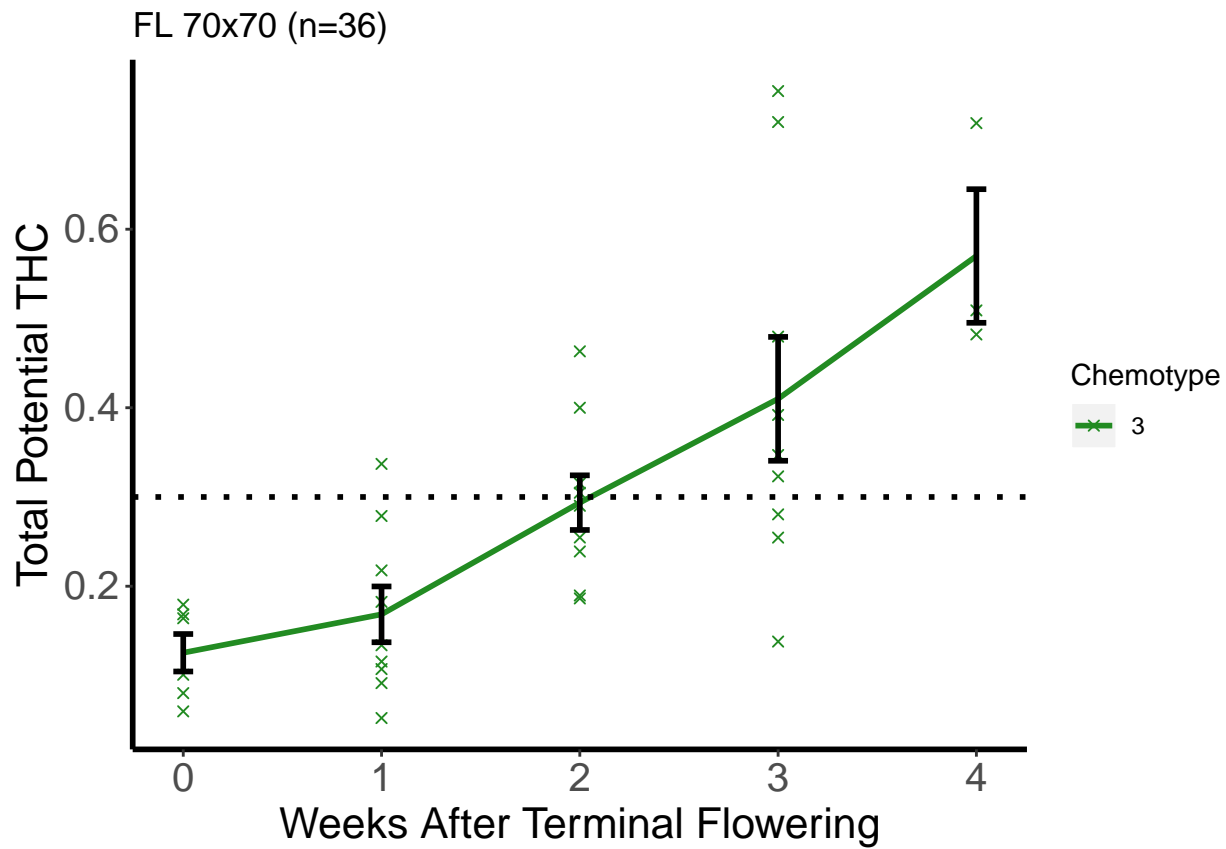
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

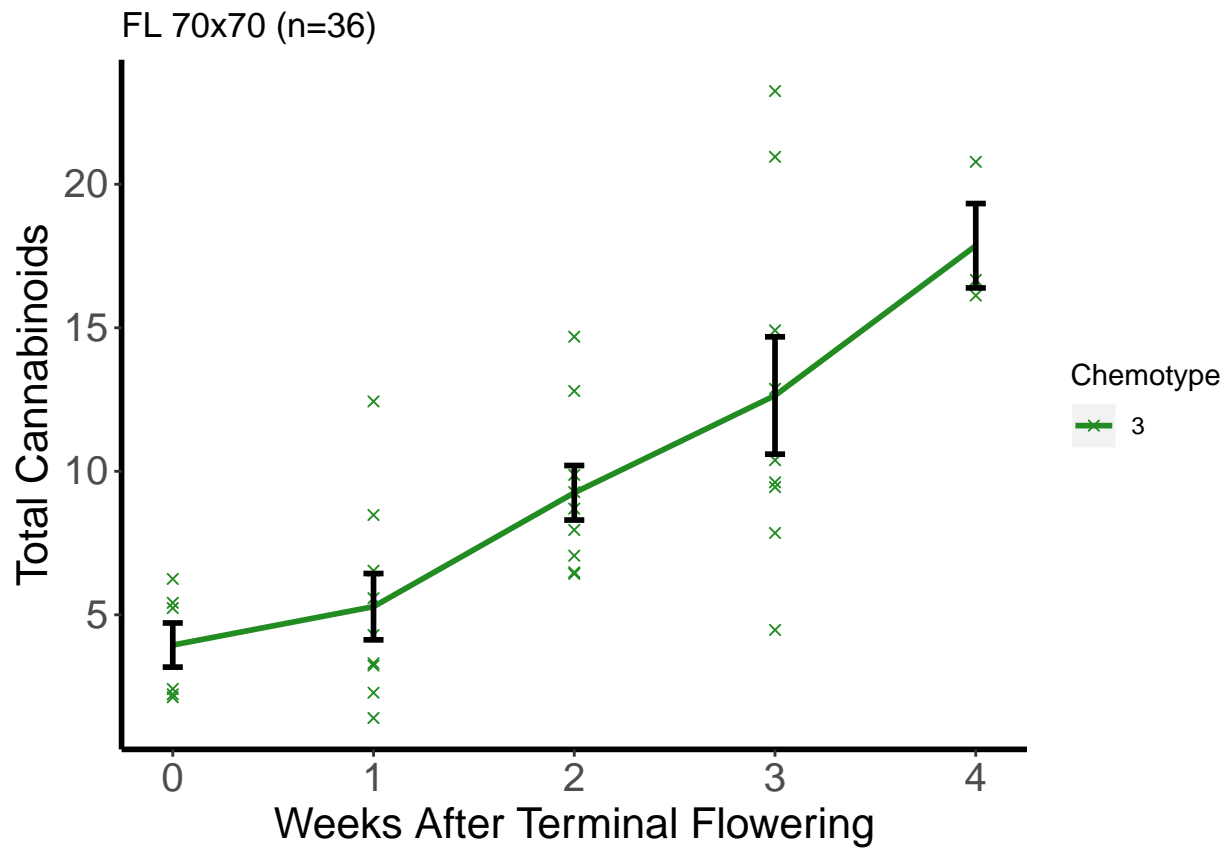
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



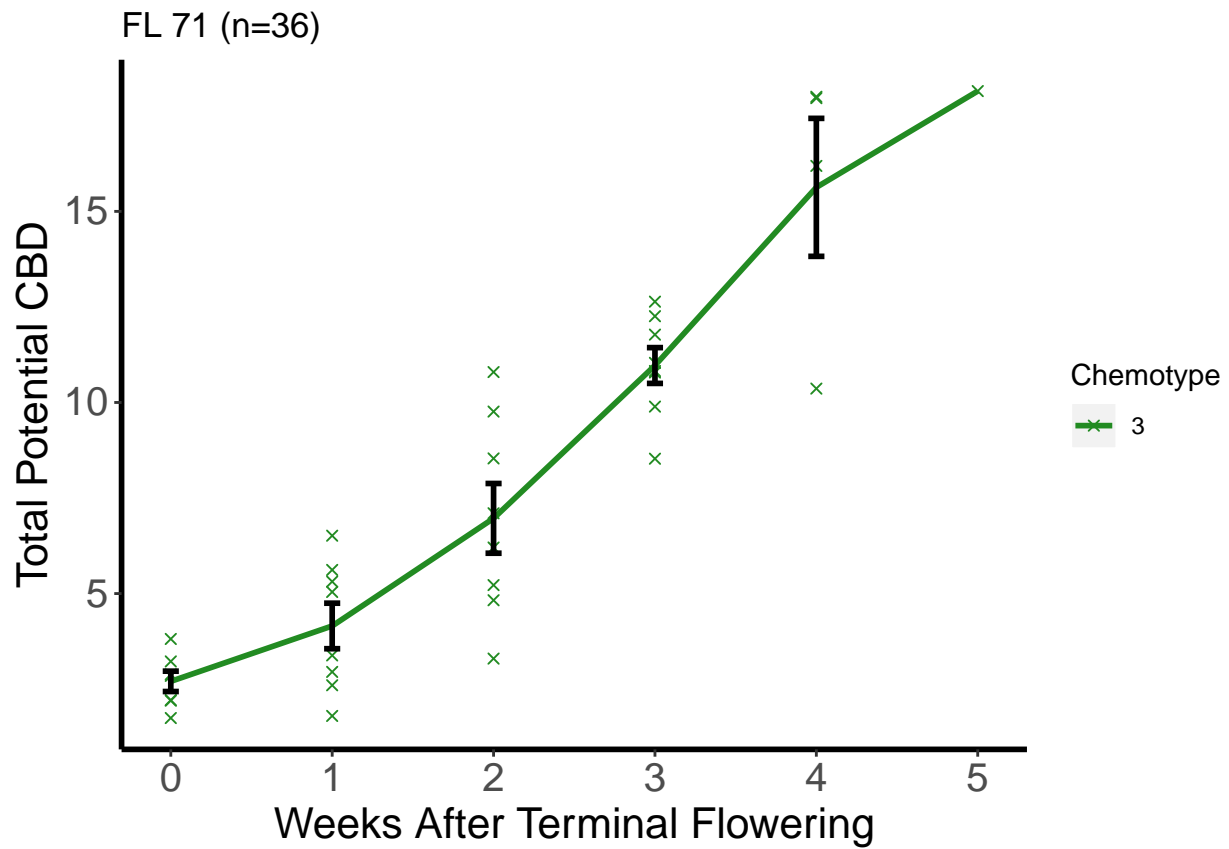
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



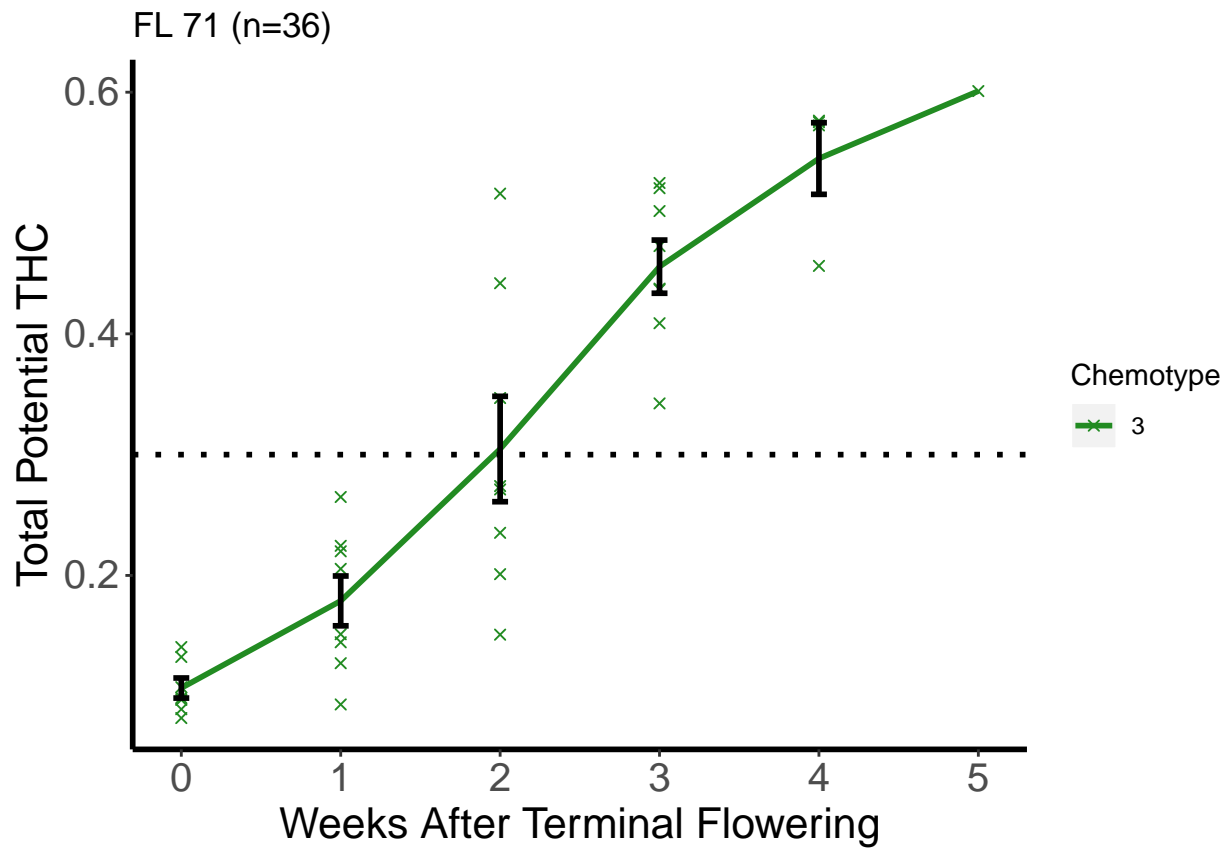
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



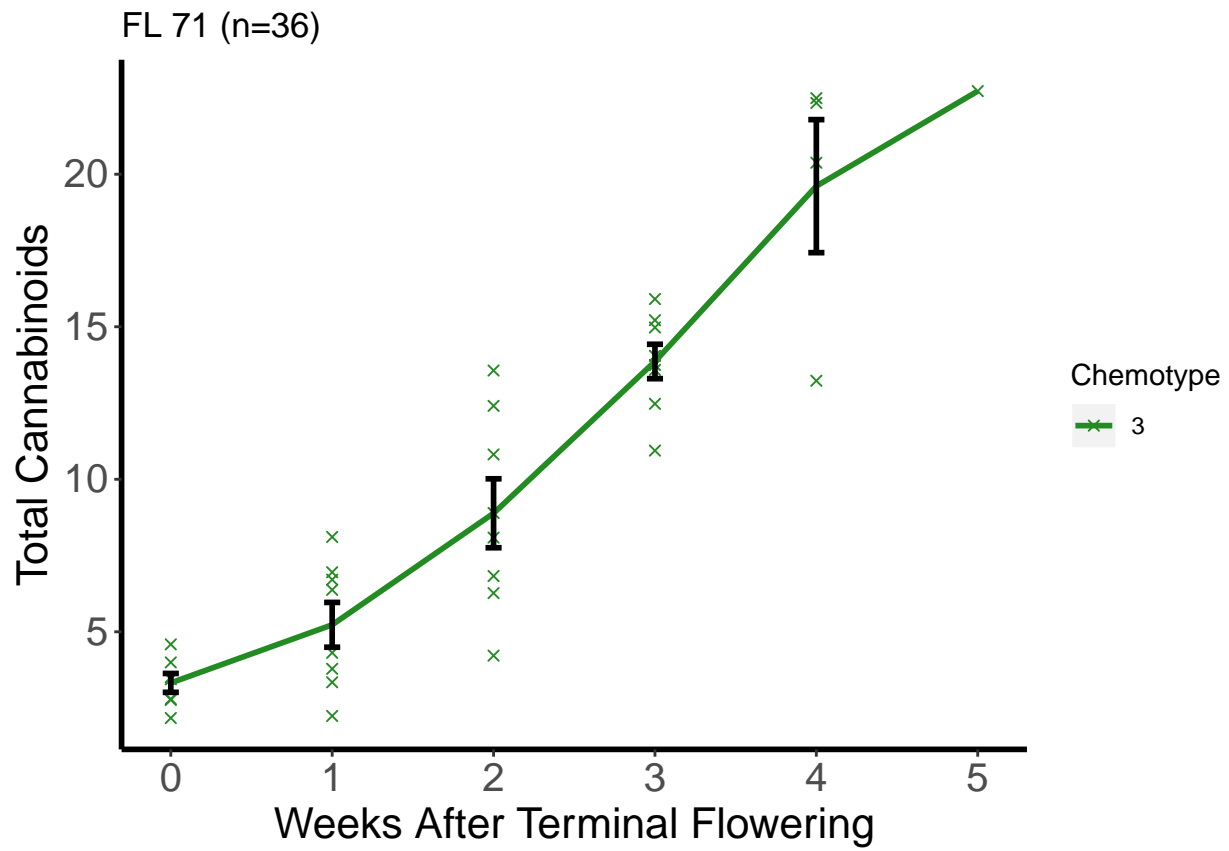
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



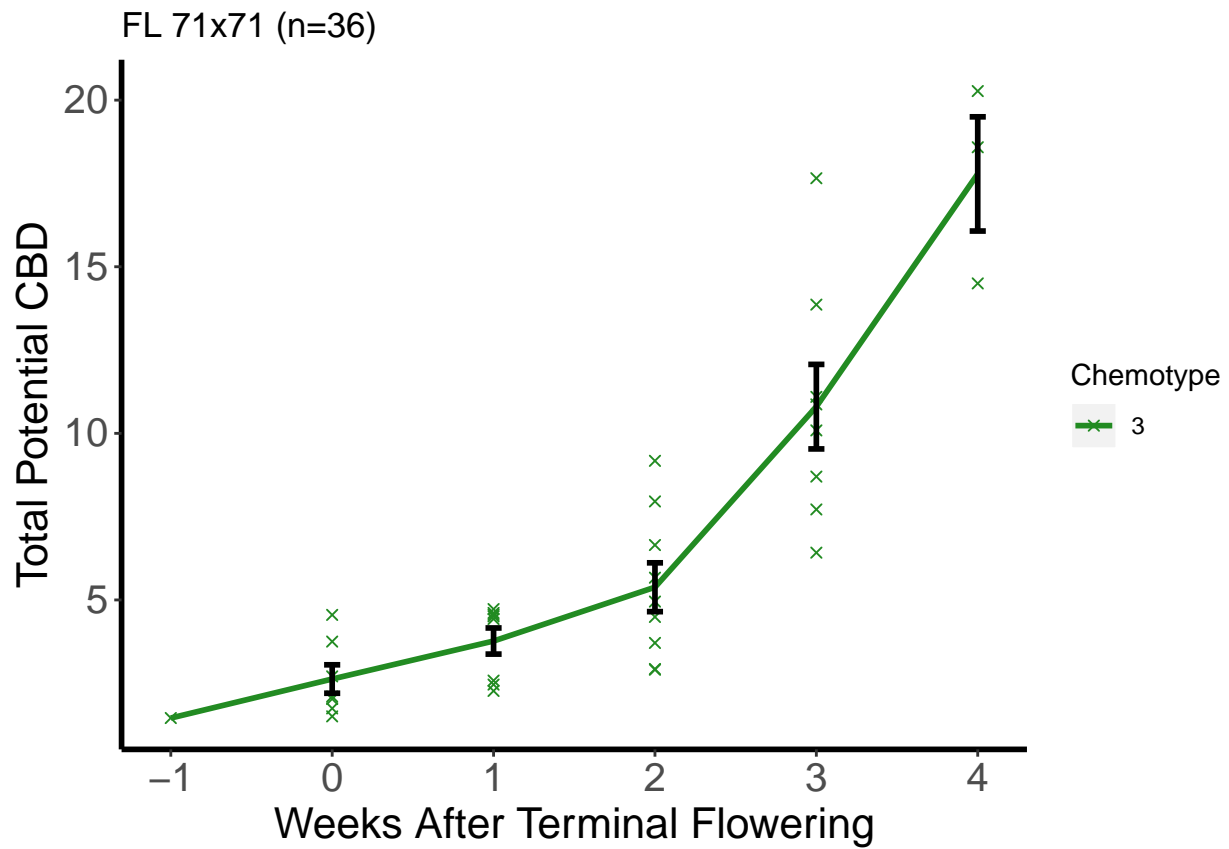
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



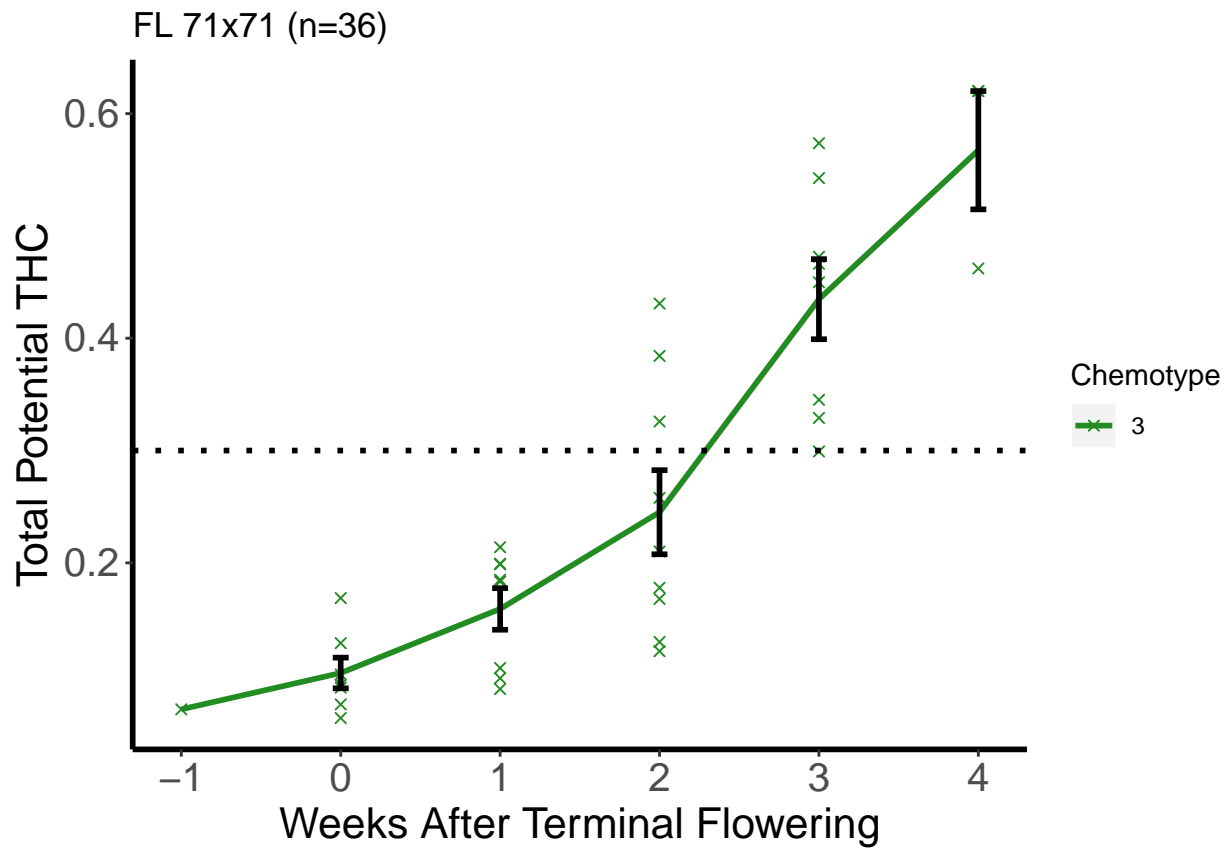
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



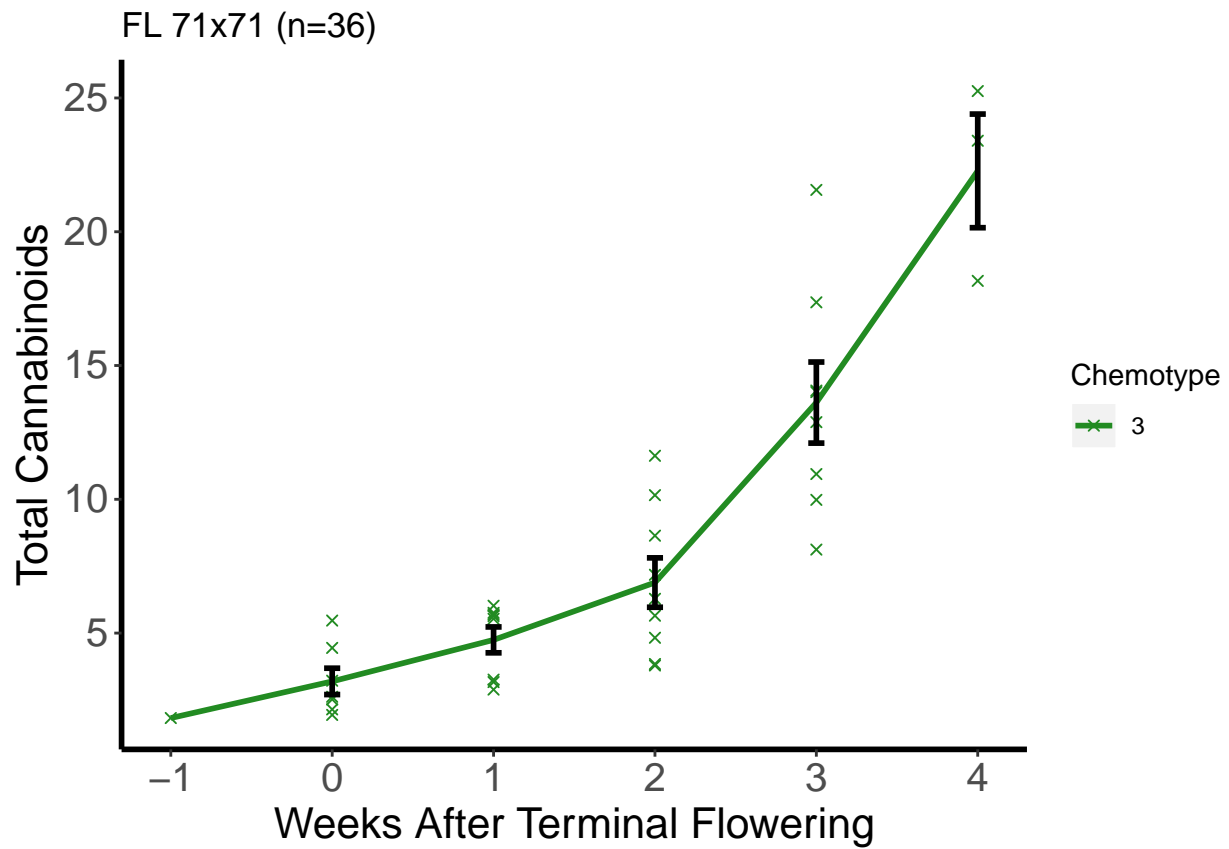
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



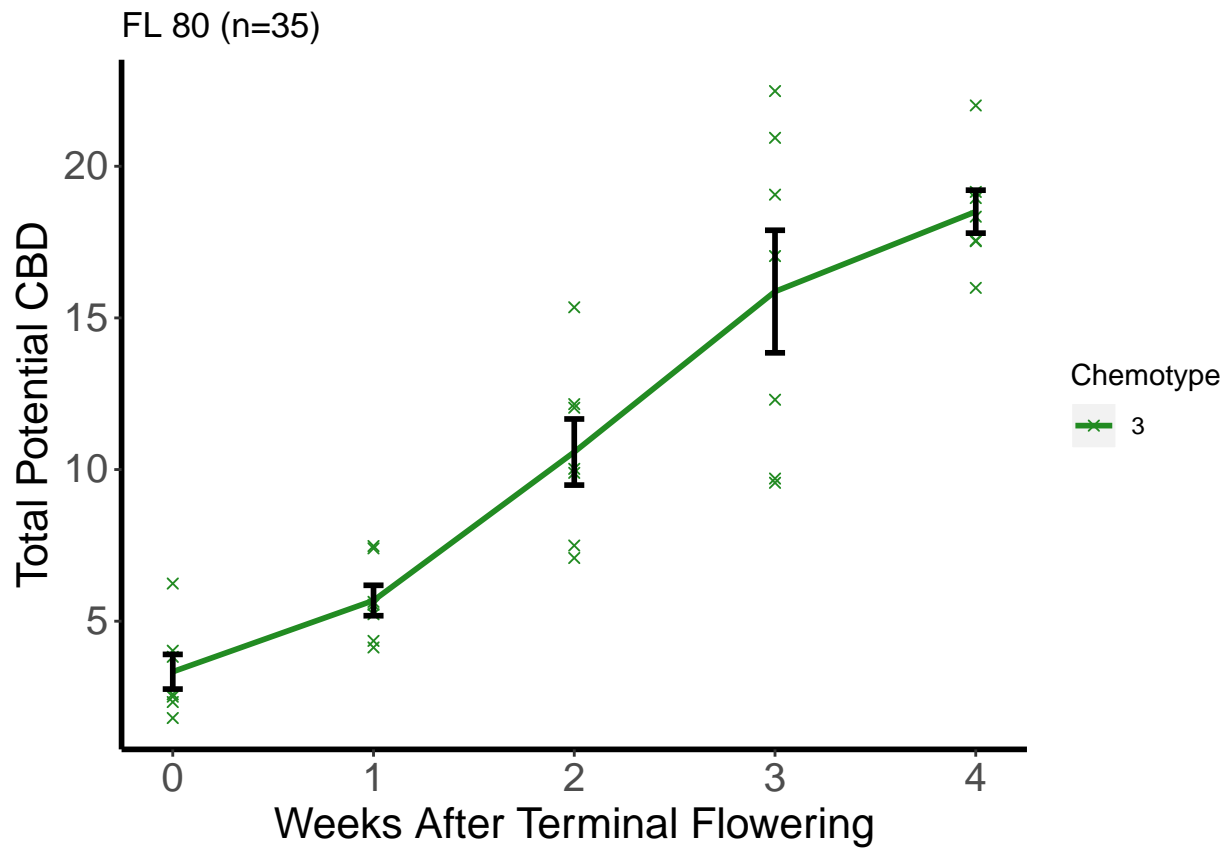
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

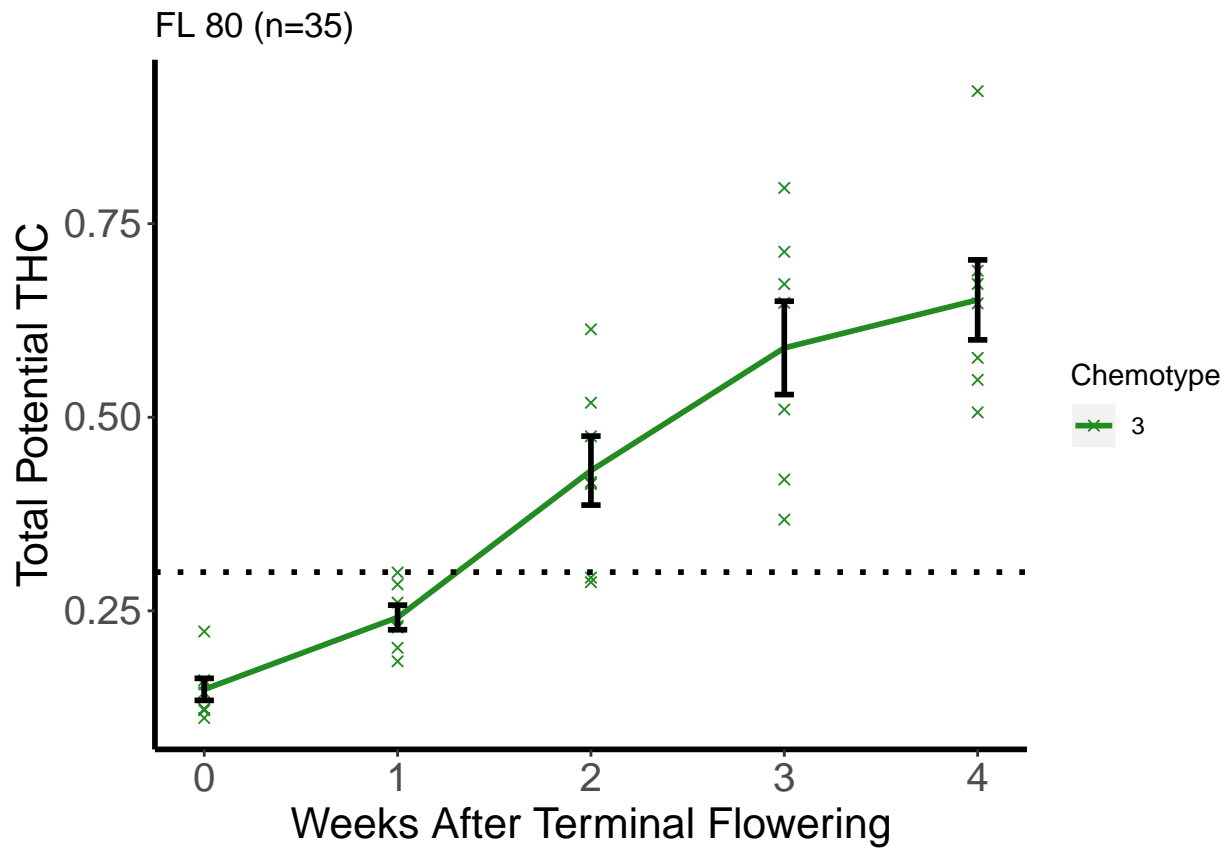
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



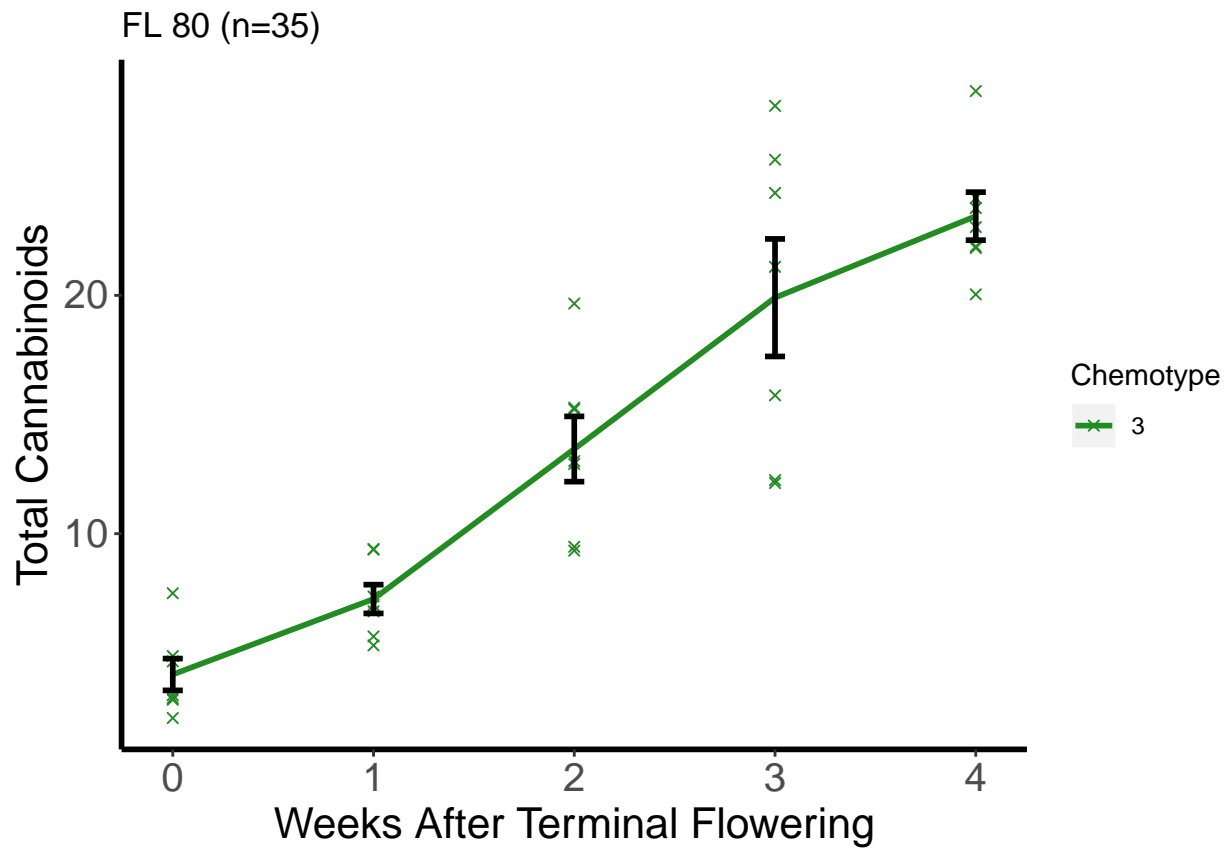
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



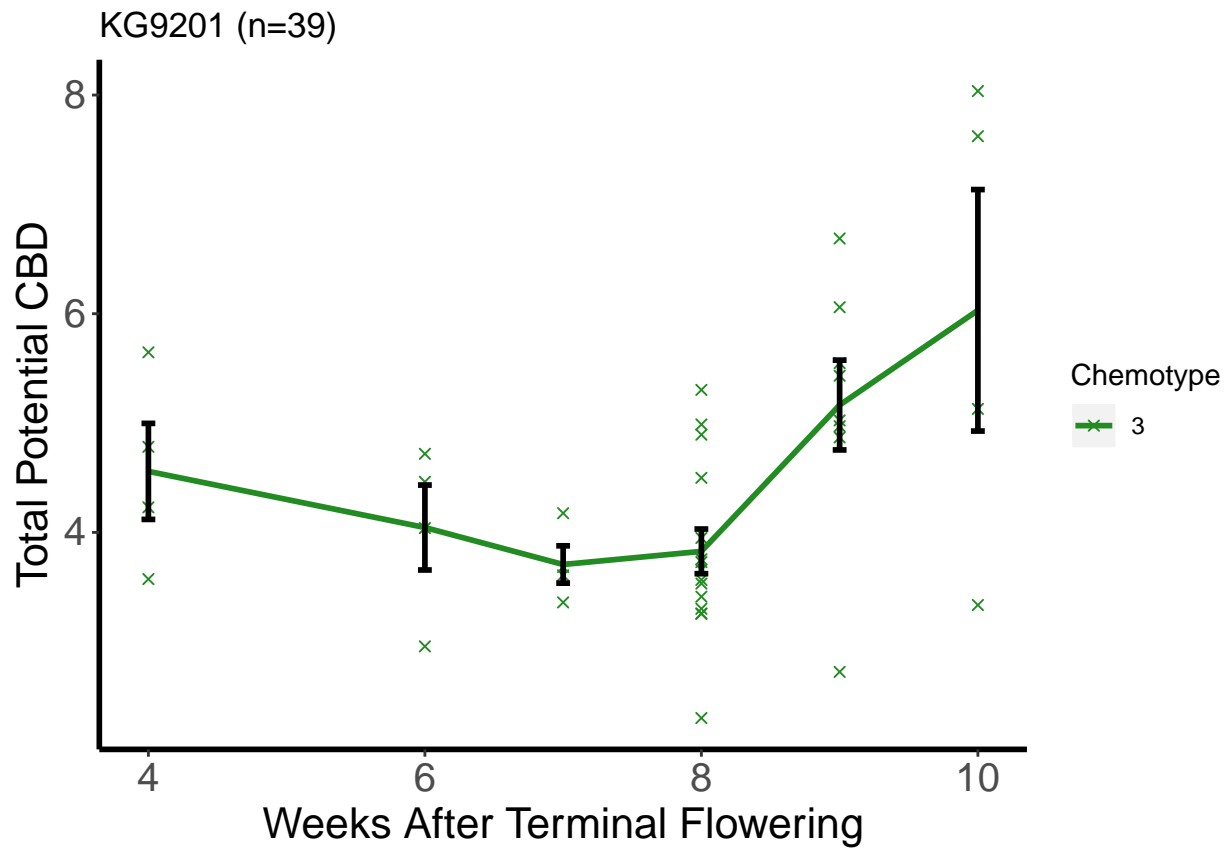
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



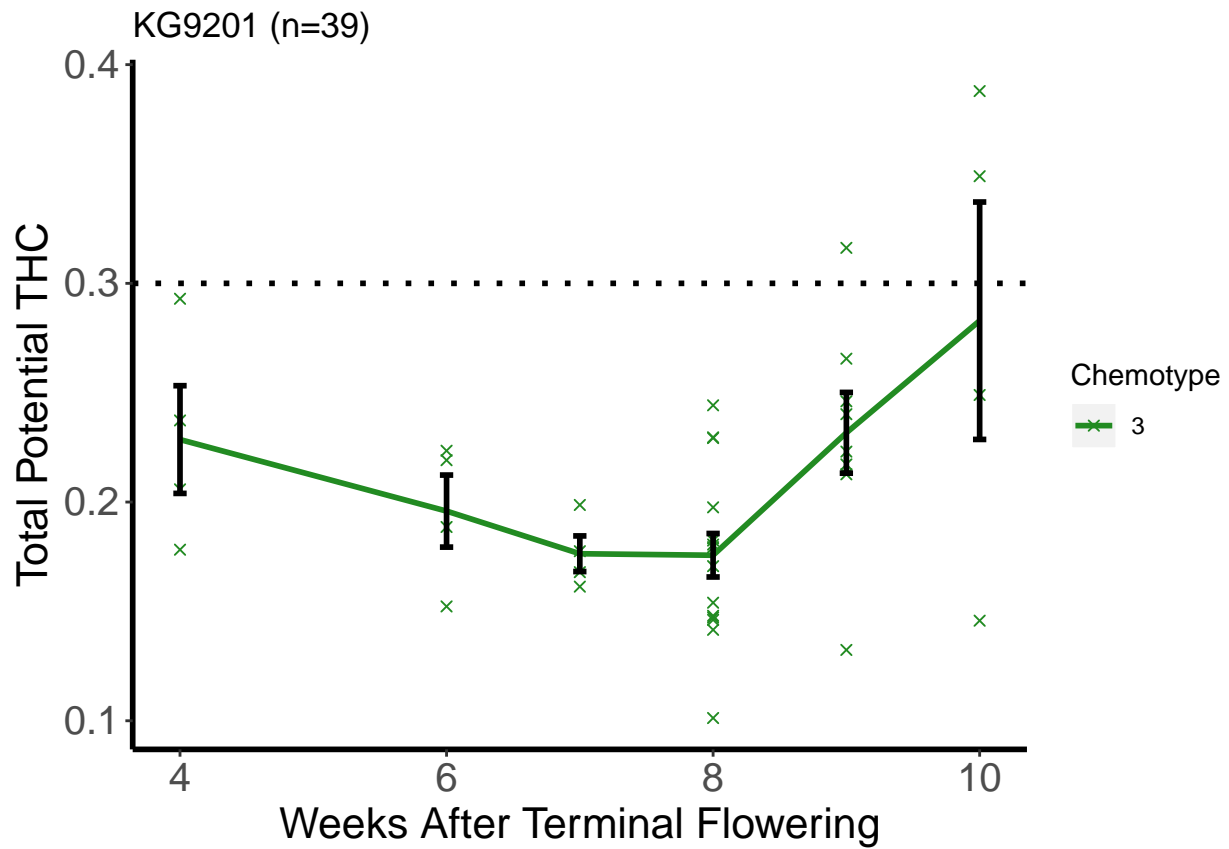
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



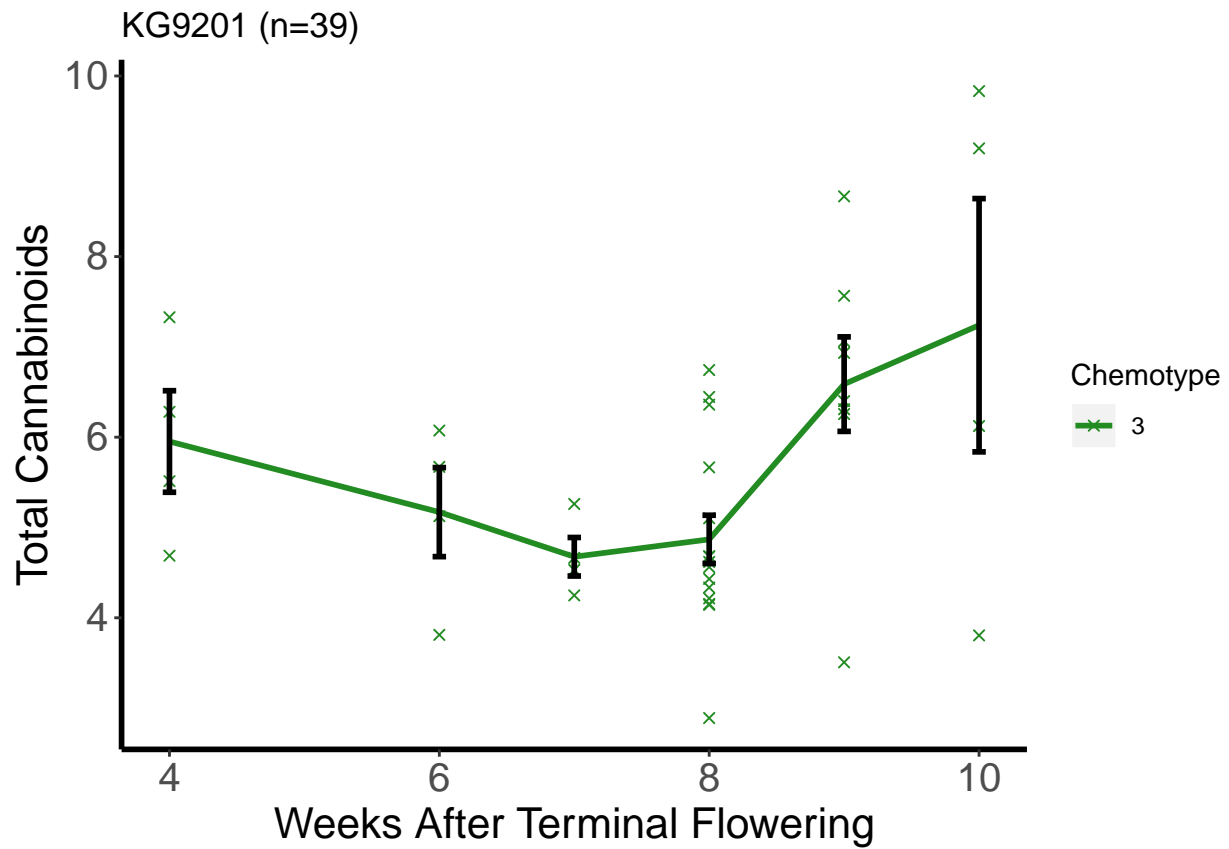
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



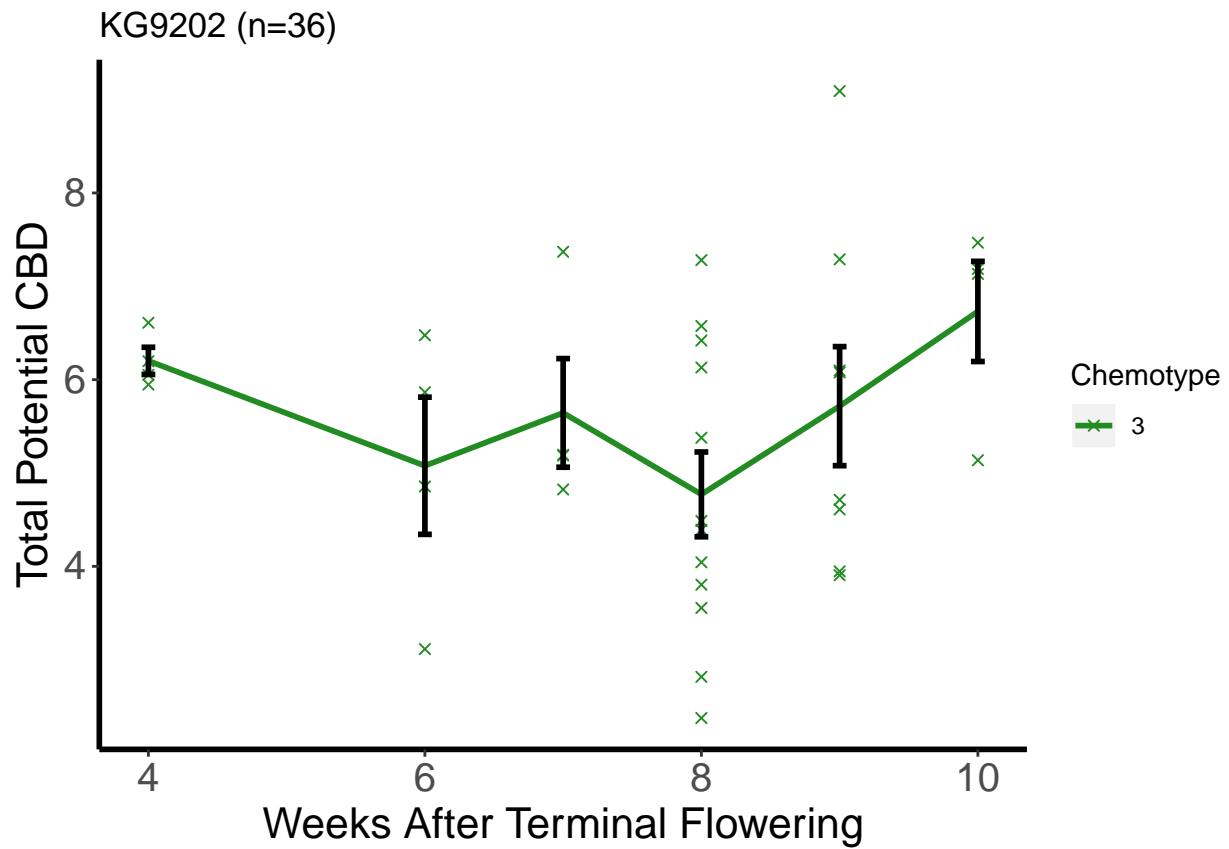
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



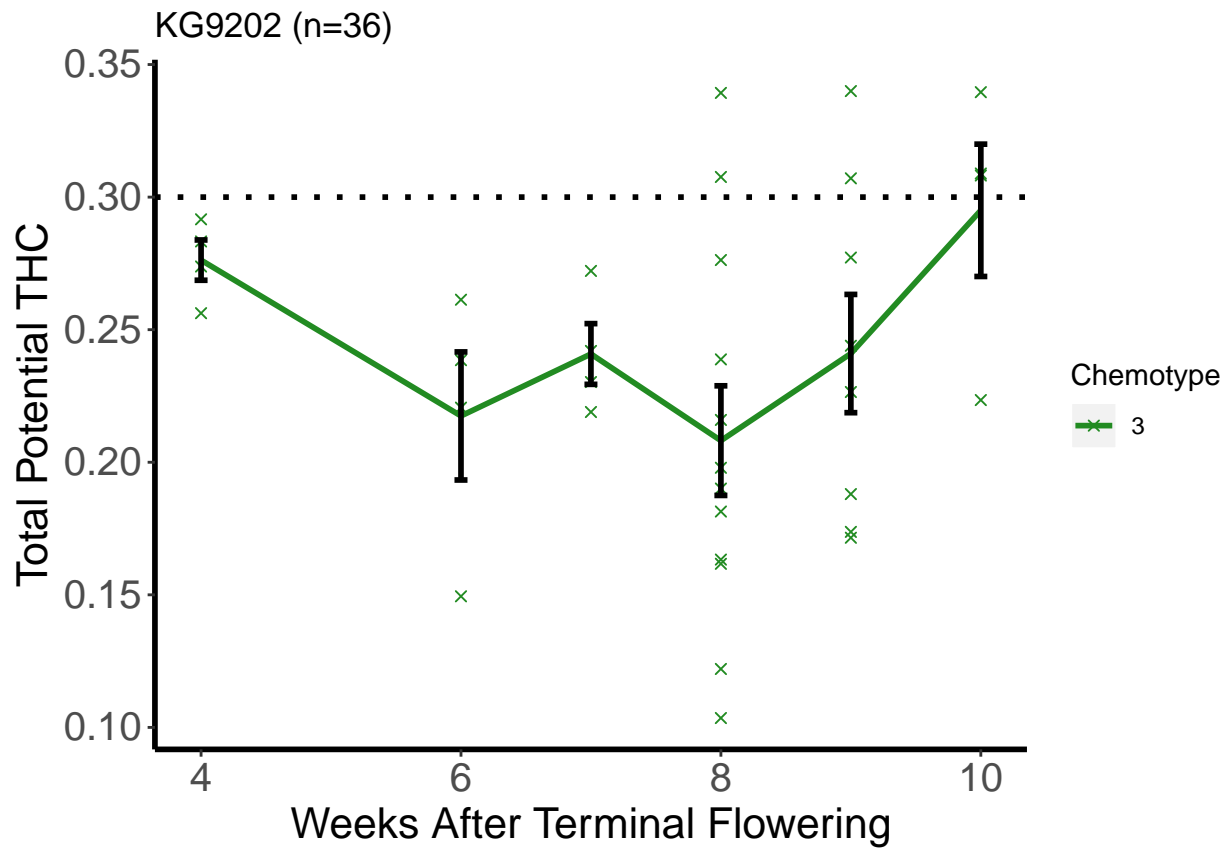
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



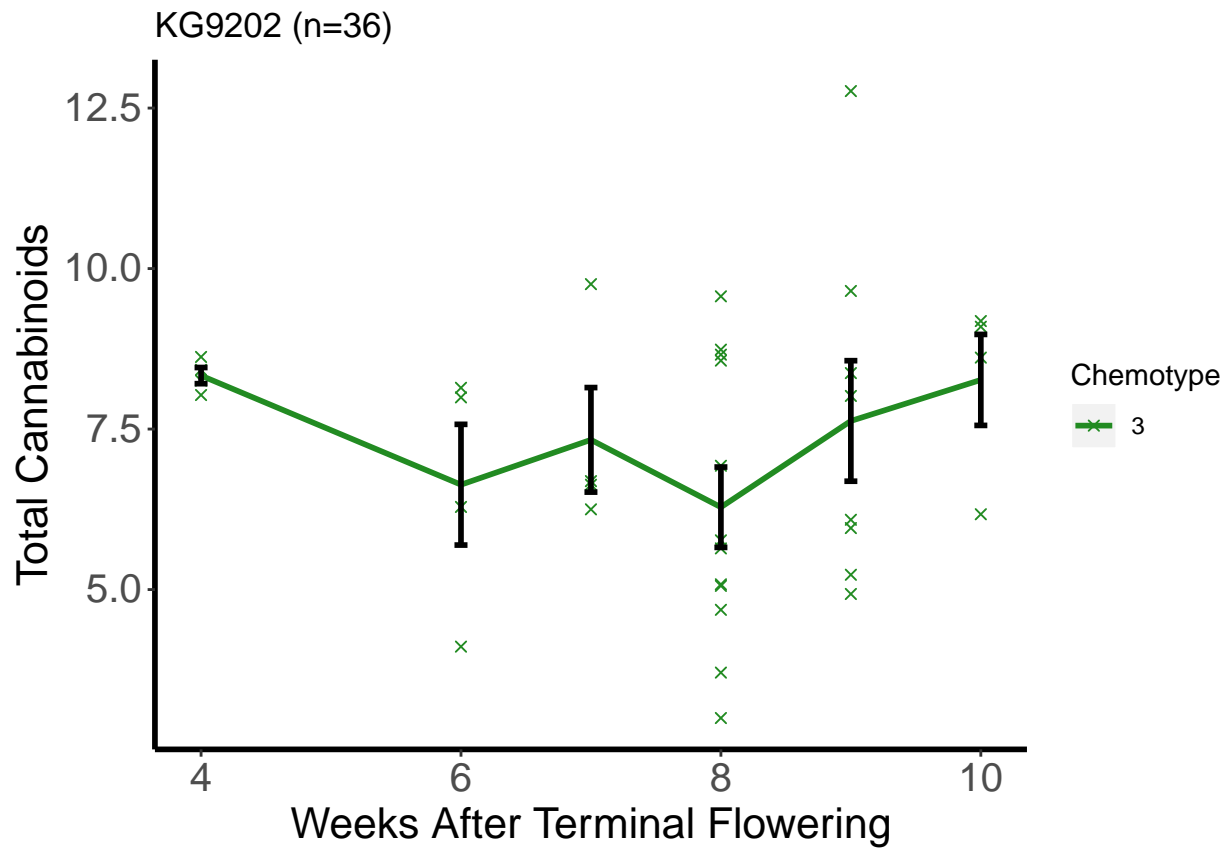
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

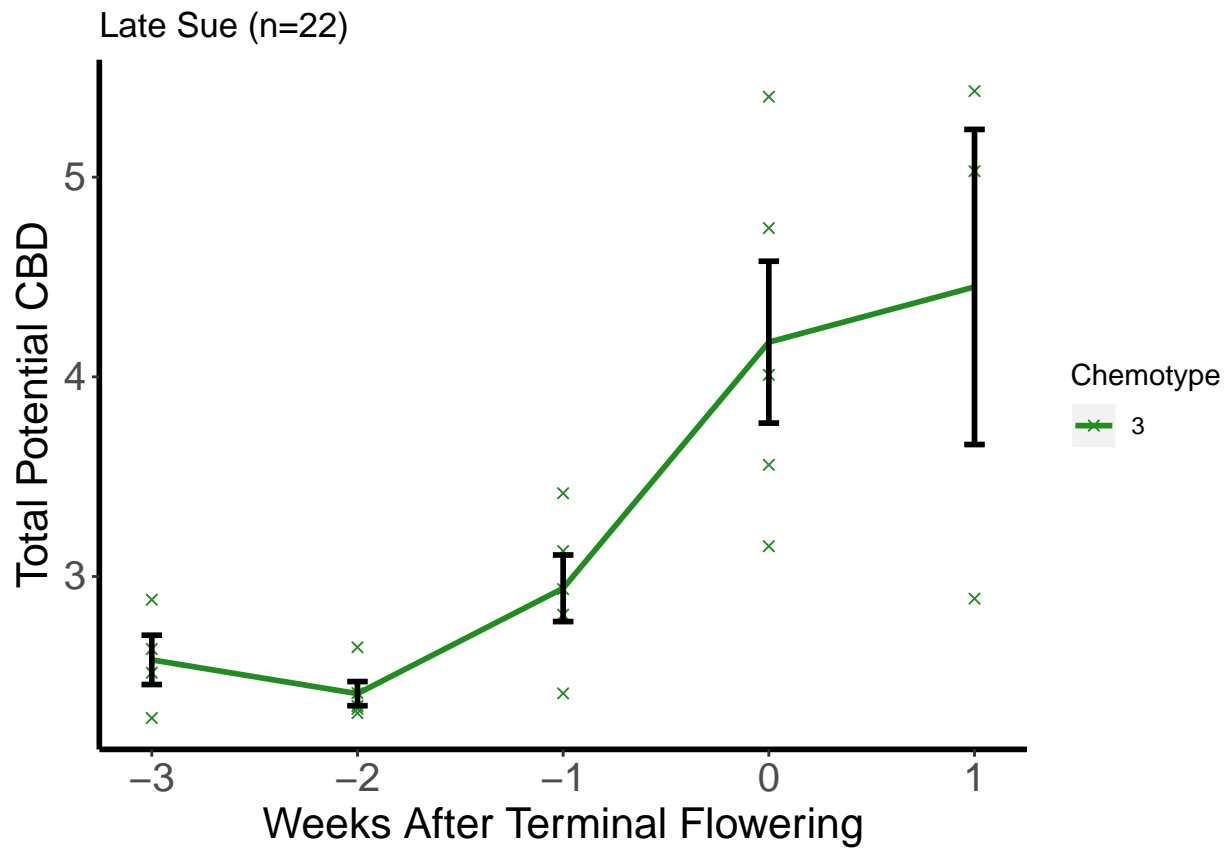
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



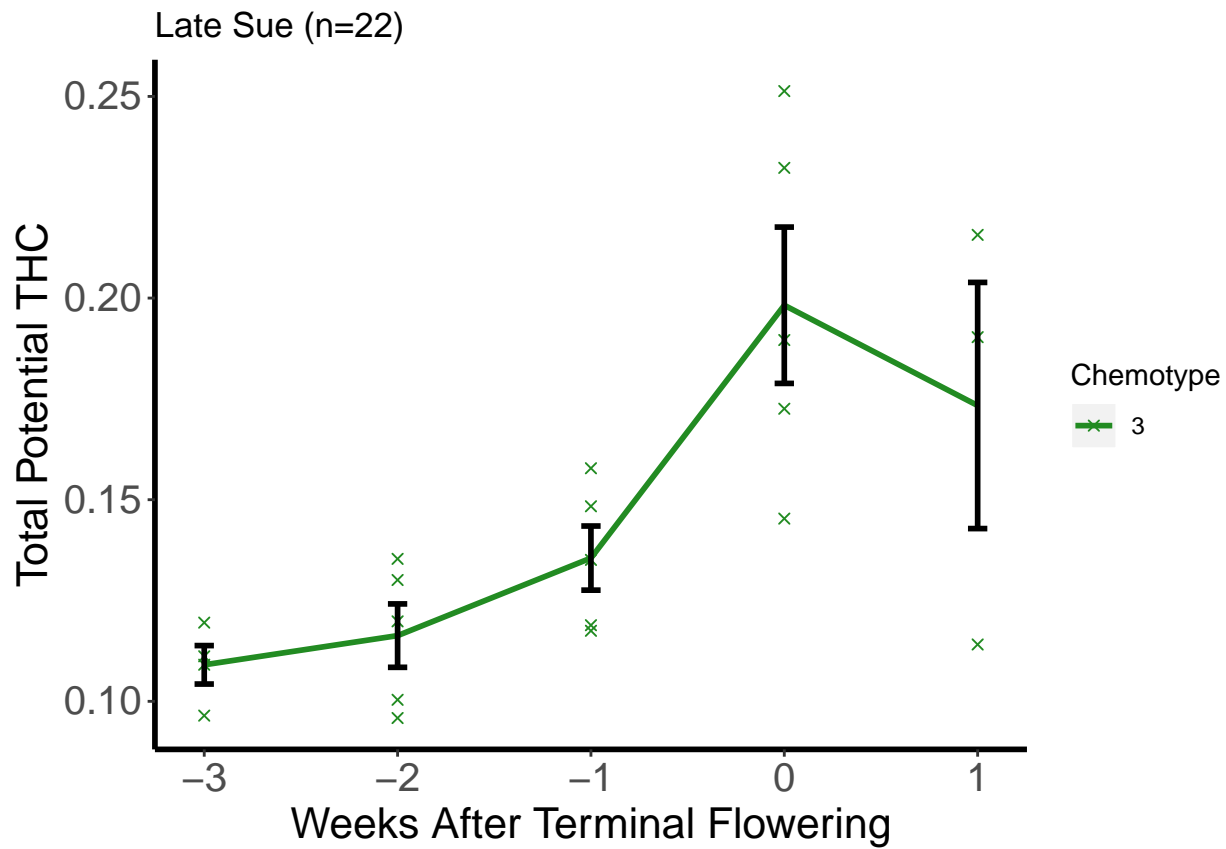
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



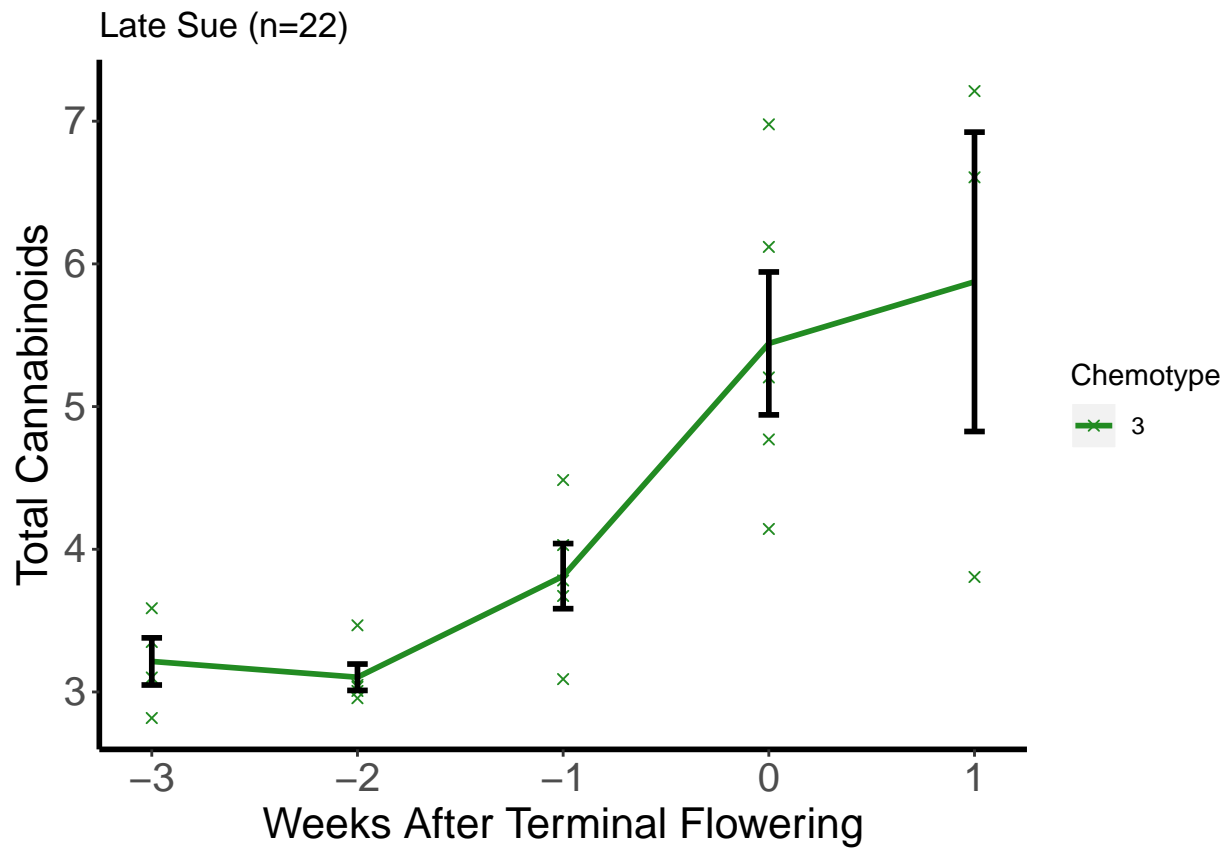
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



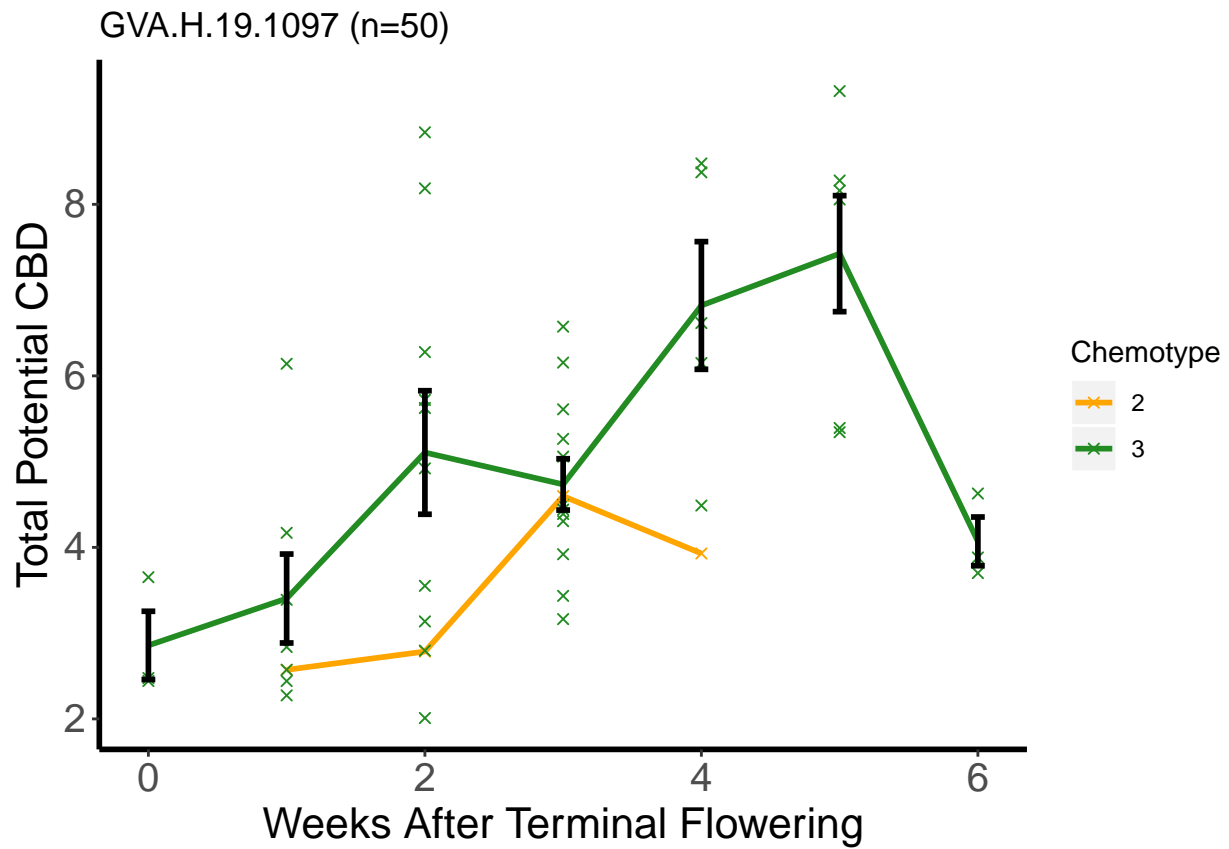
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



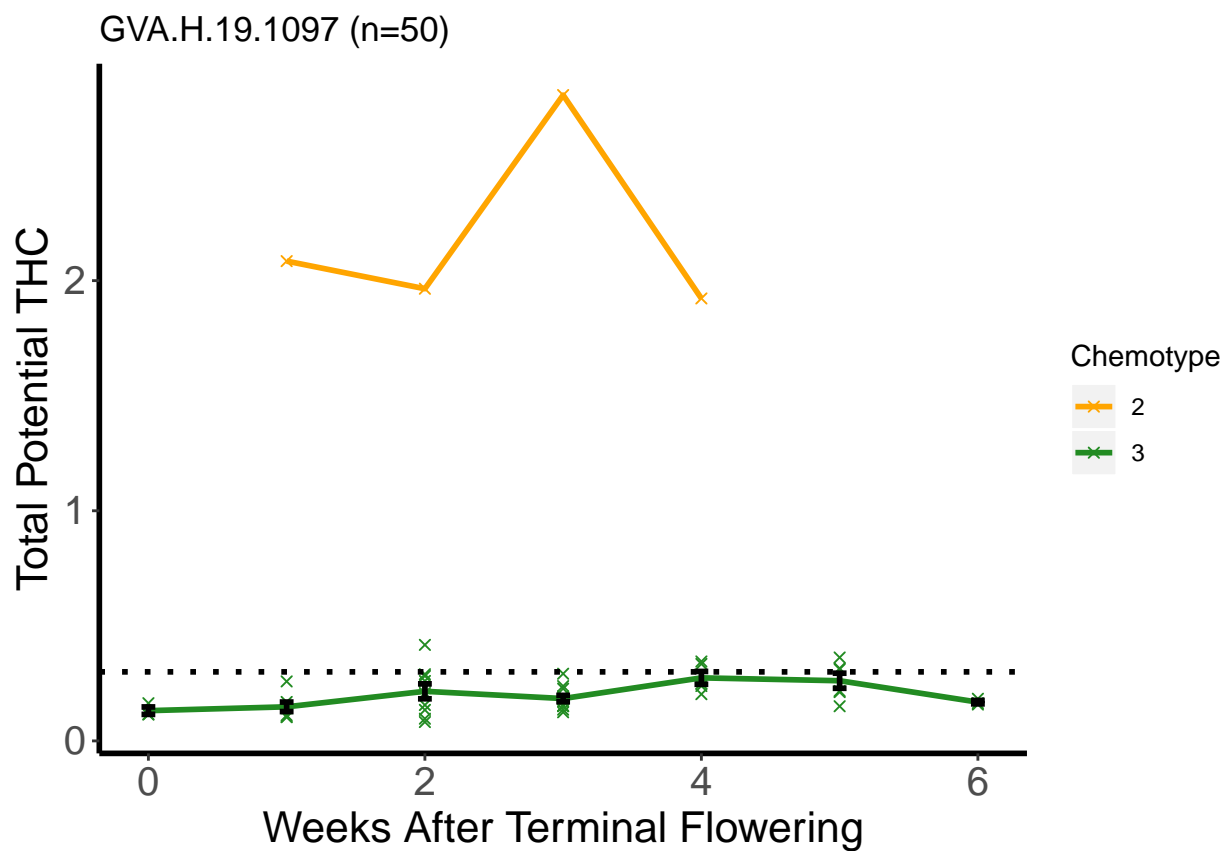
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



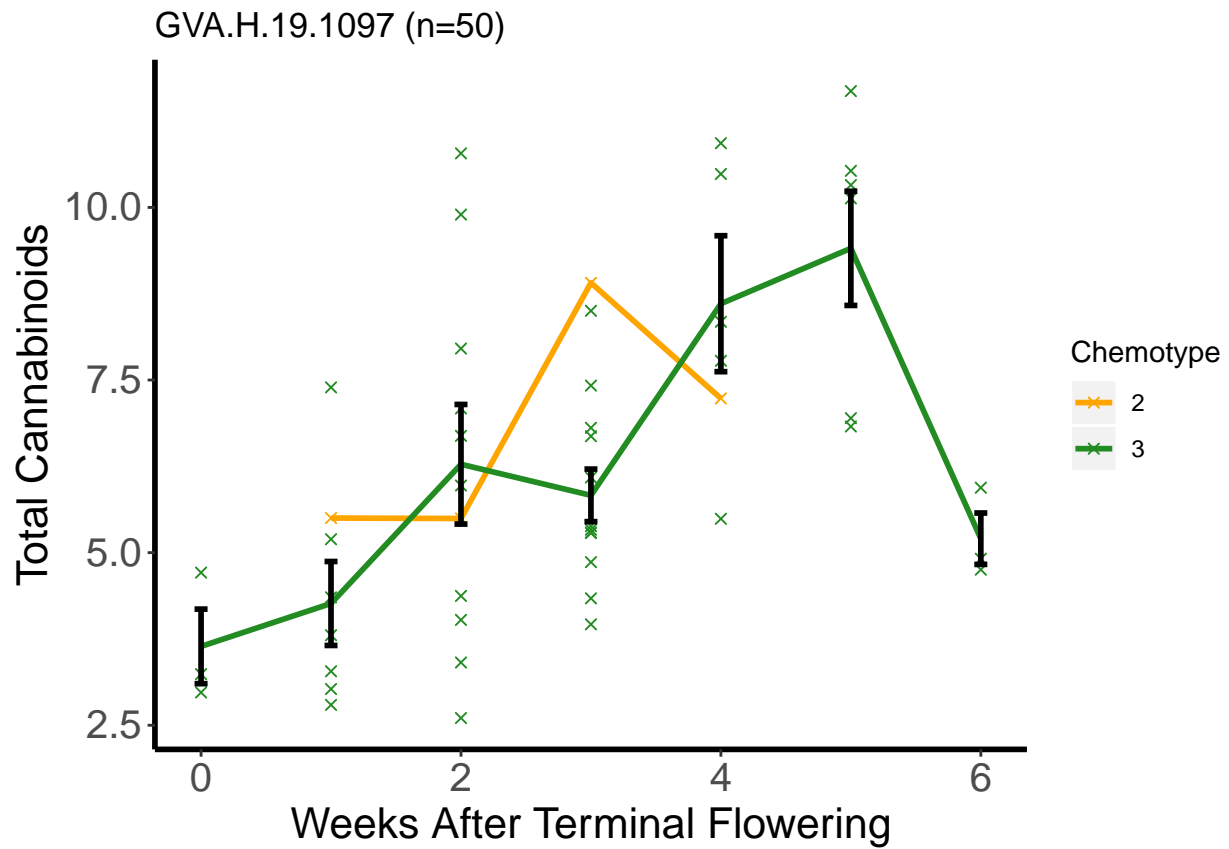
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



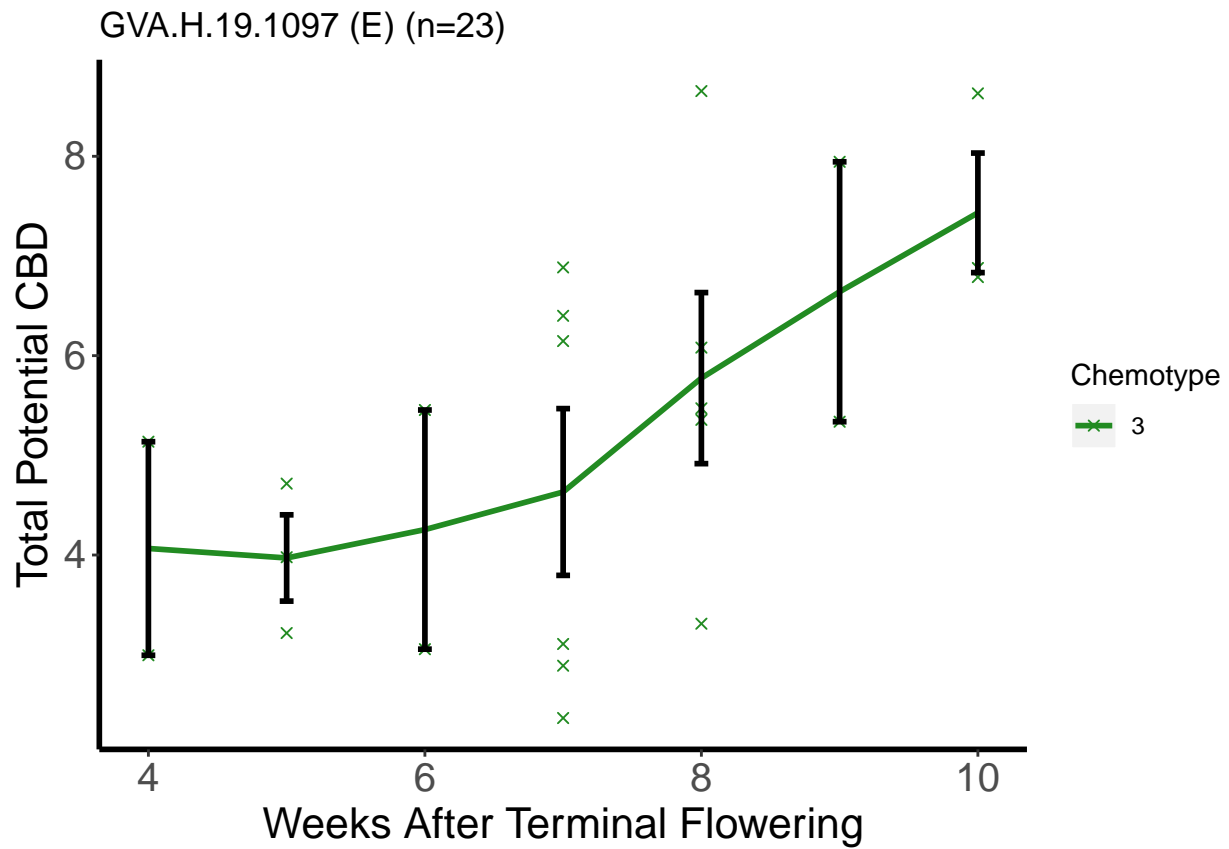
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



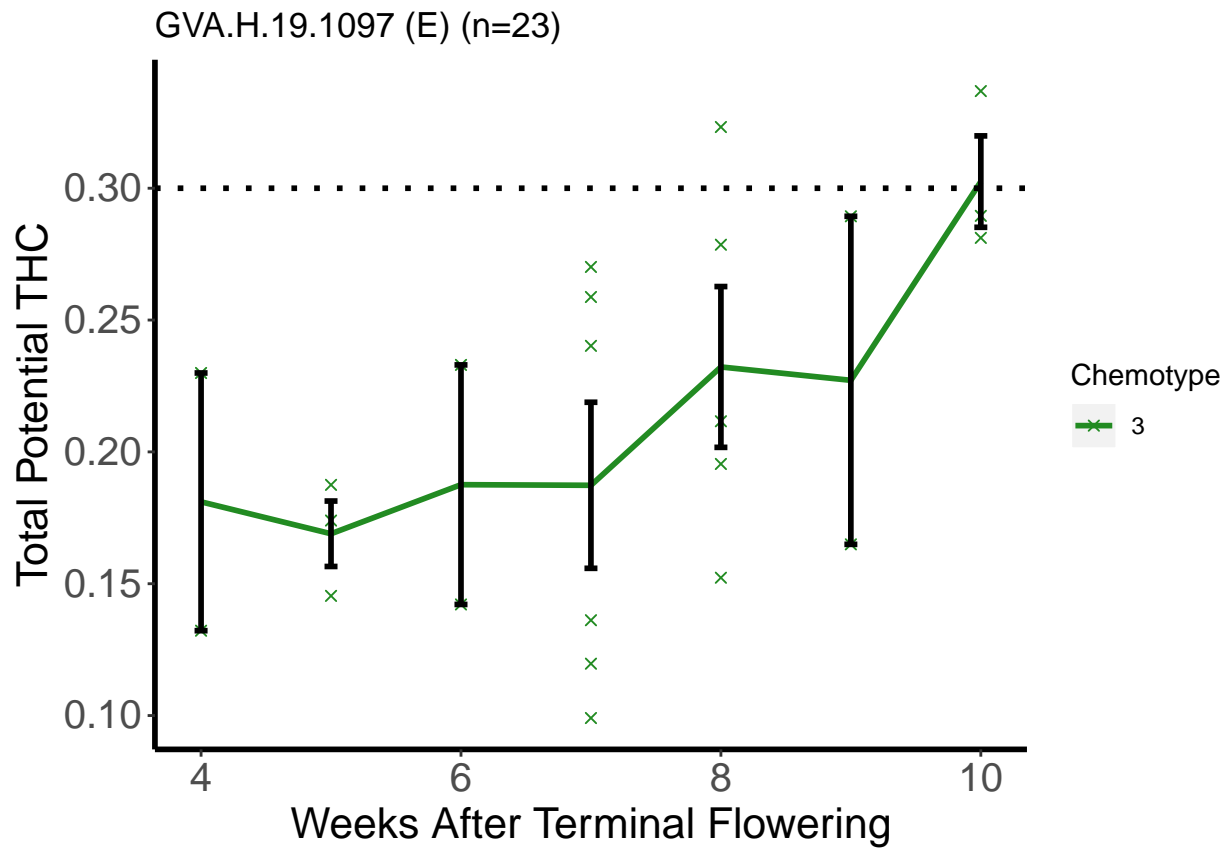
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

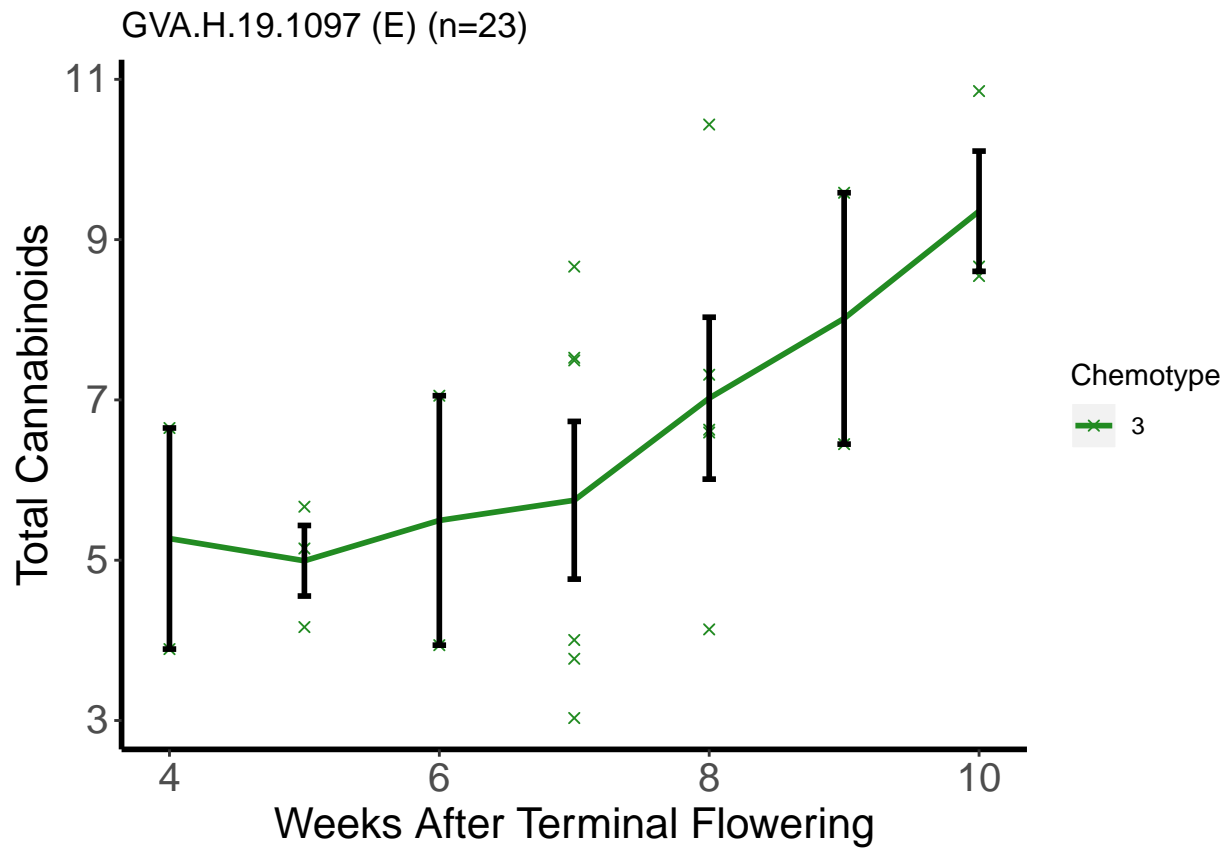
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



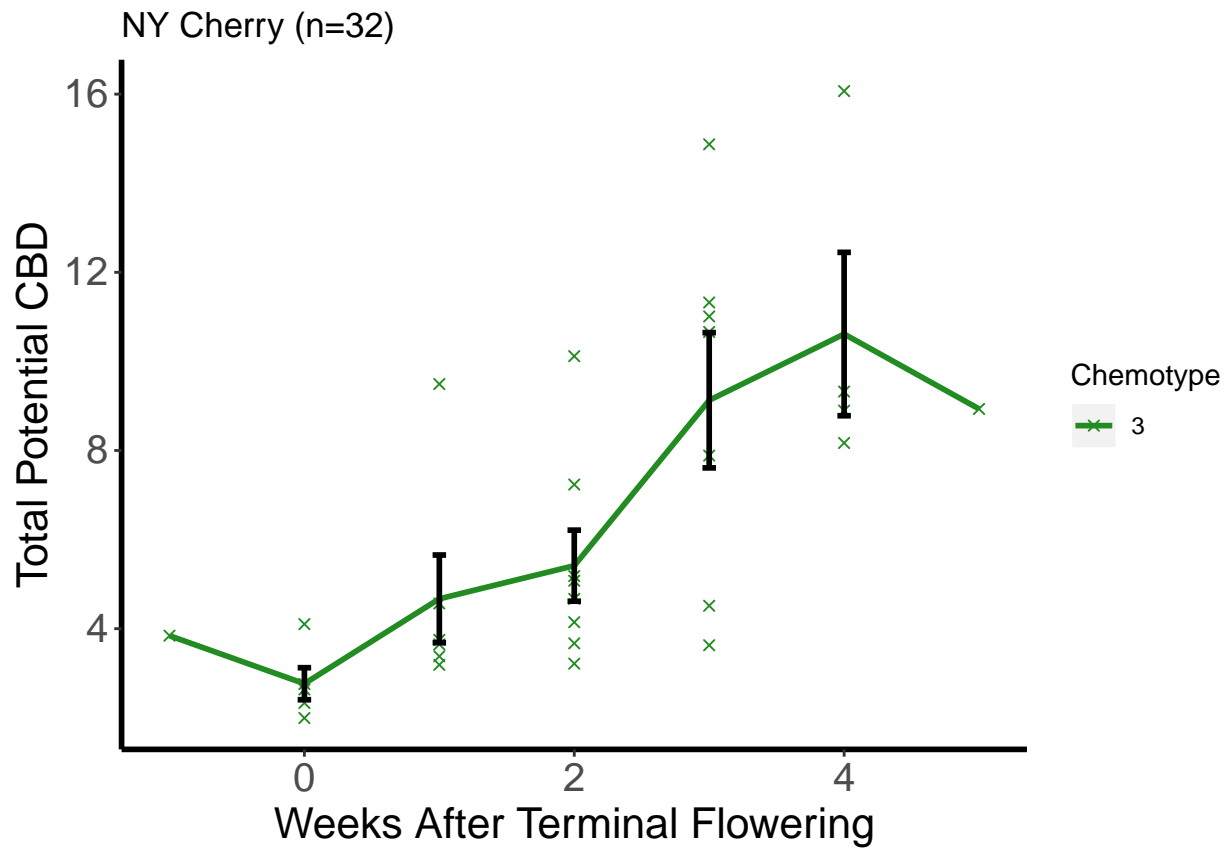
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



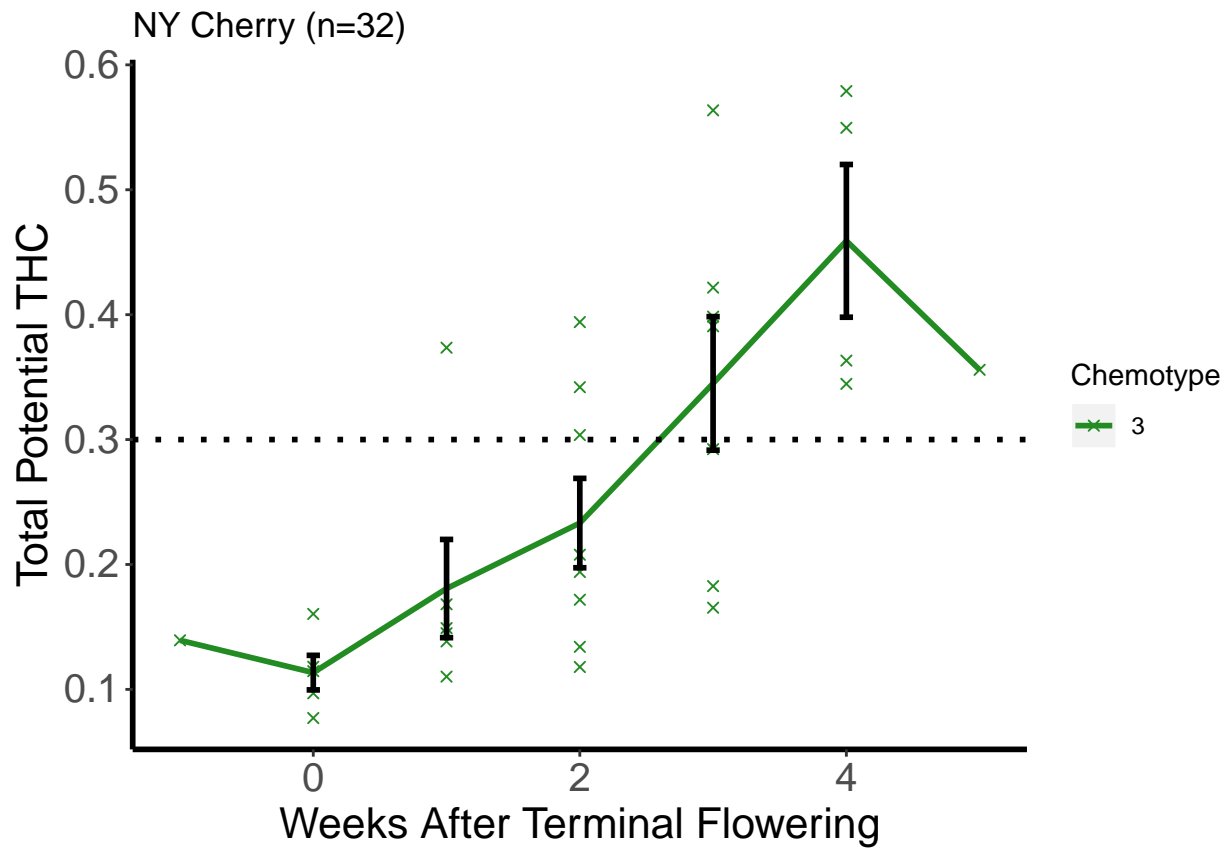
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



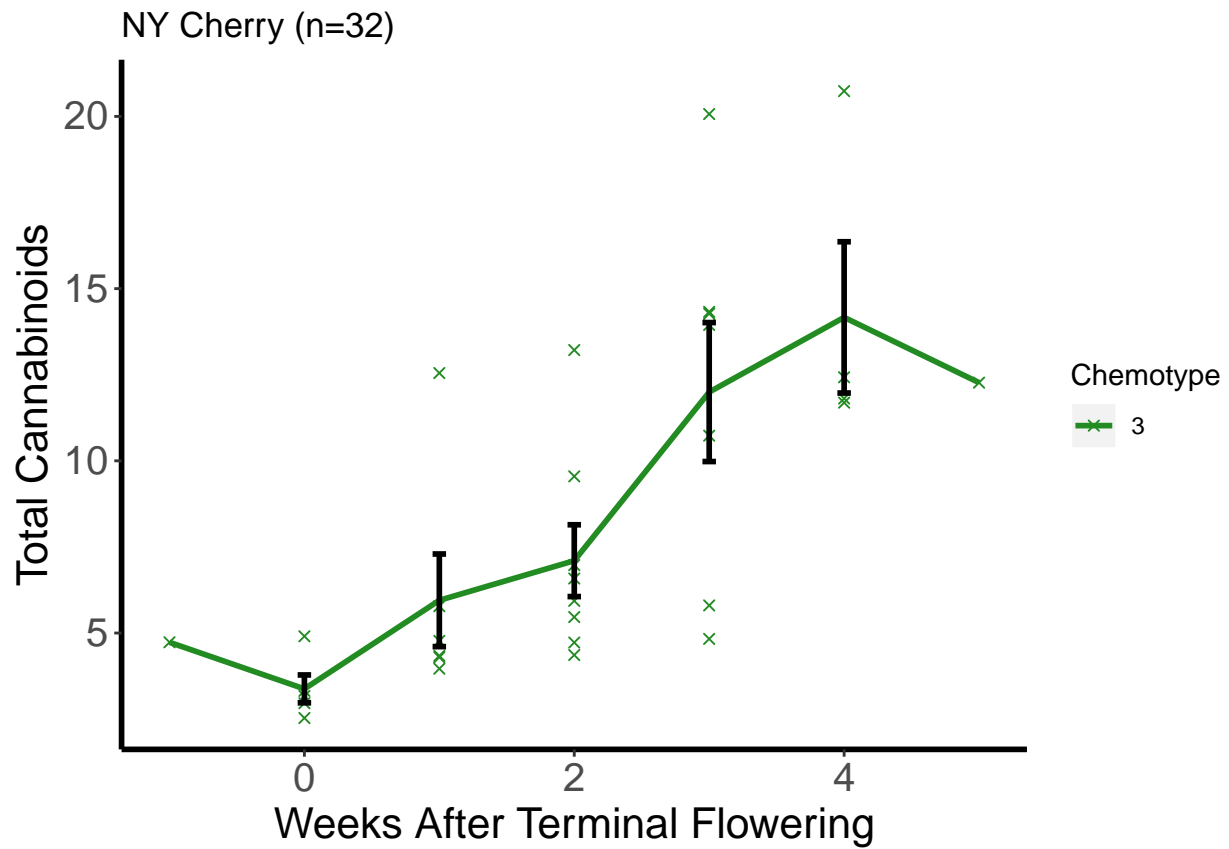
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



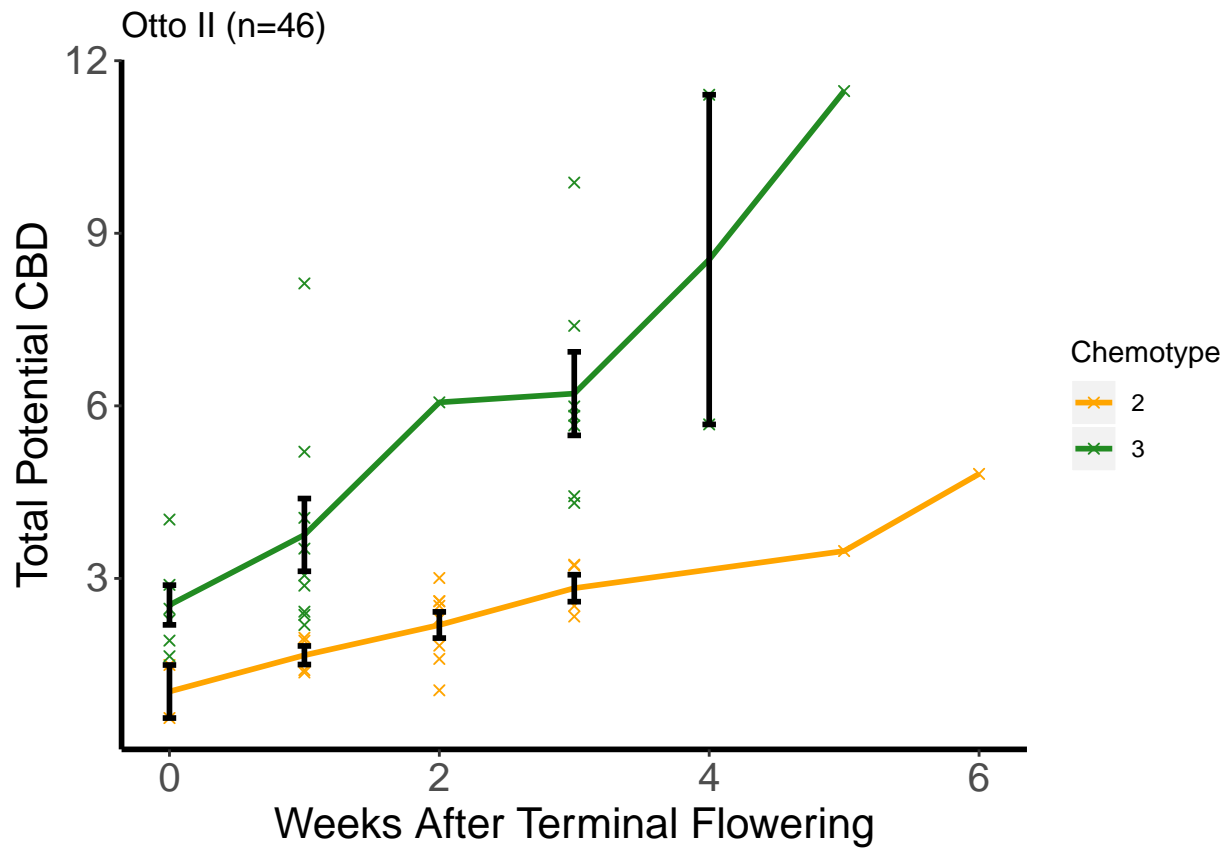
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



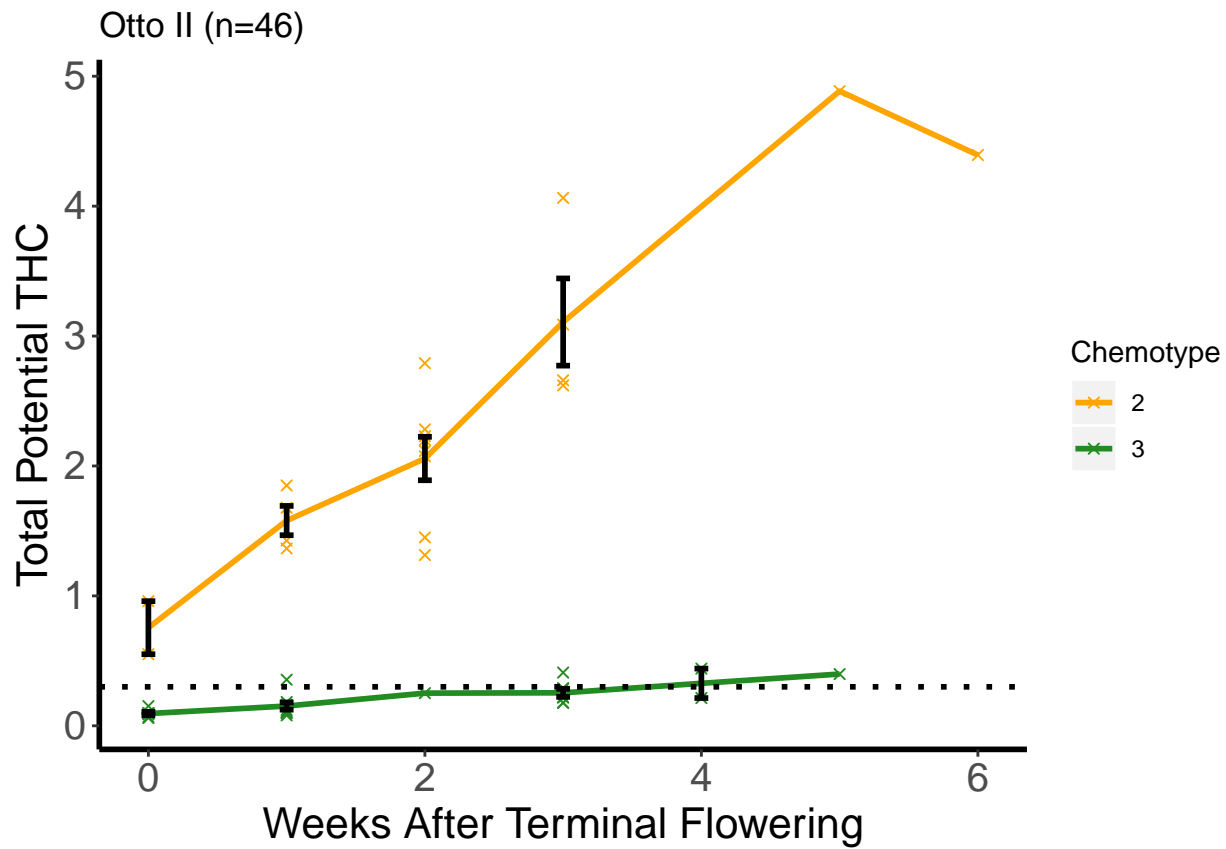
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



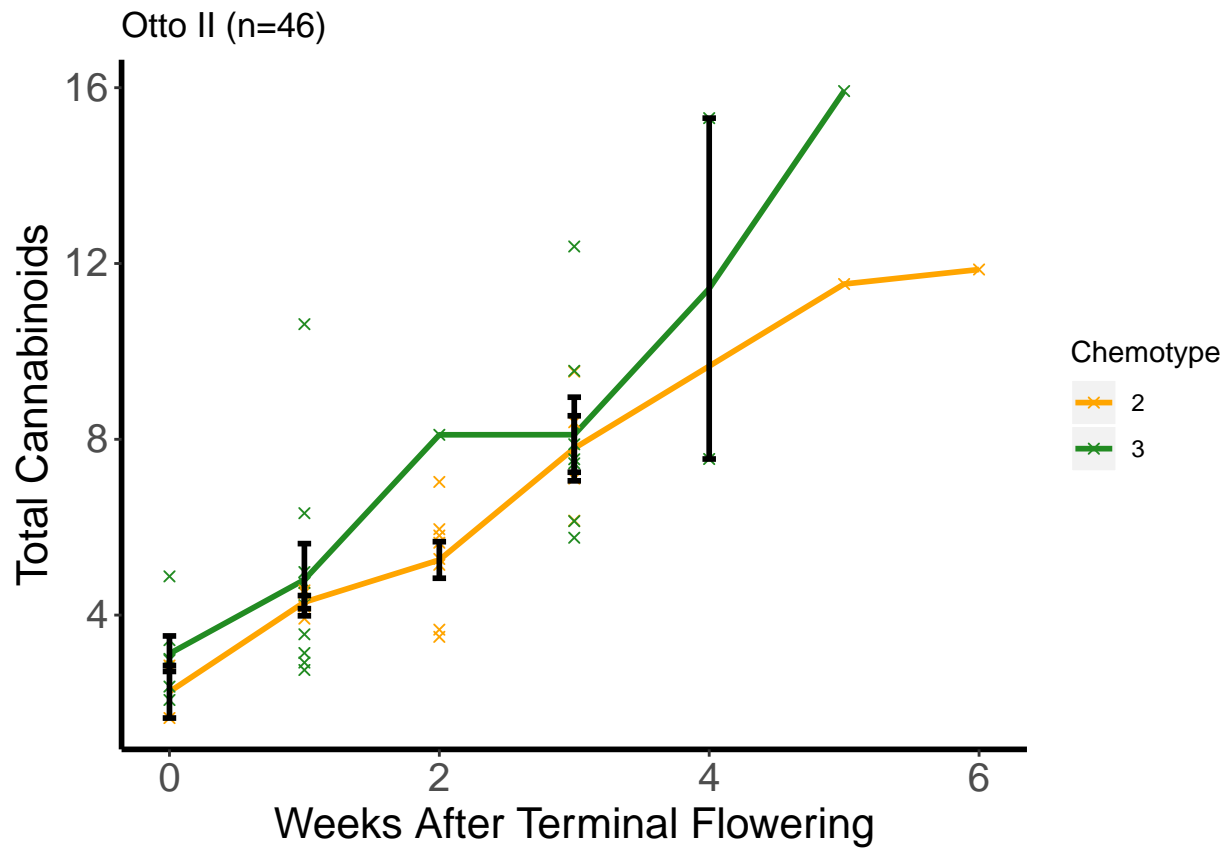
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



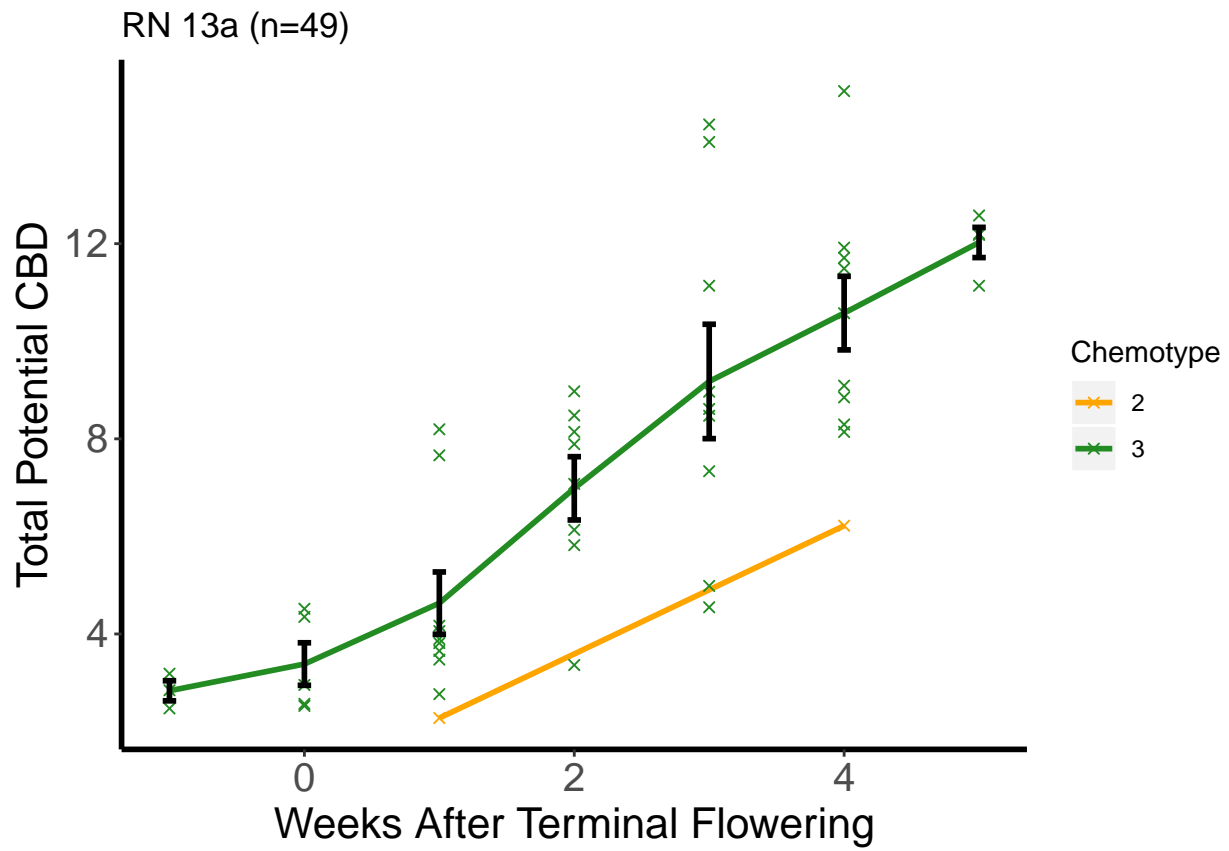
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```

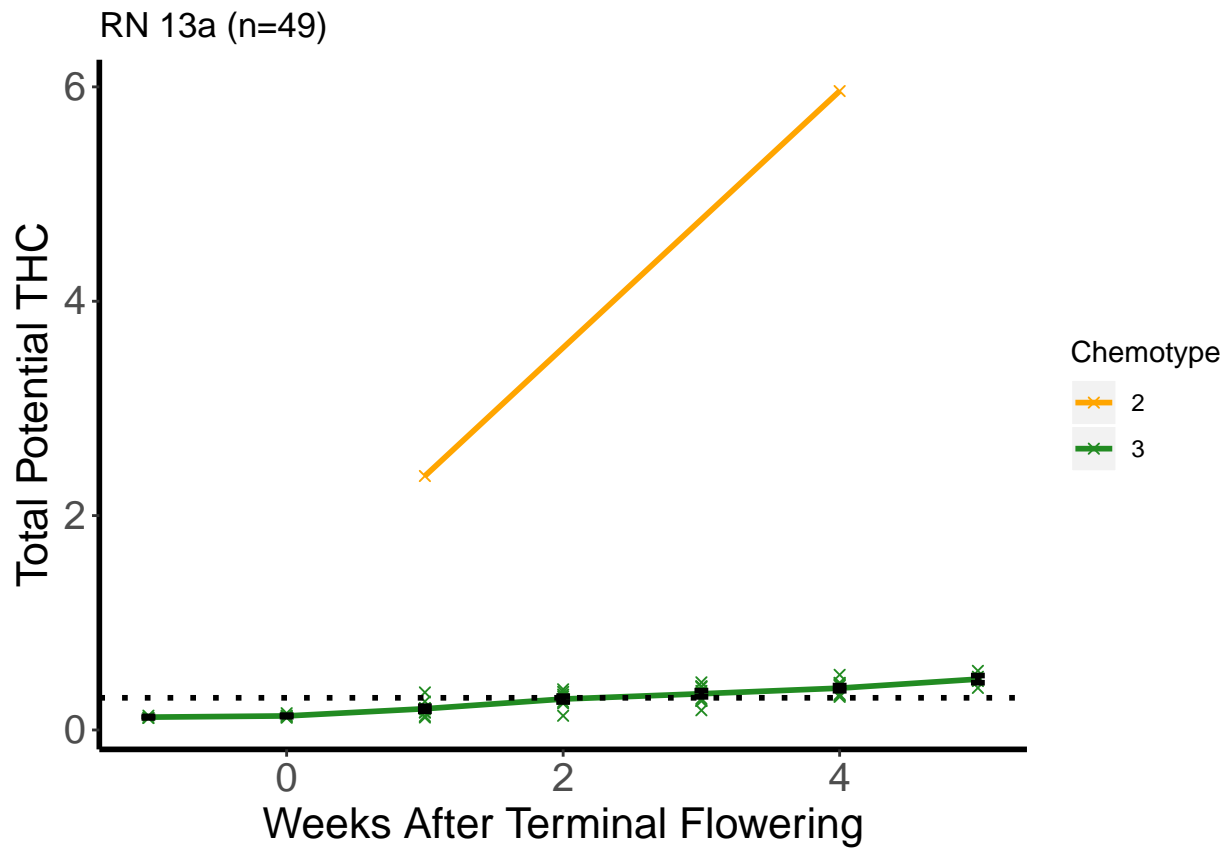
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



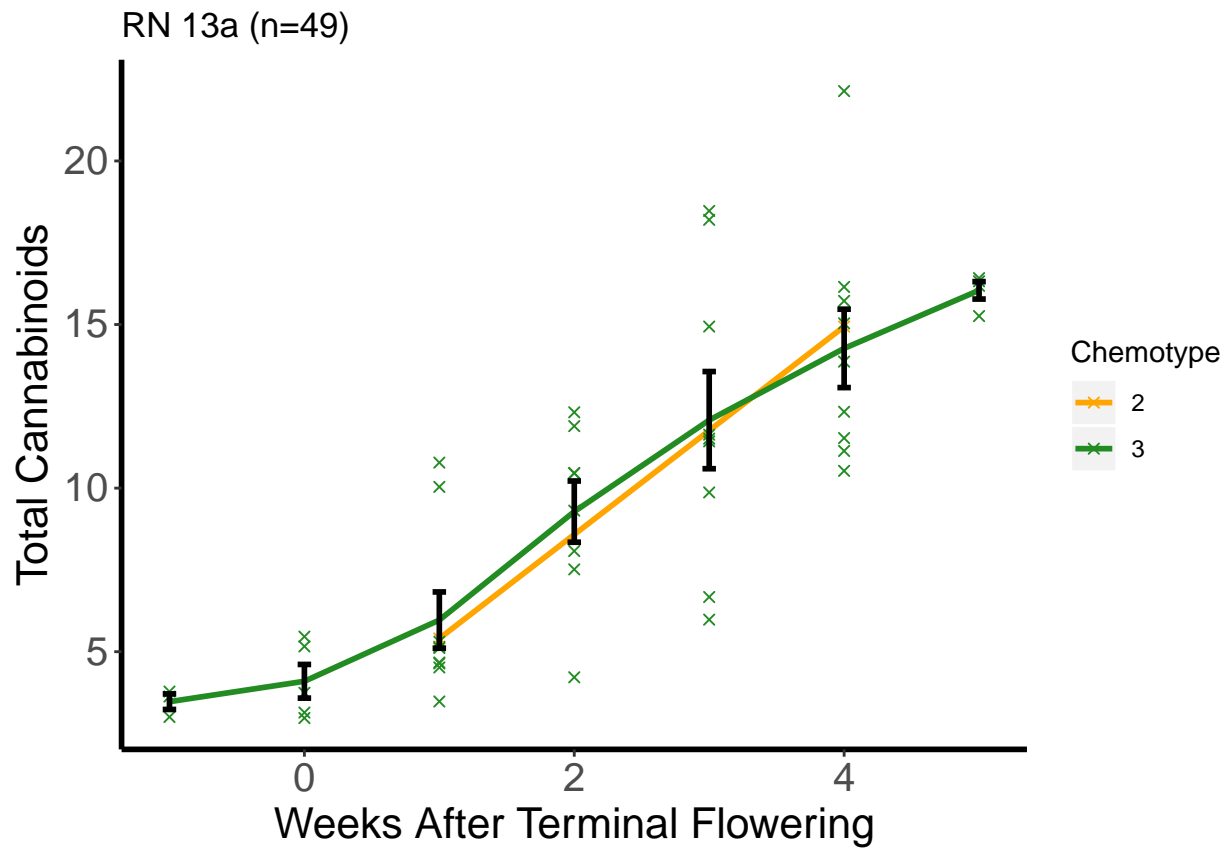
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



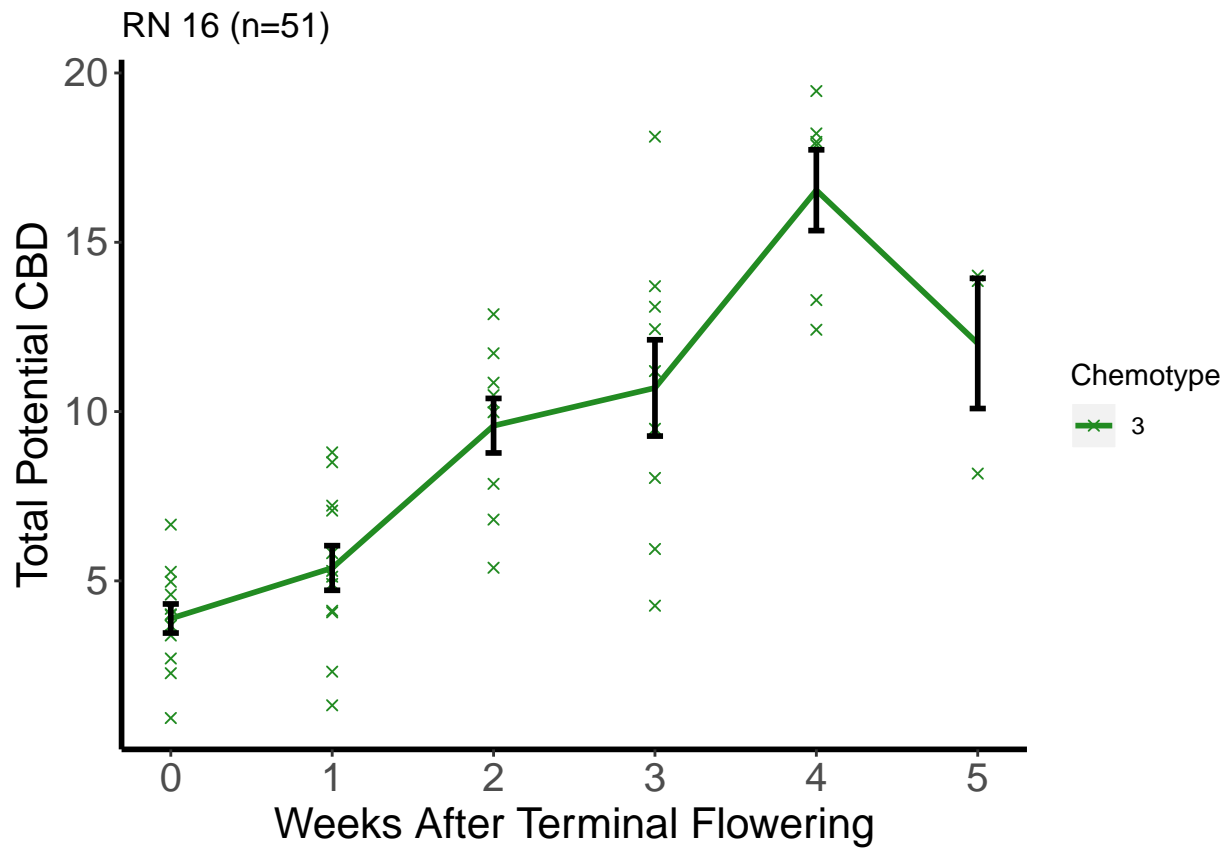
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



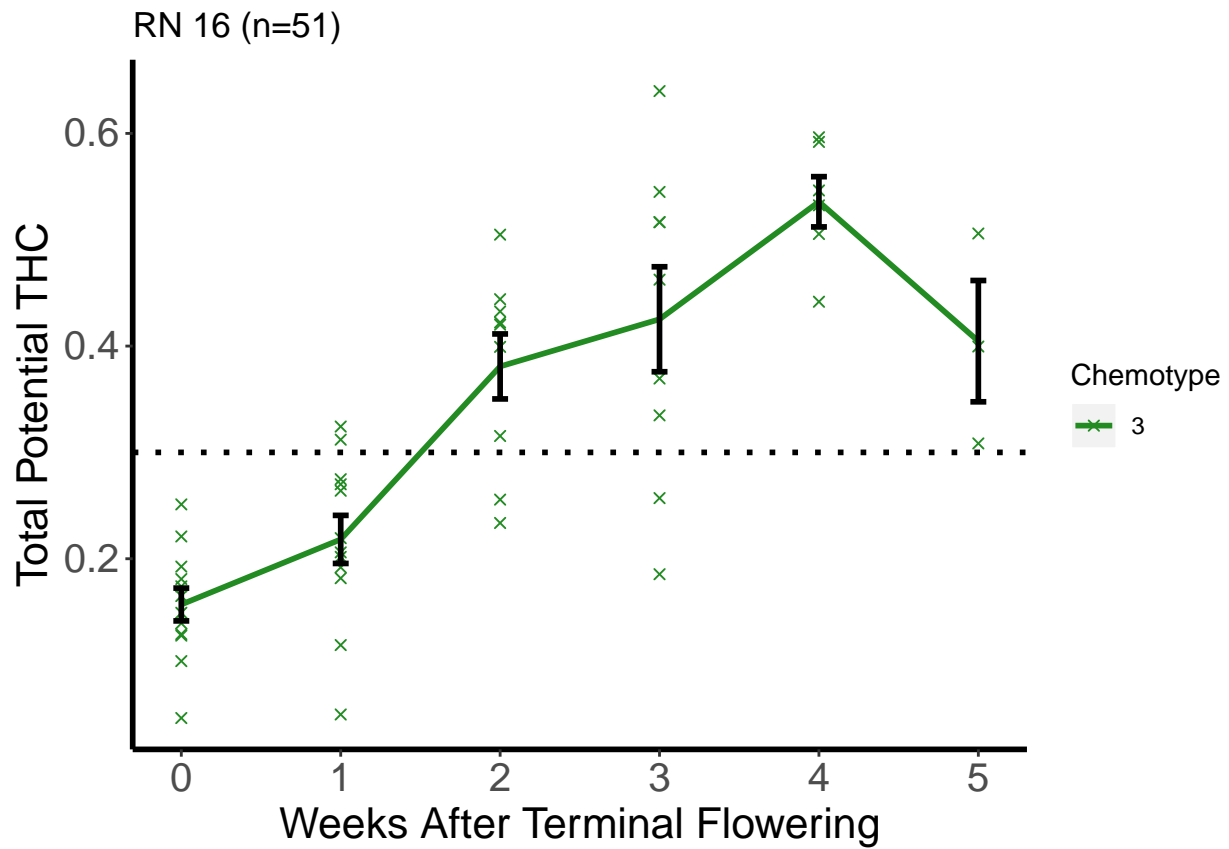
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



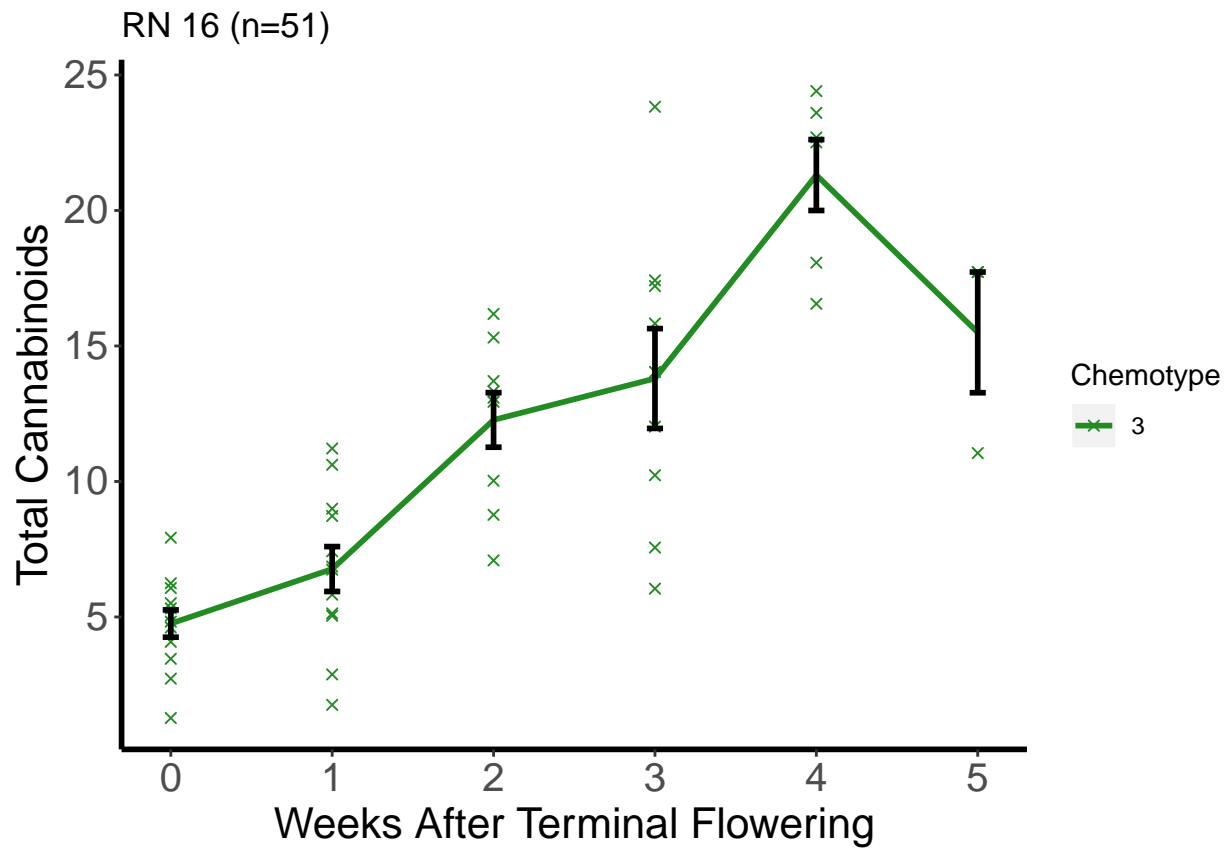
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



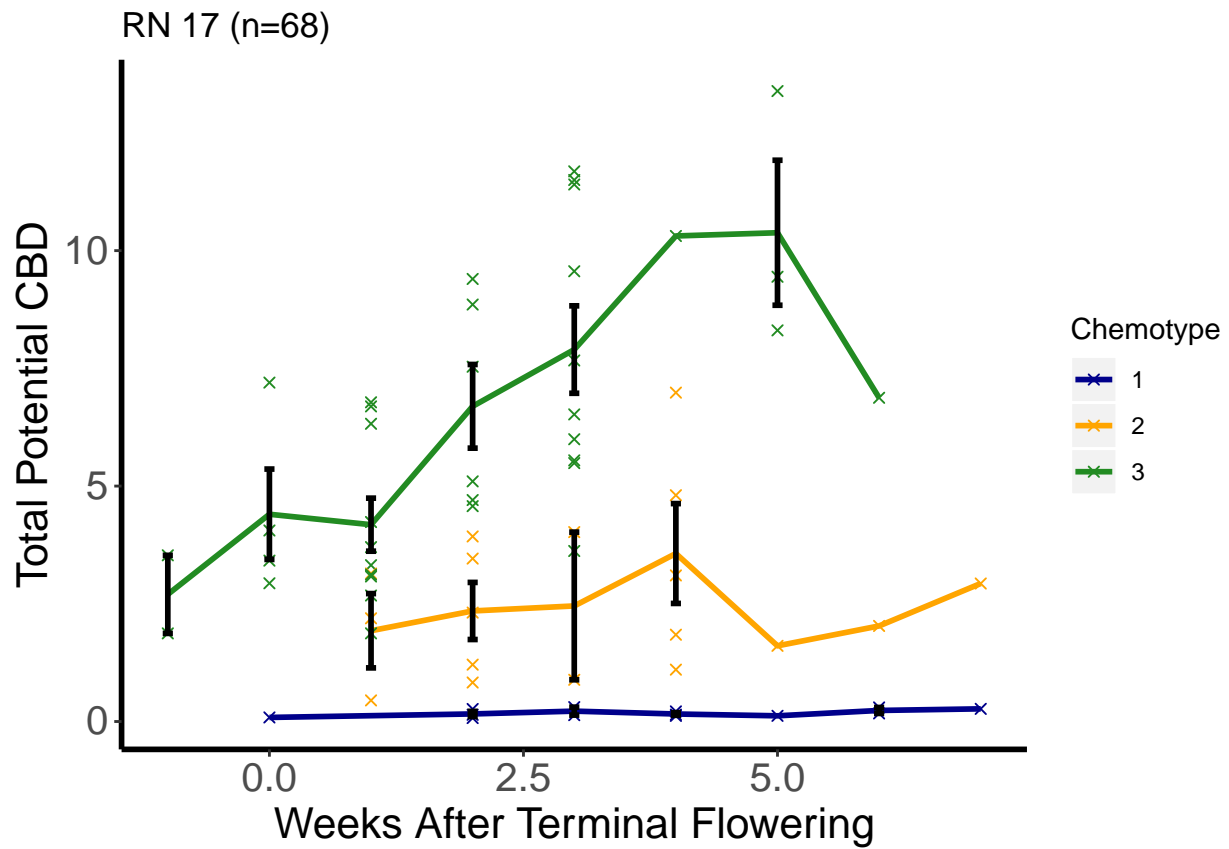
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



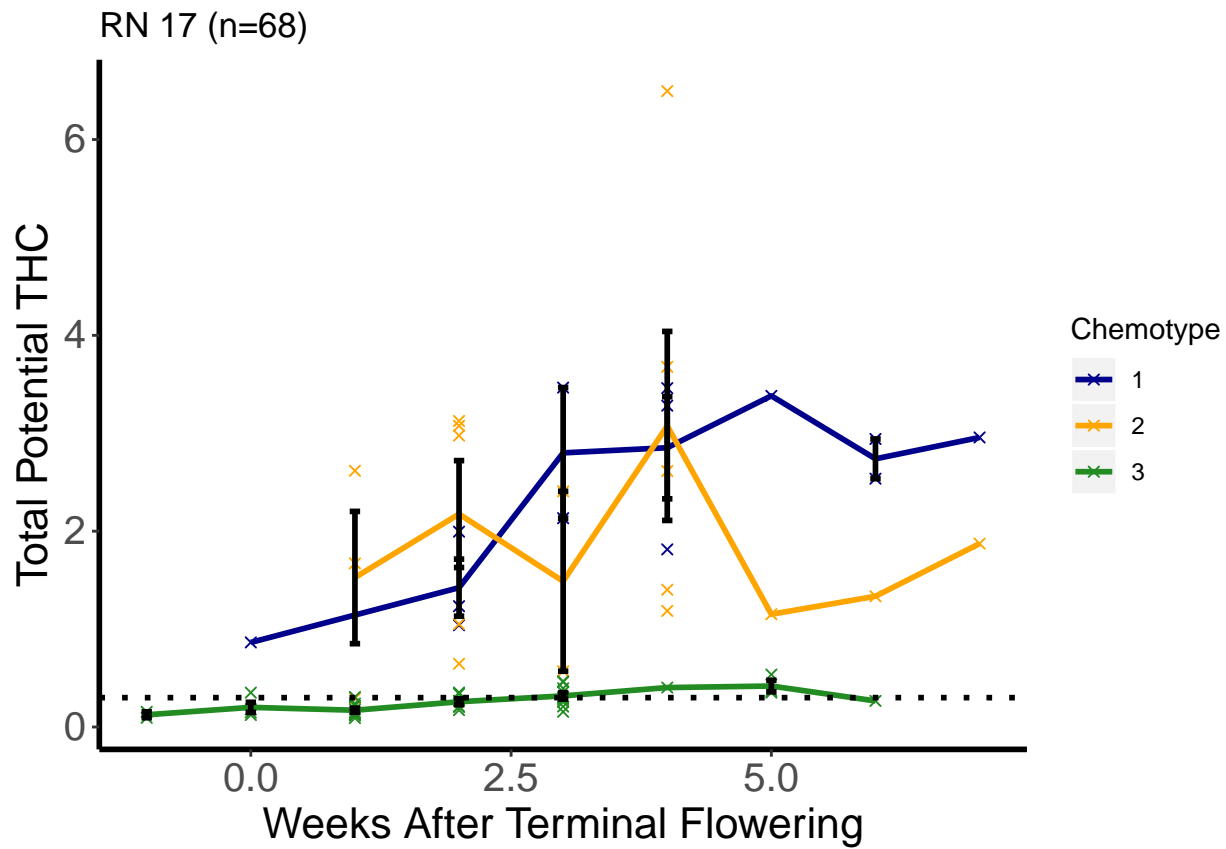
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



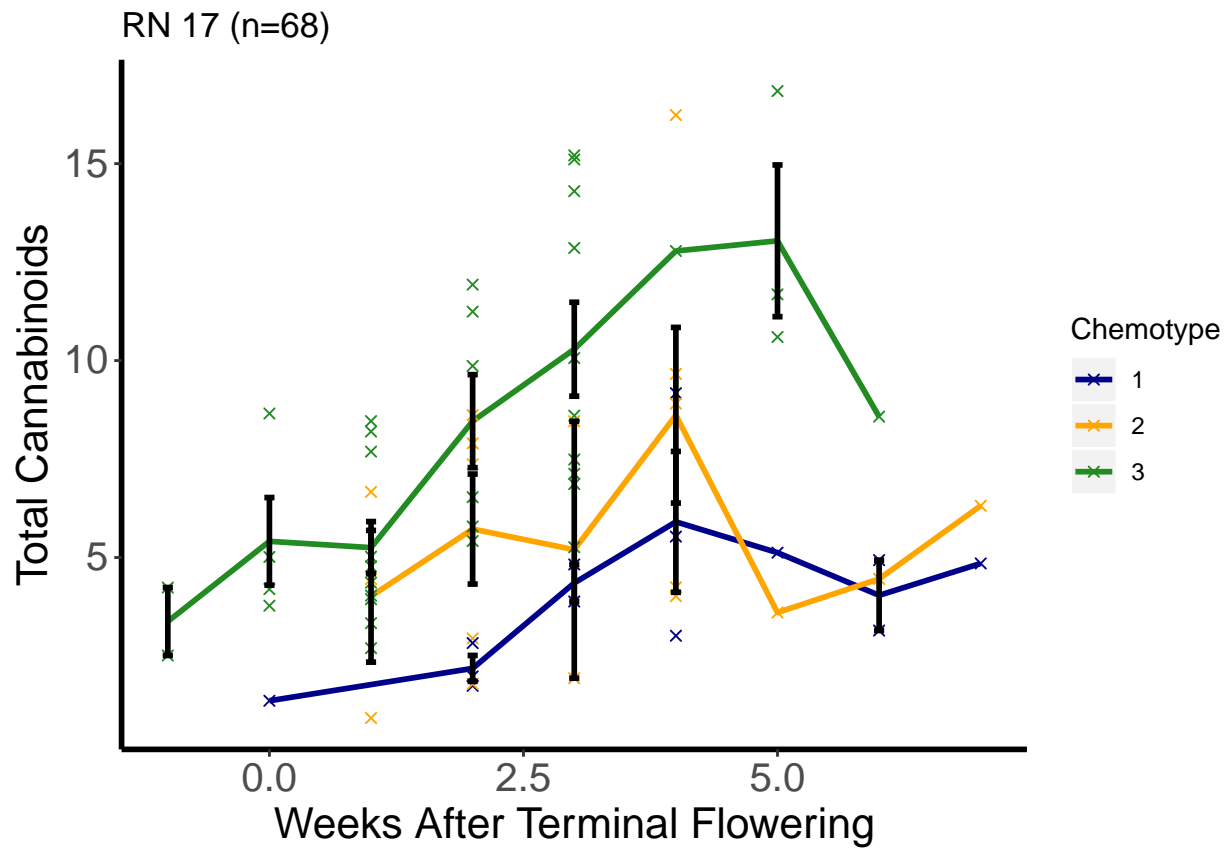
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

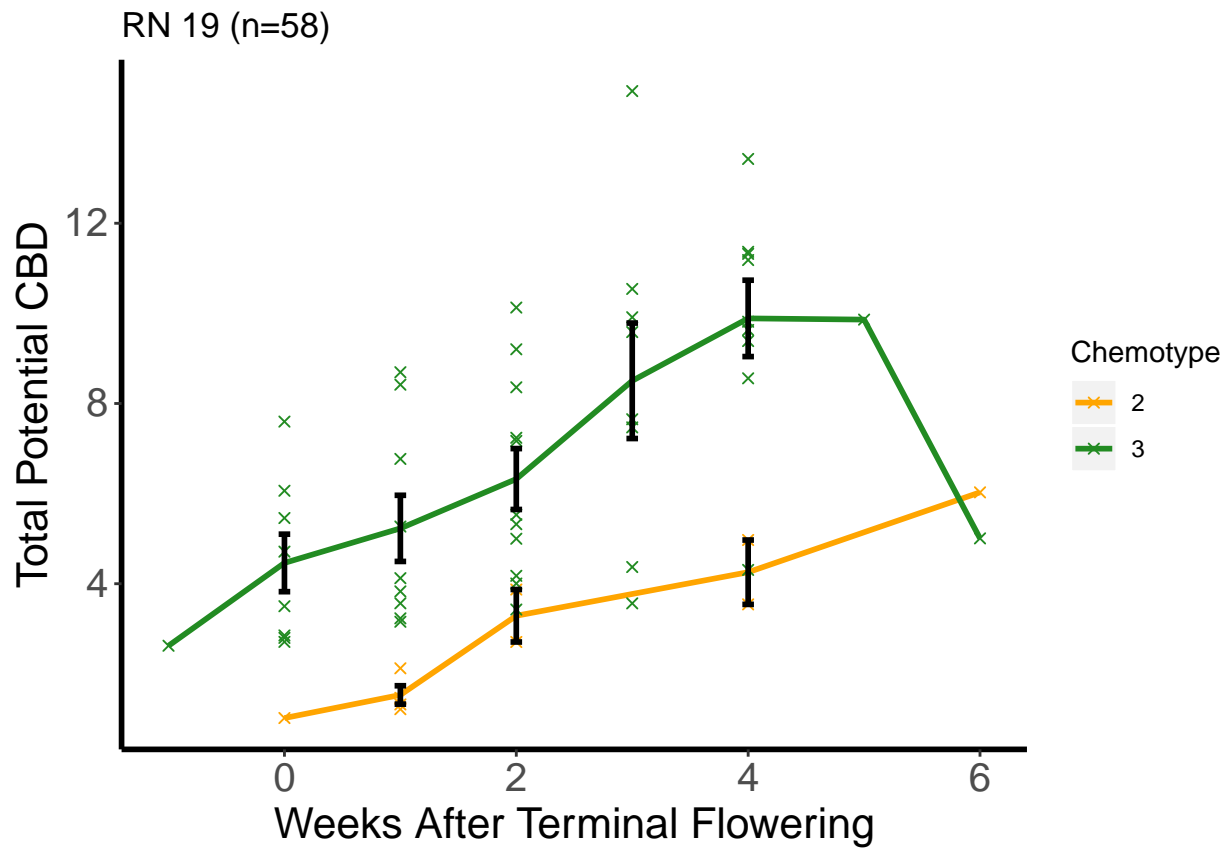
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



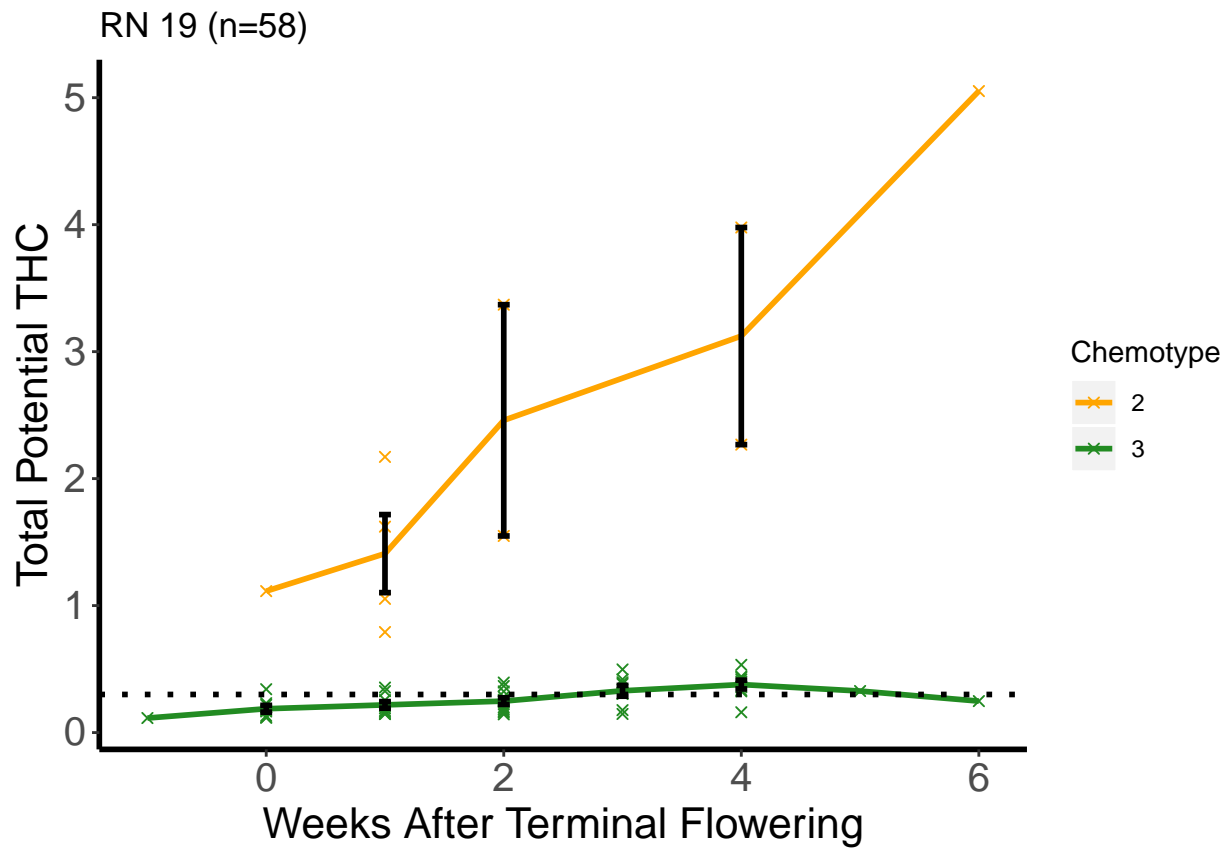
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



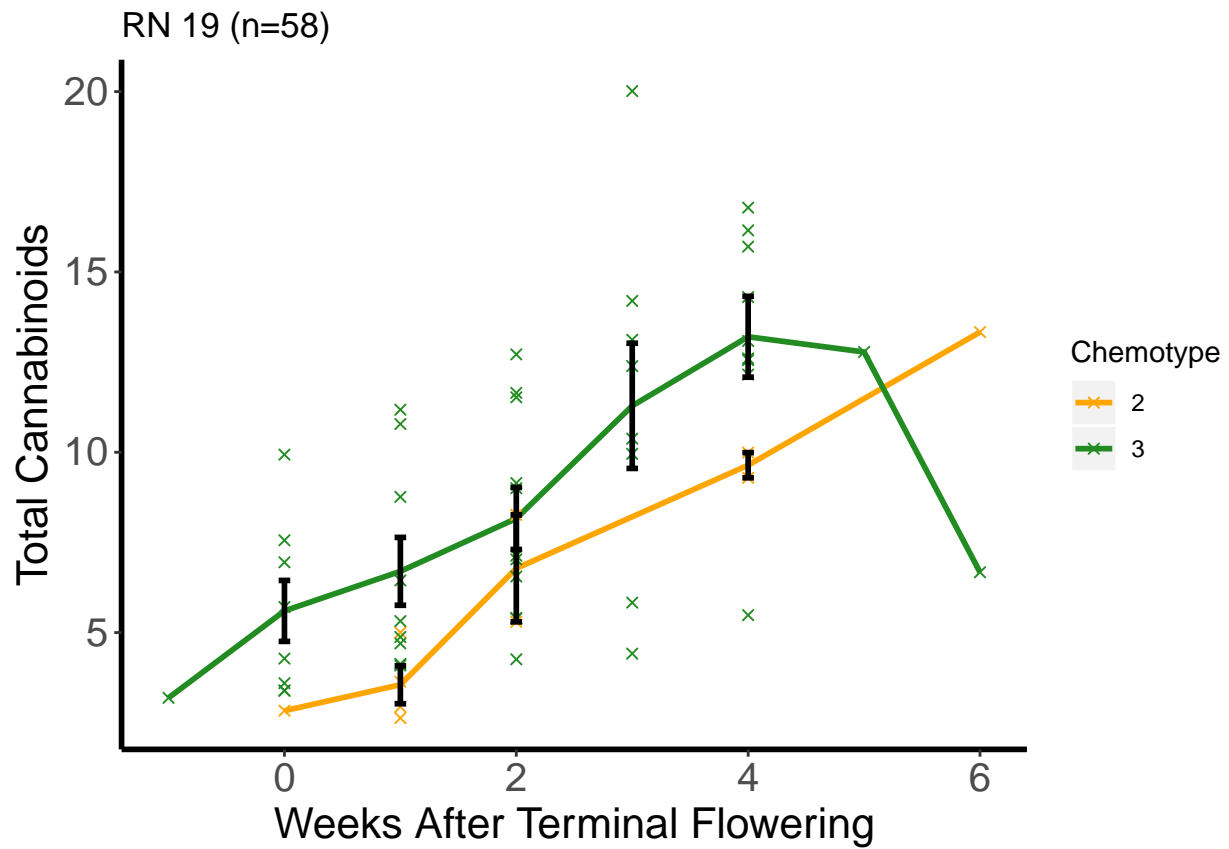
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



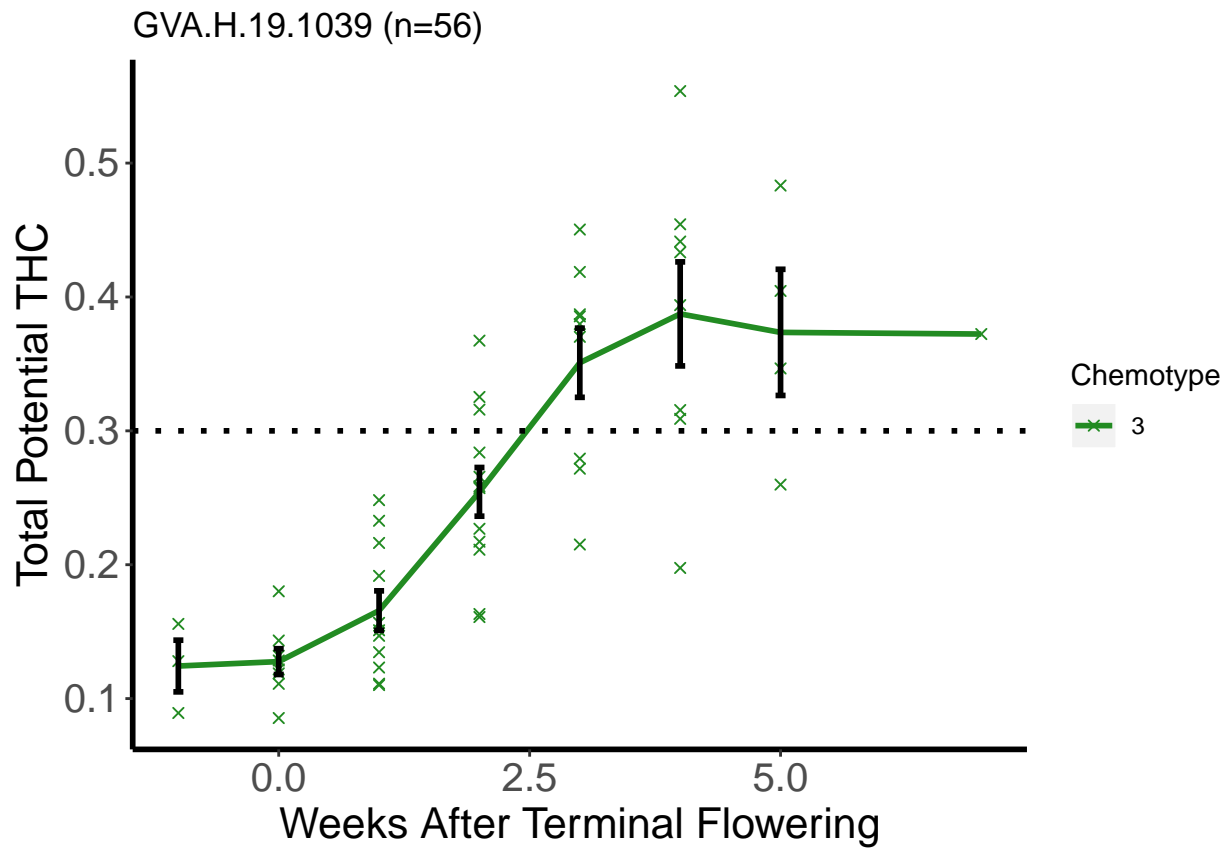
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



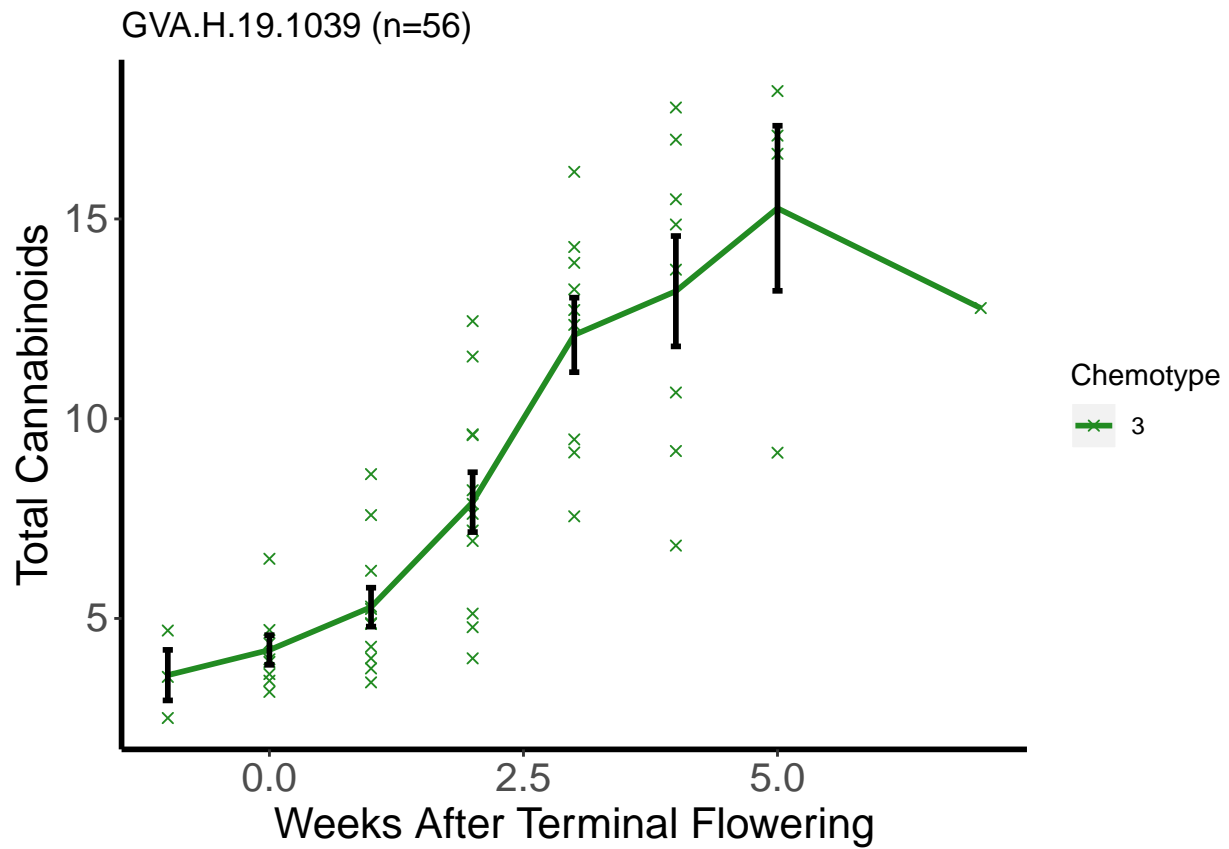
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



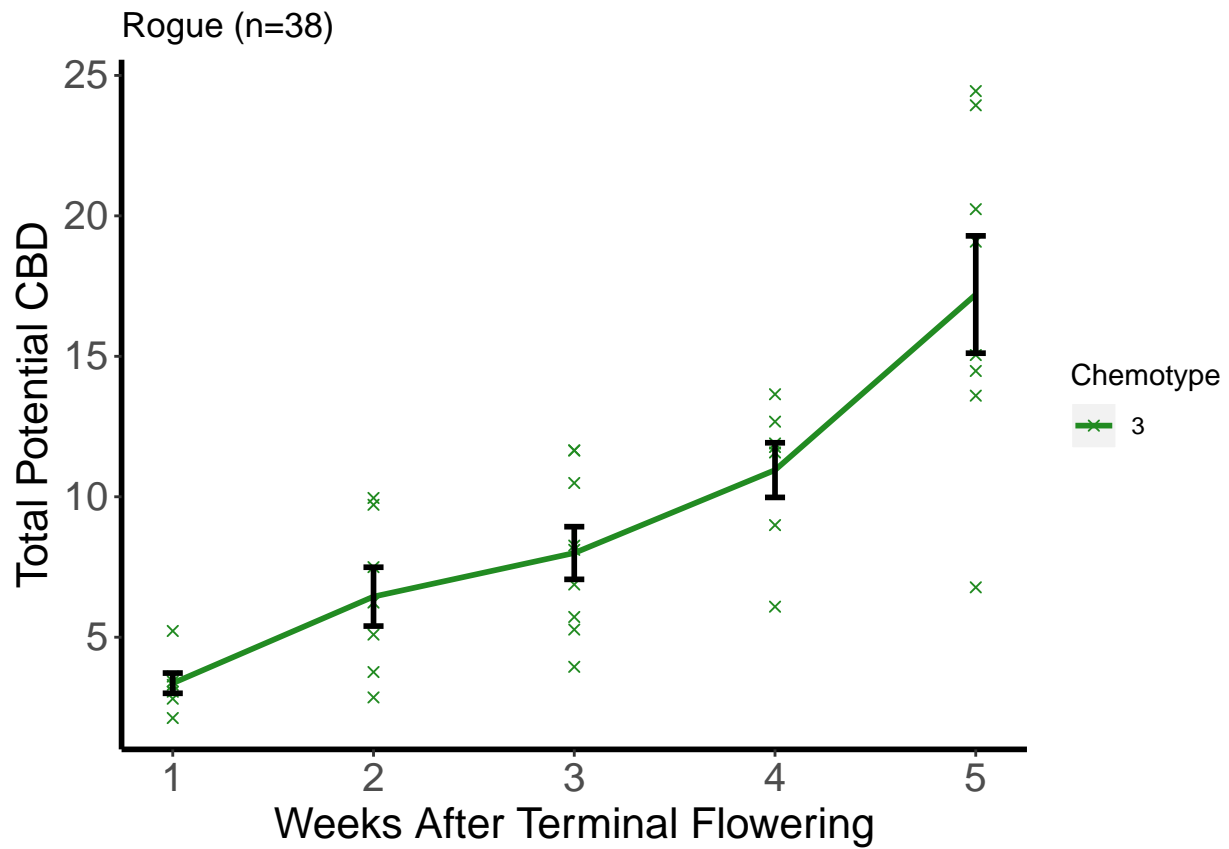
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



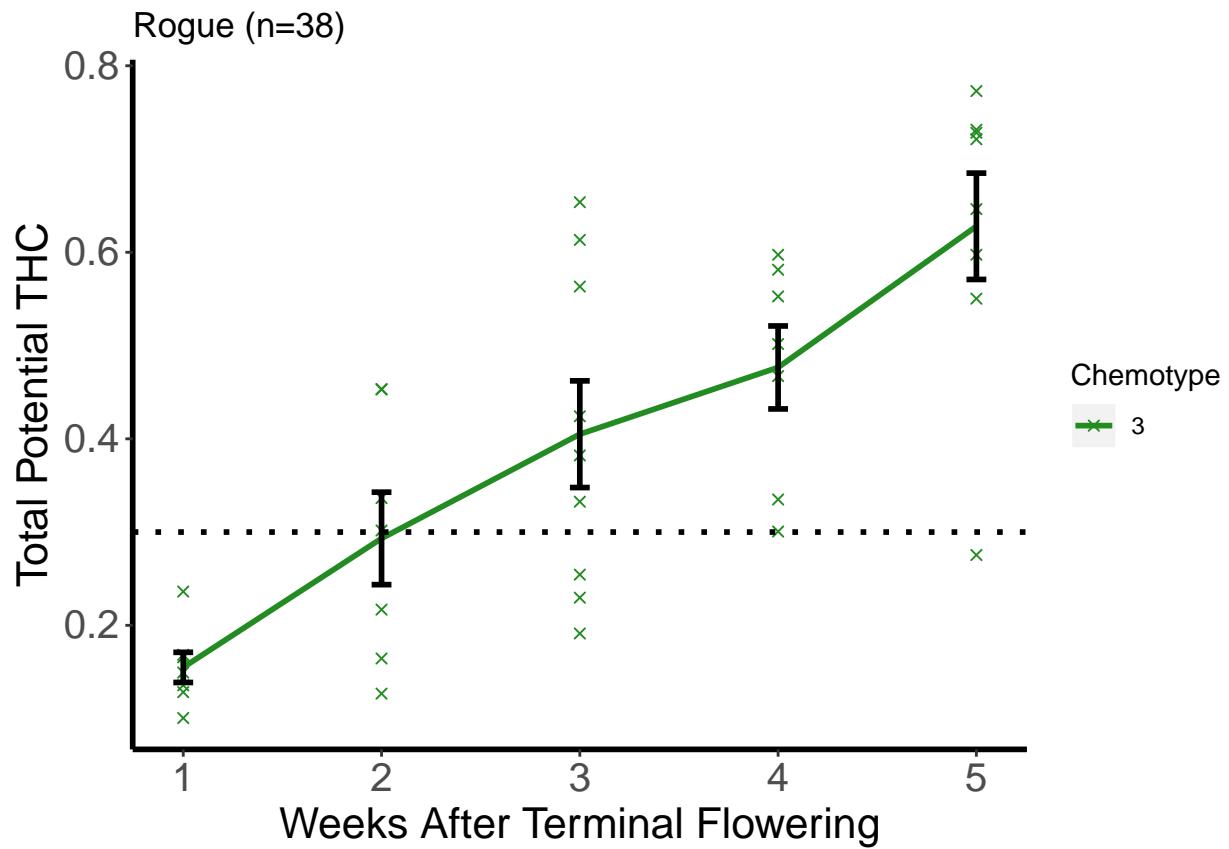
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```

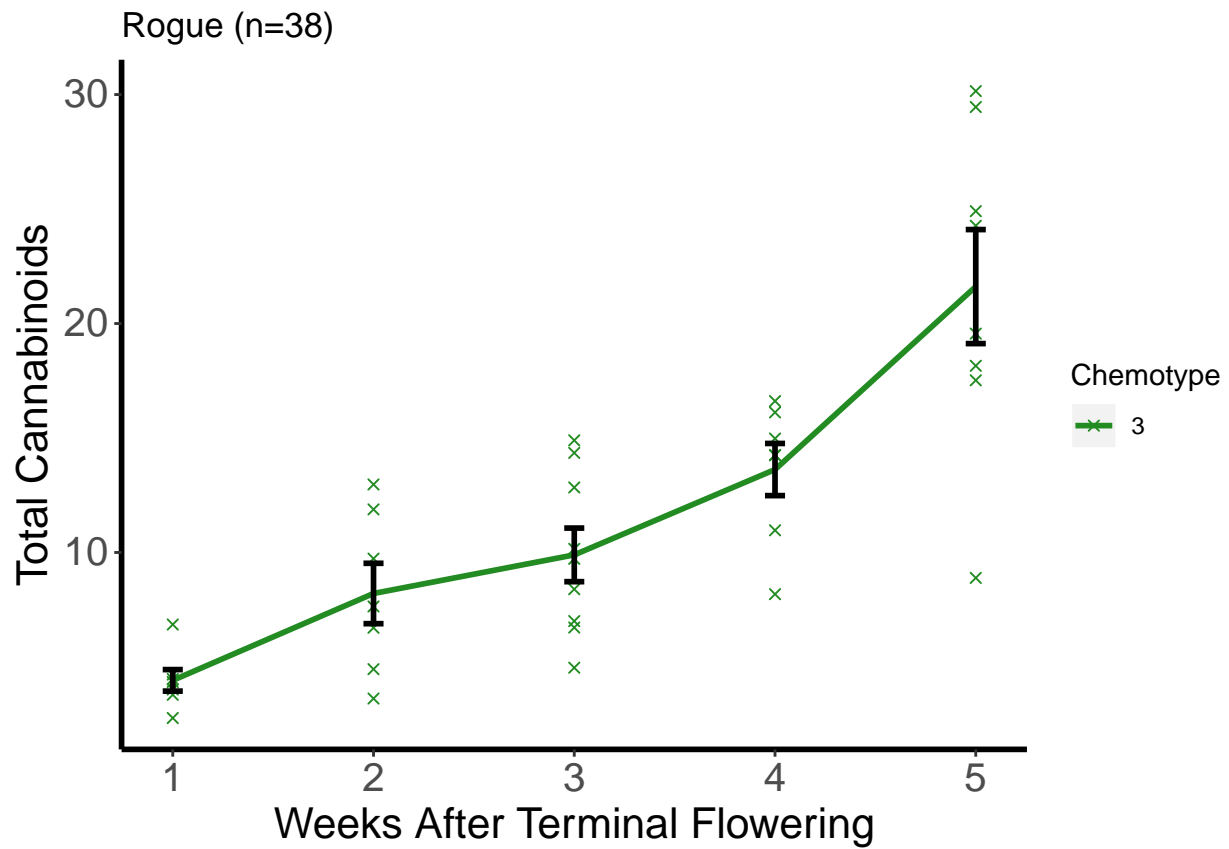
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



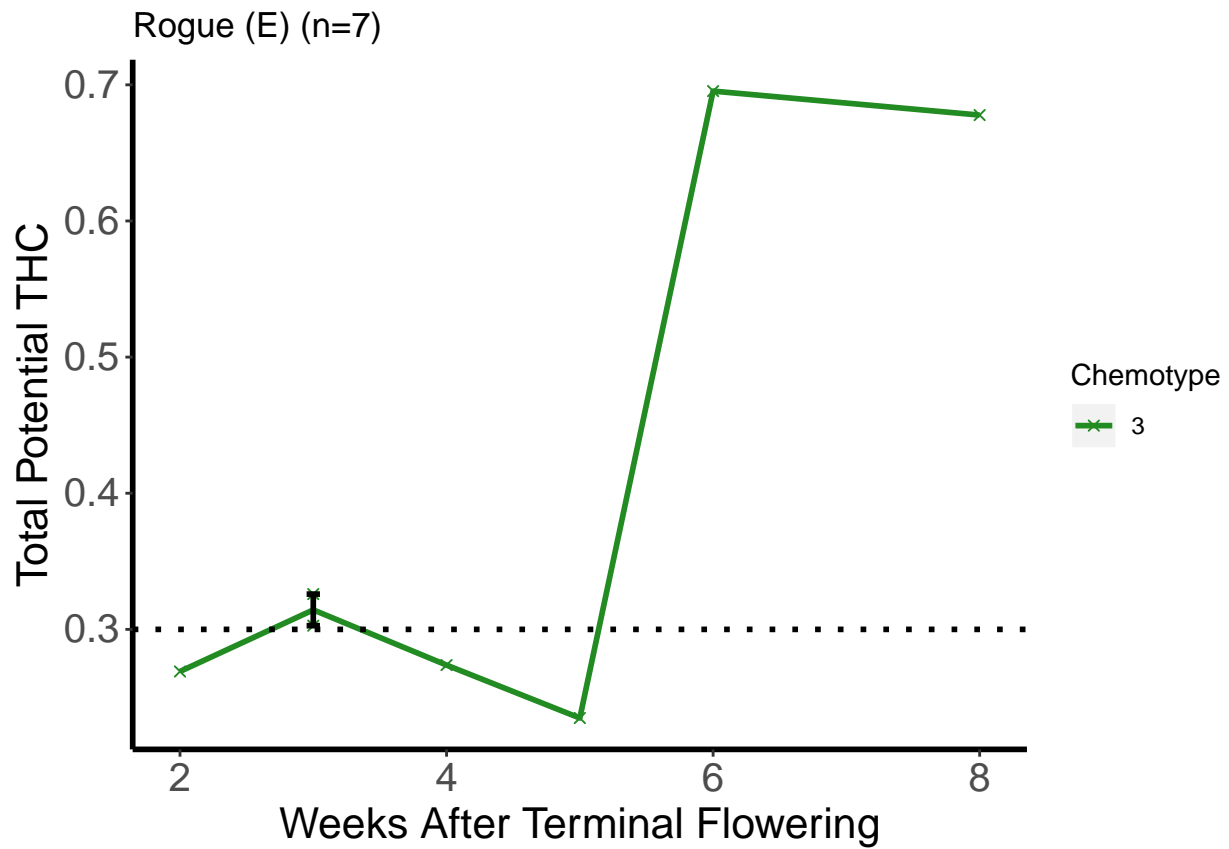
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



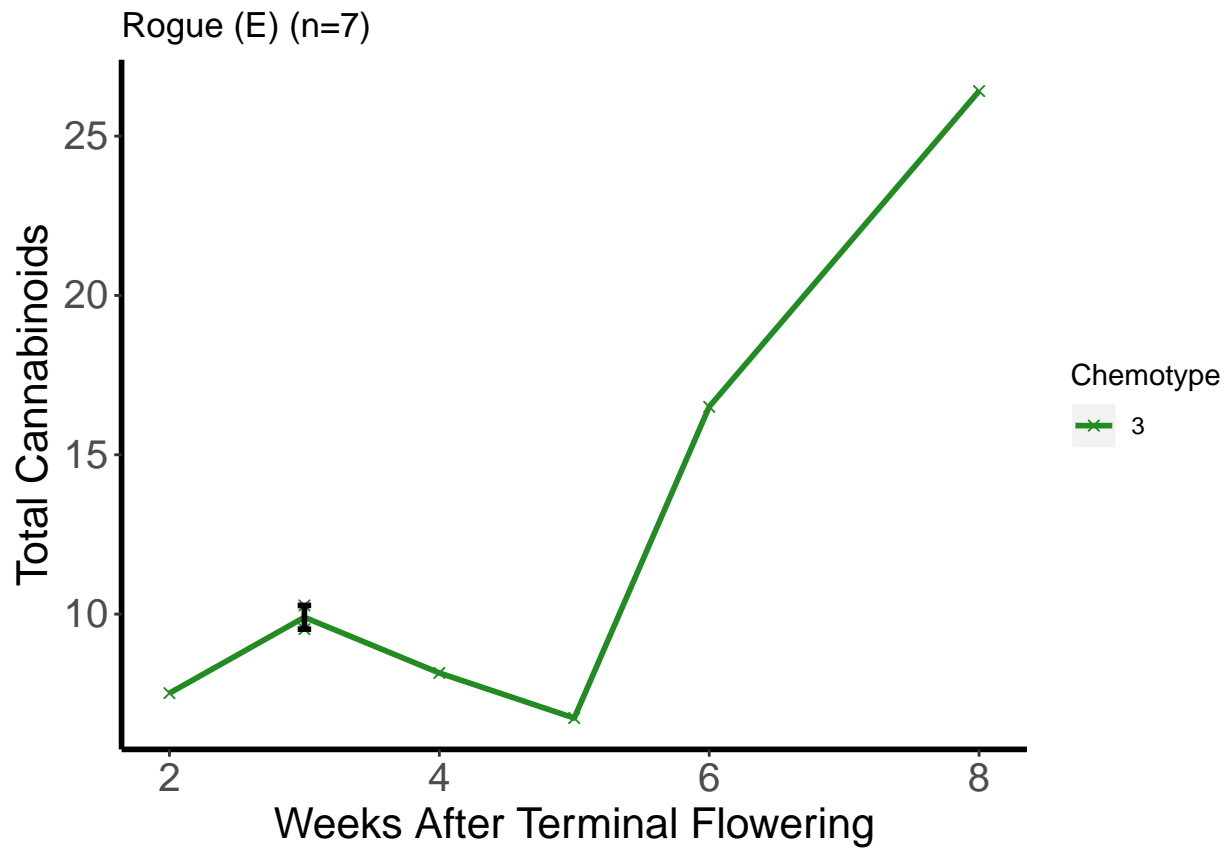
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



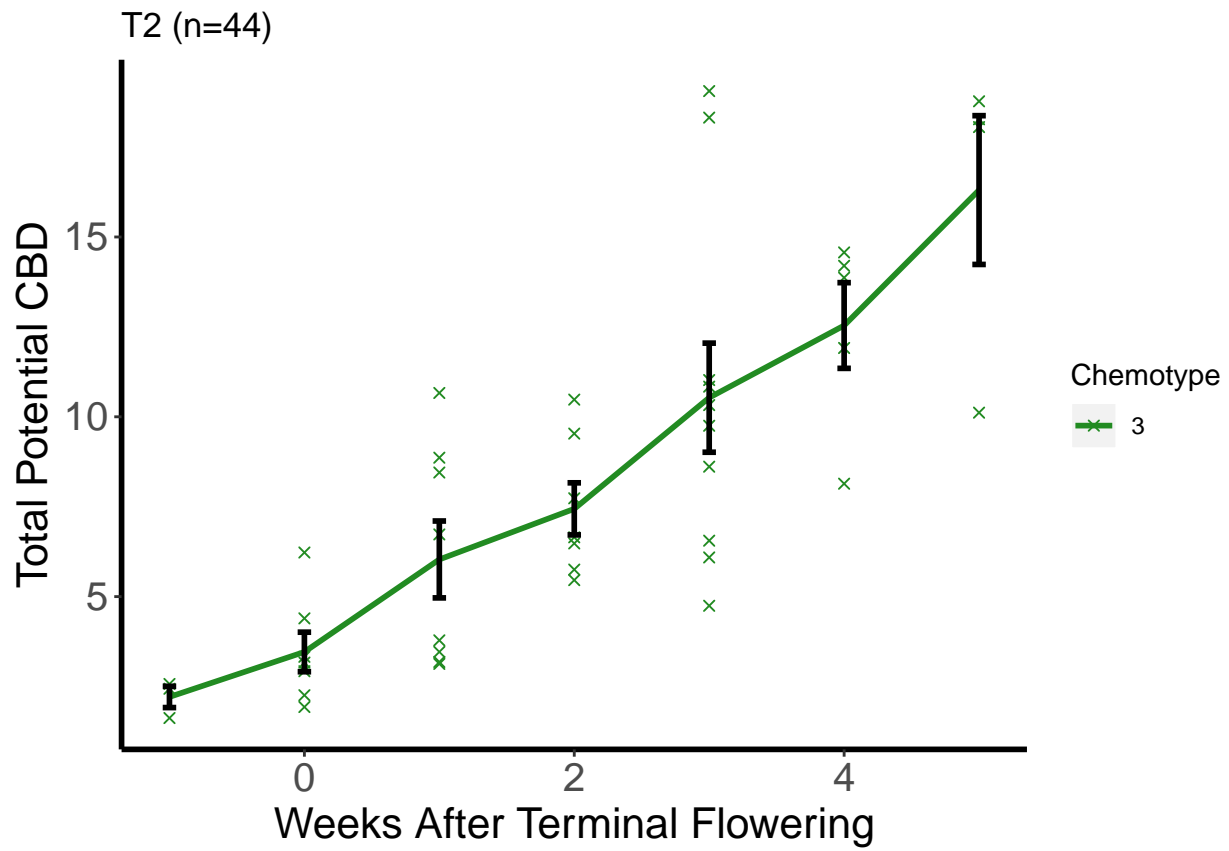
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



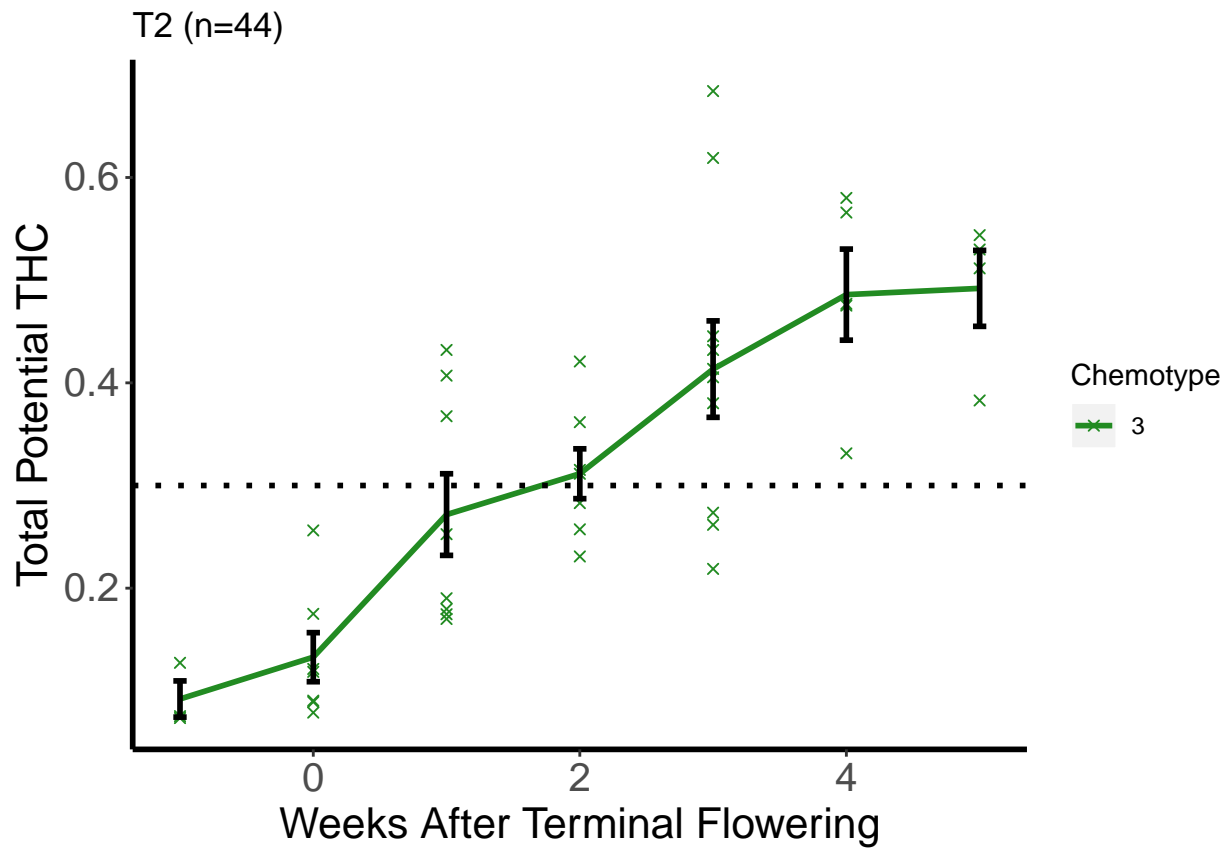
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



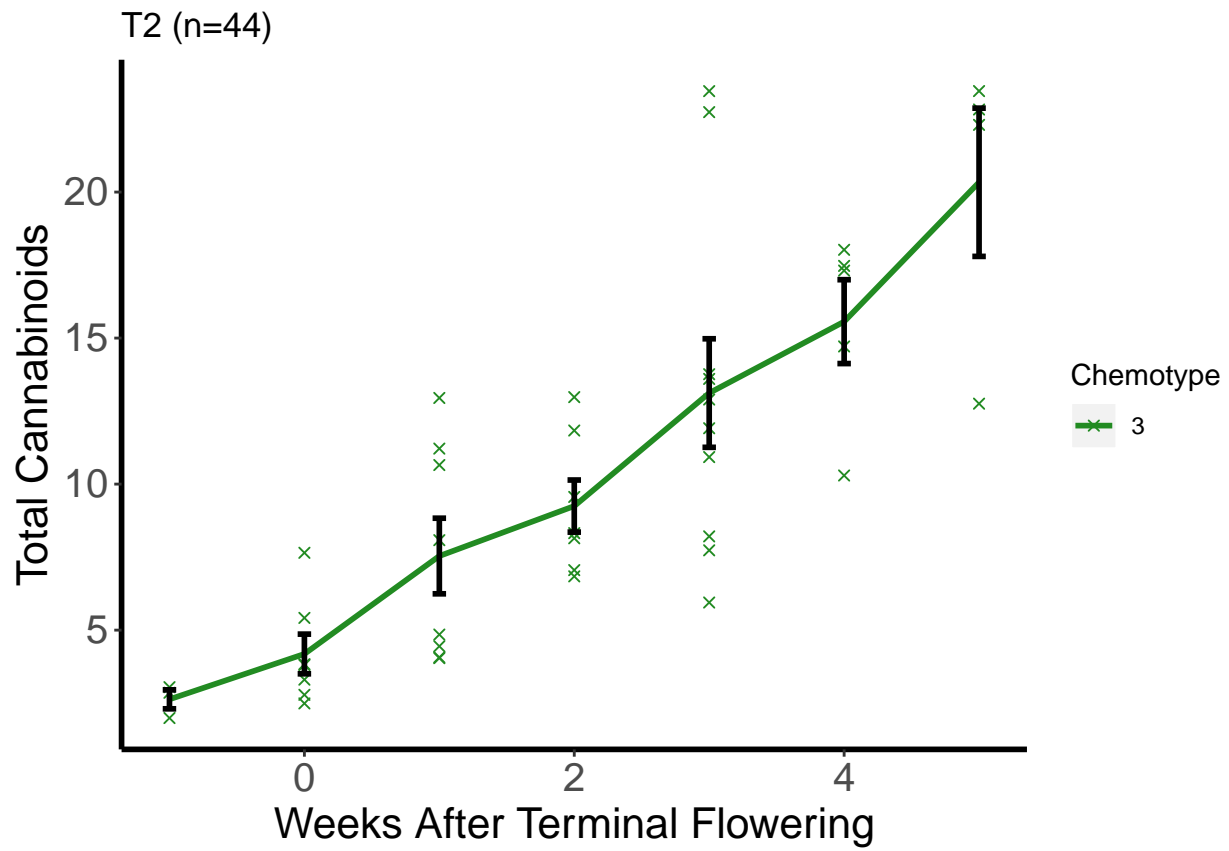
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



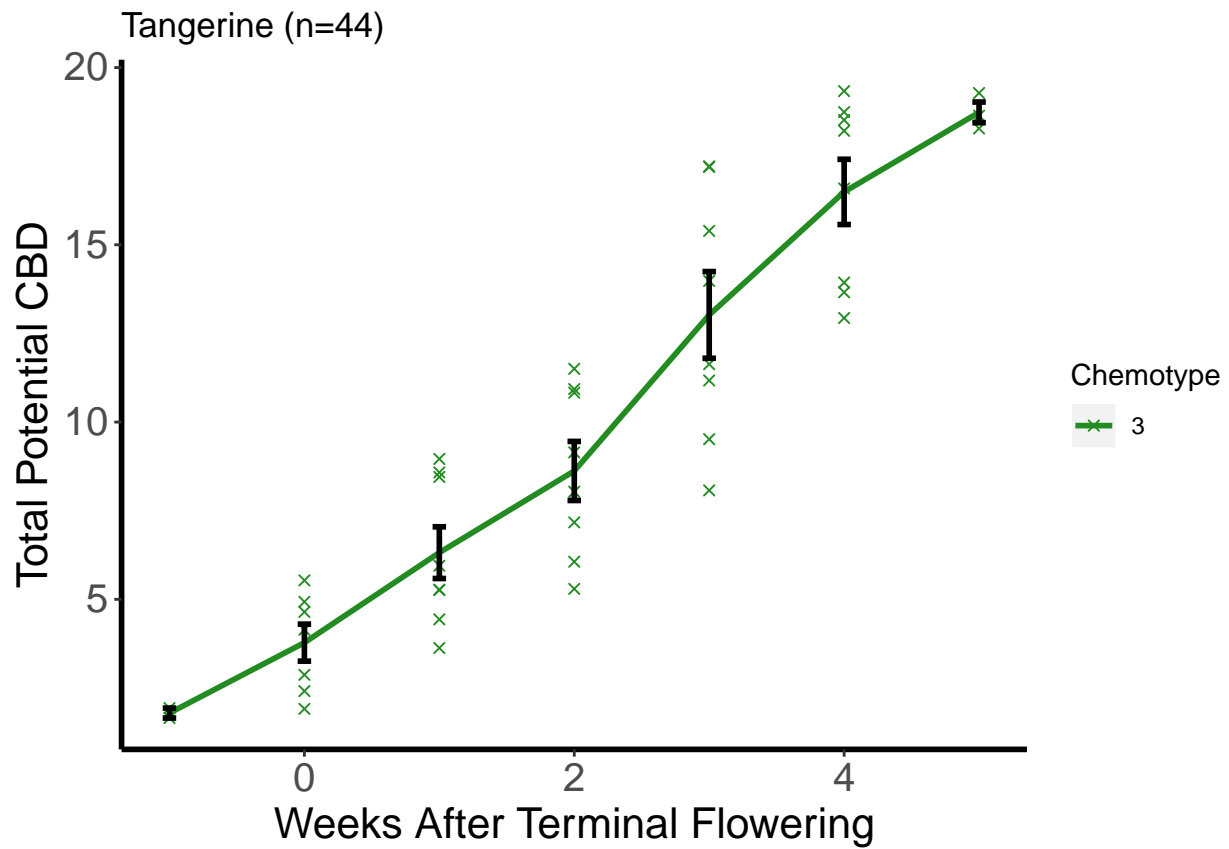
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```

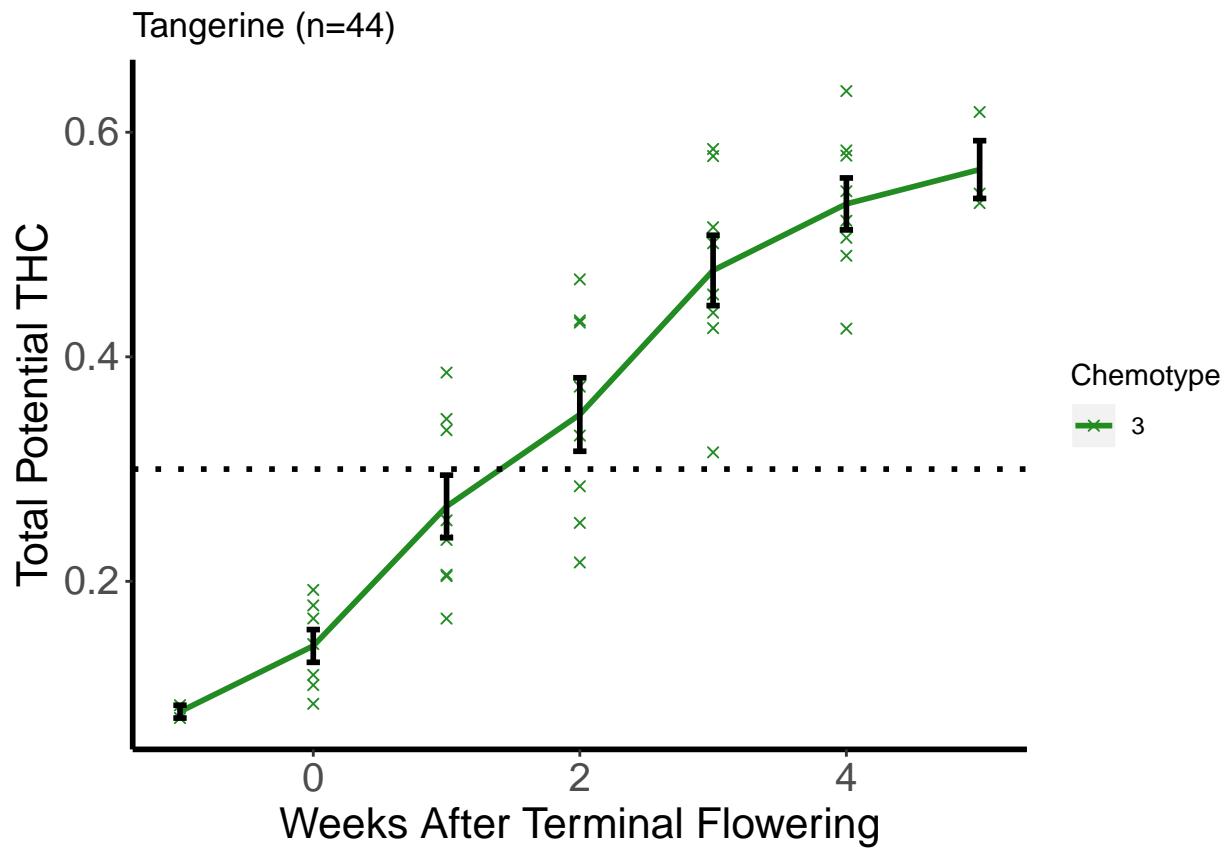
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



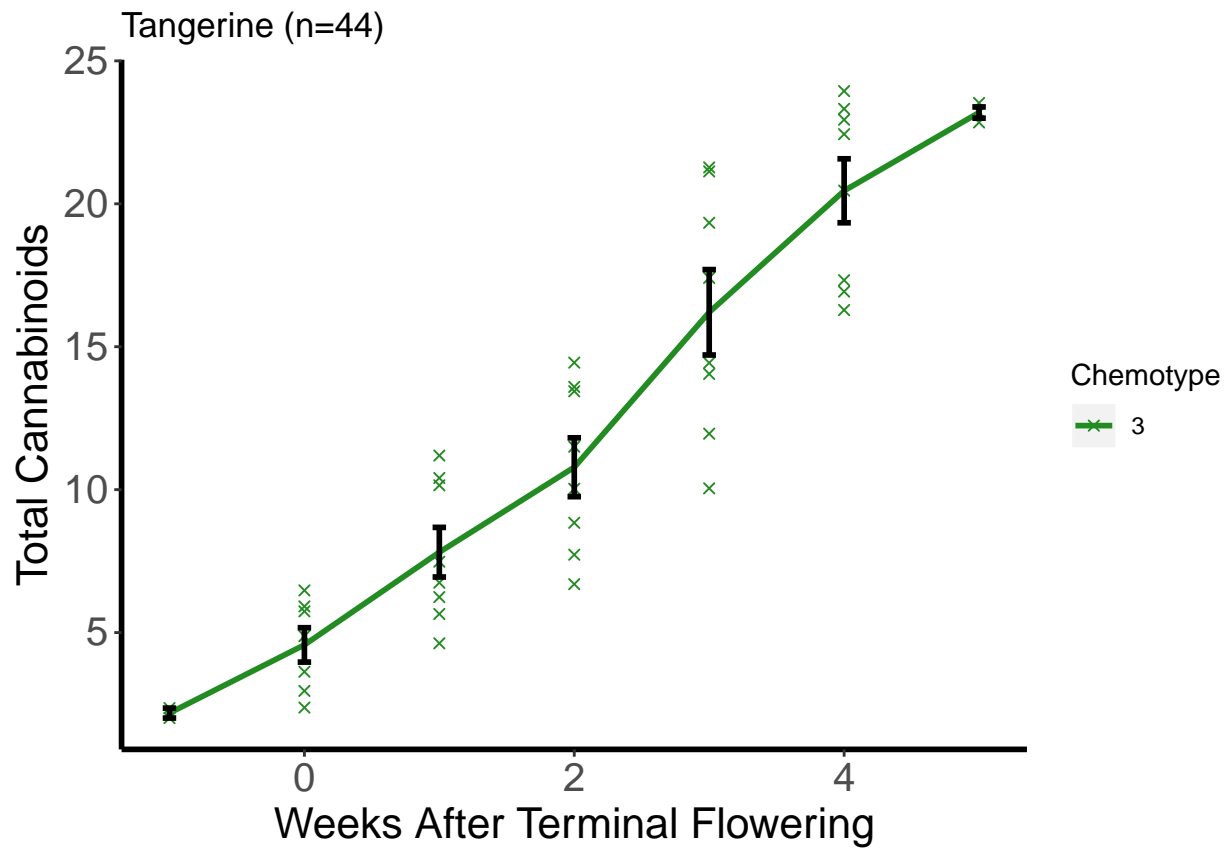
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



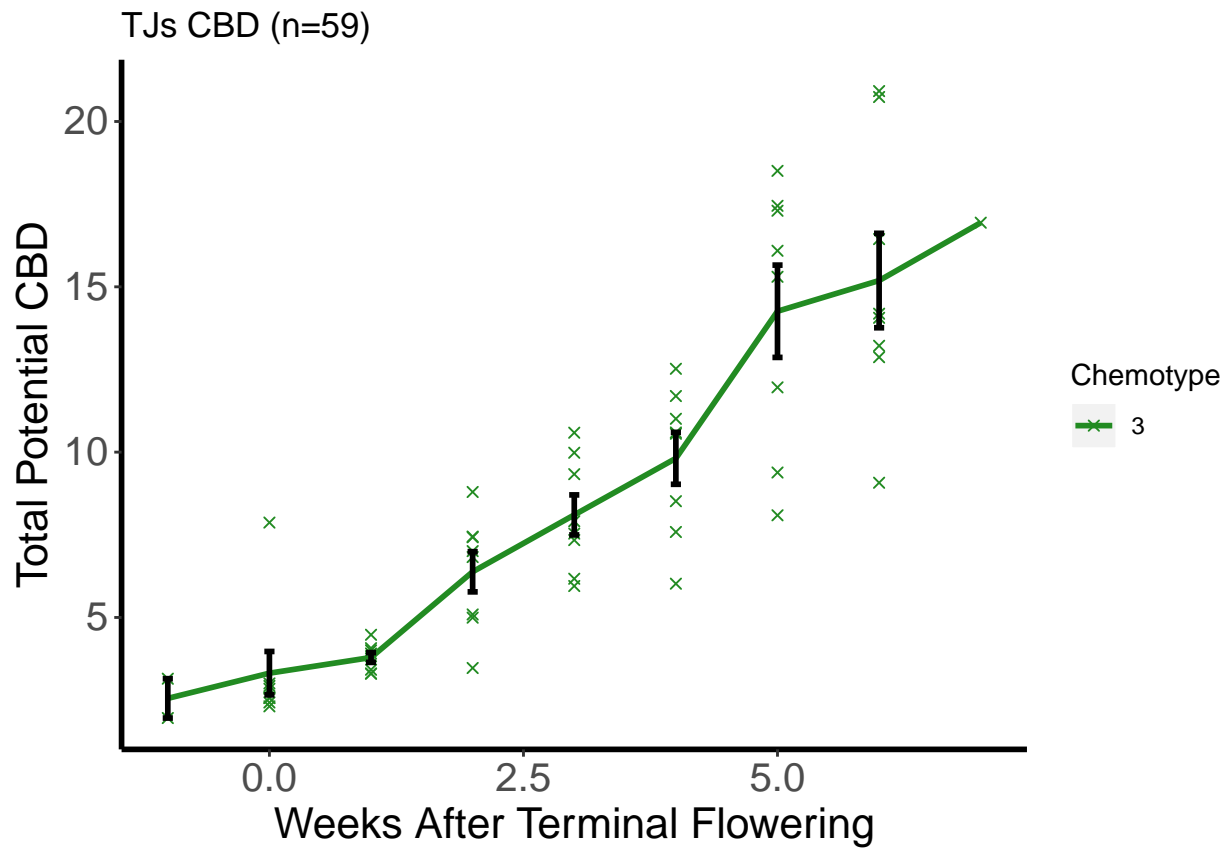
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



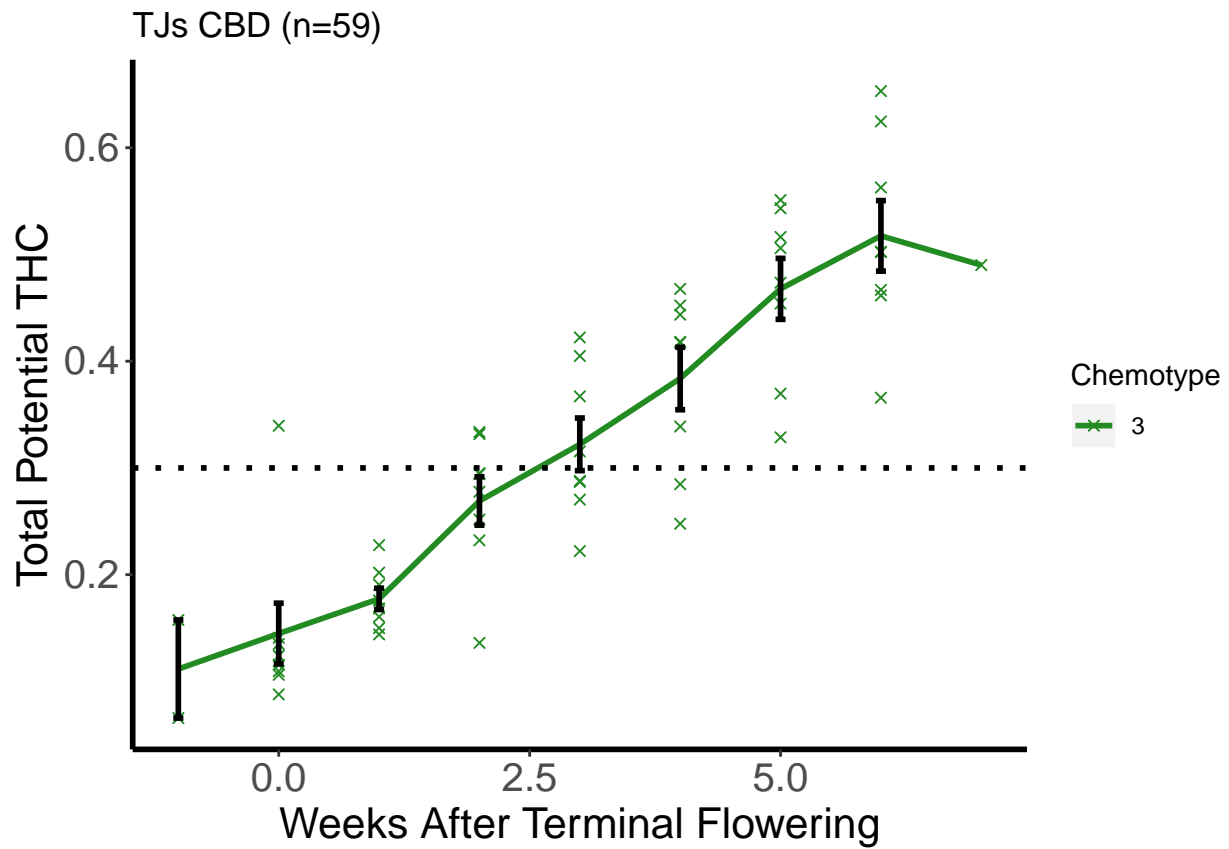
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



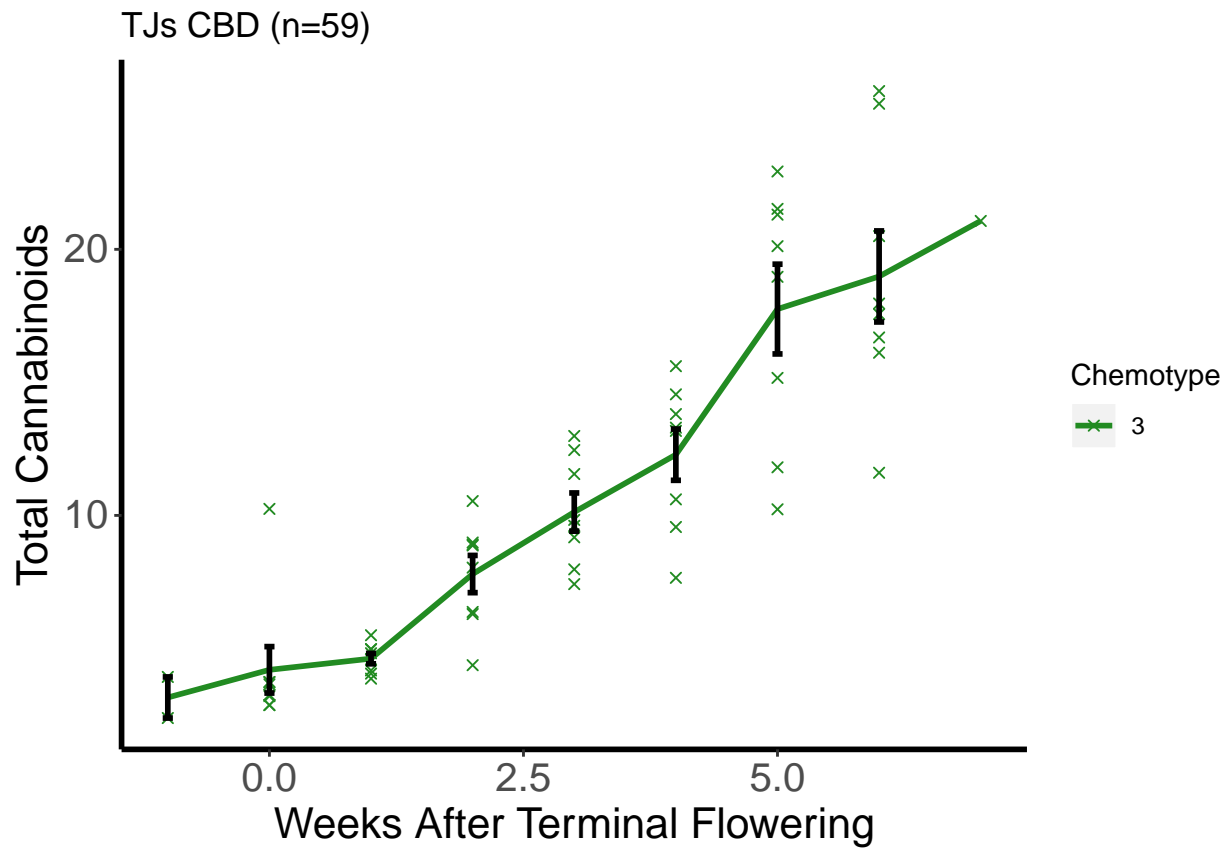
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



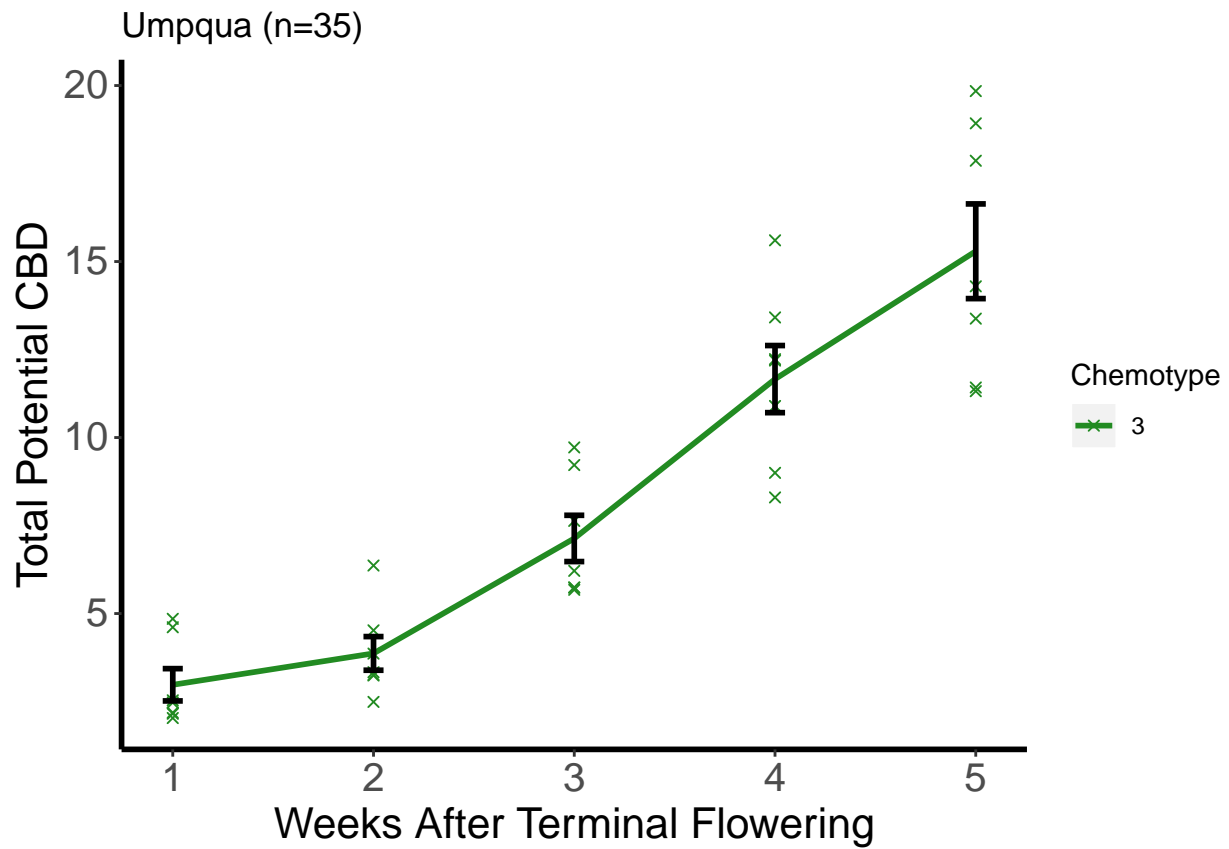
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



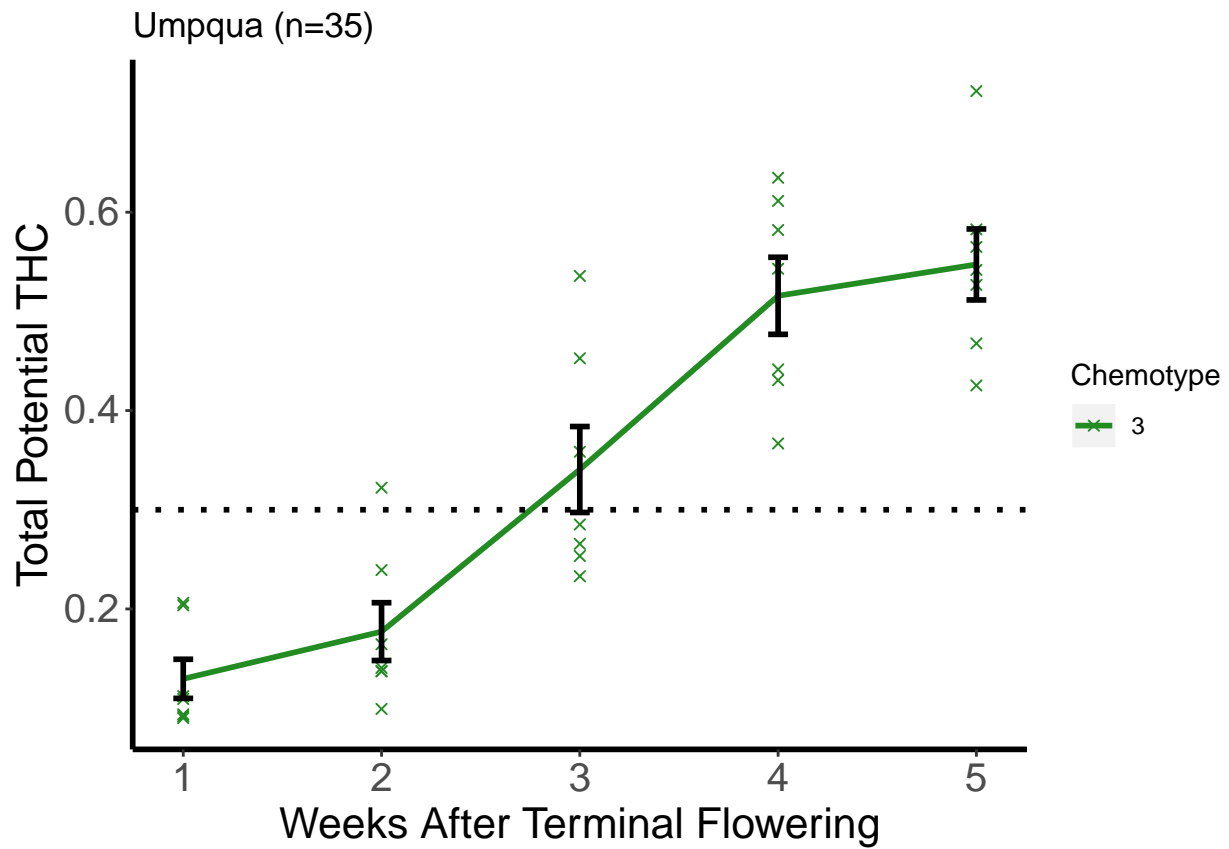
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```



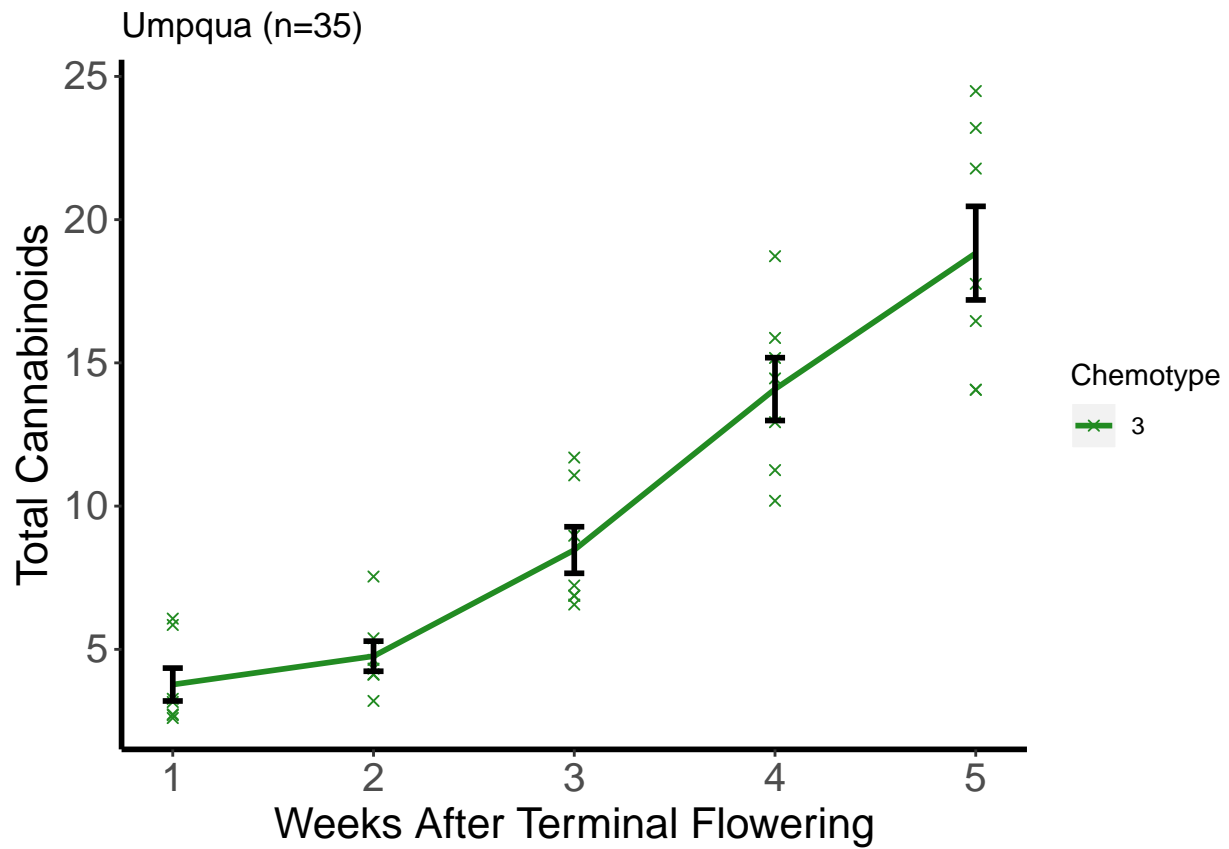
```
## No summary function supplied, defaulting to `mean_se()`
## No summary function supplied, defaulting to `mean_se()`
```

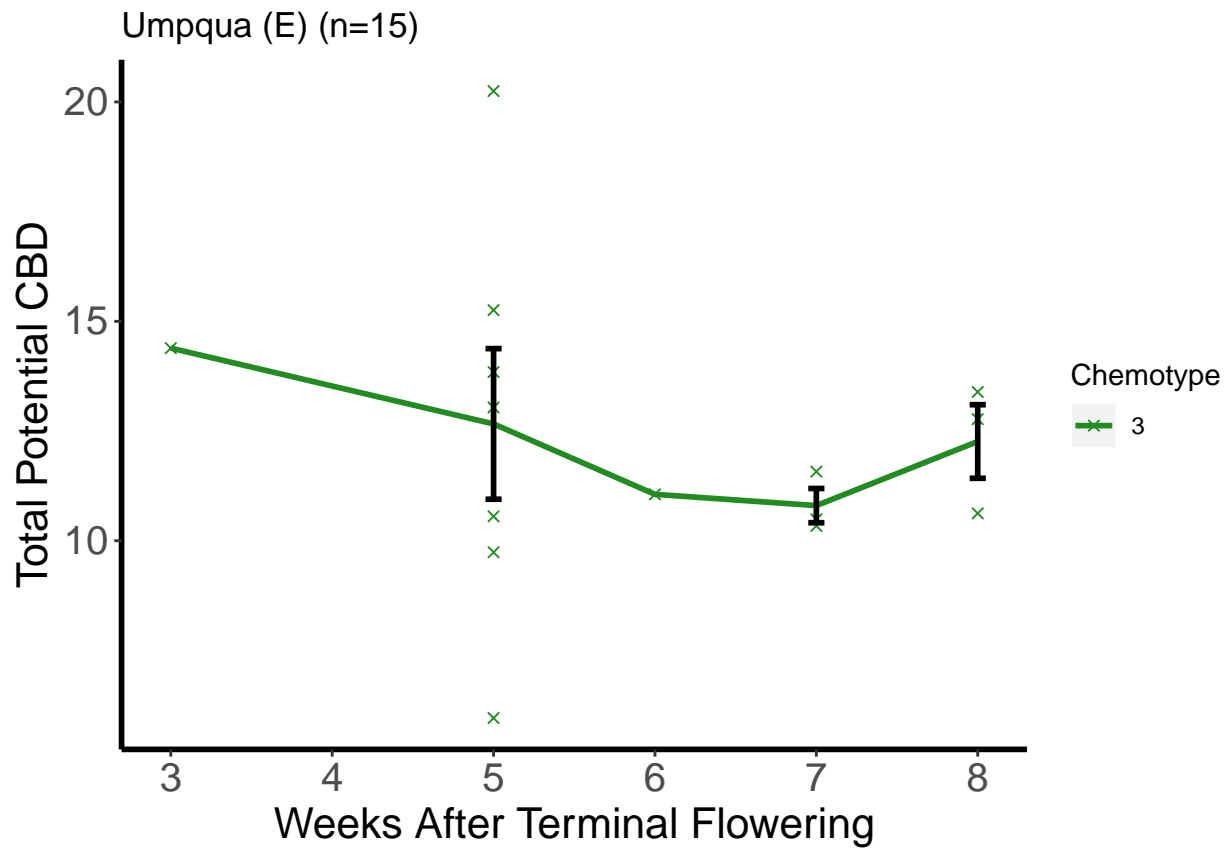
```
## No summary function supplied, defaulting to `mean_se()`  
## No summary function supplied, defaulting to `mean_se()`
```



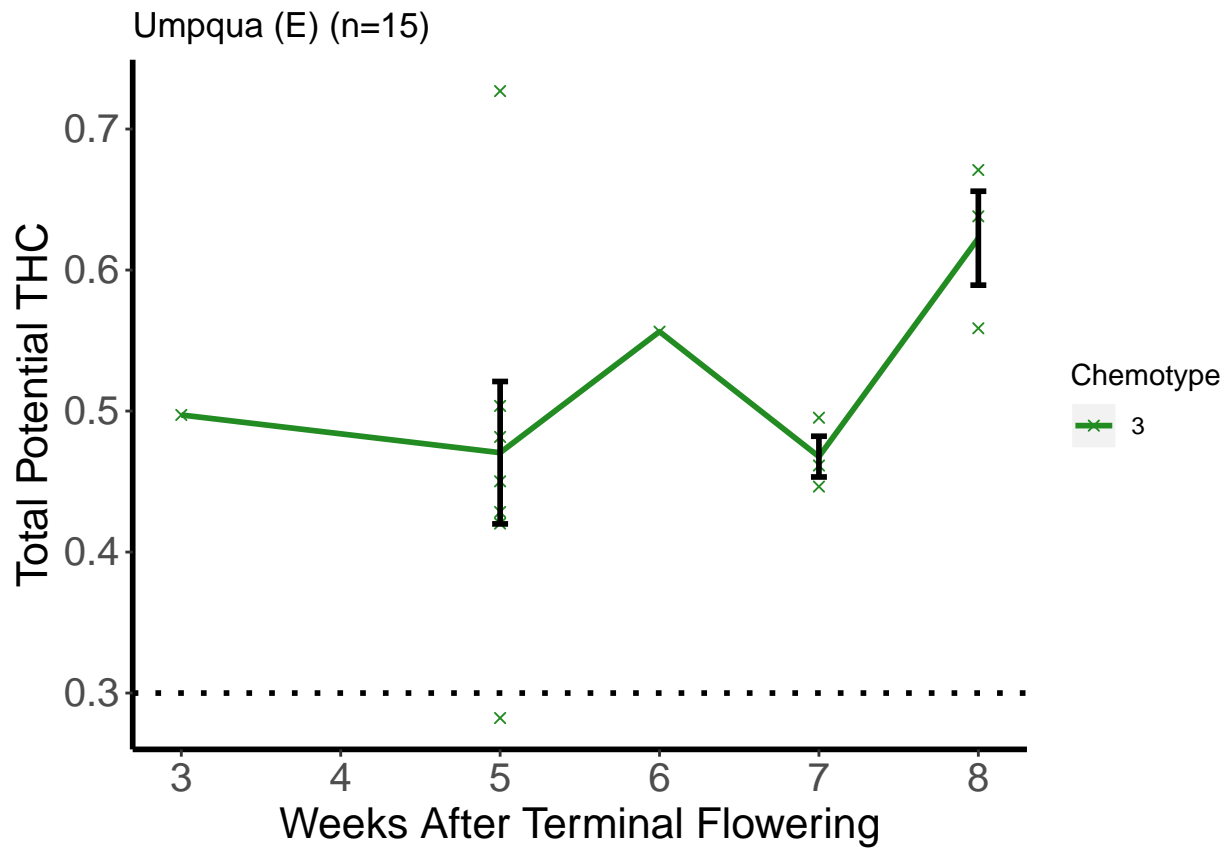
```
## No summary function supplied, defaulting to `mean_se()`  
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