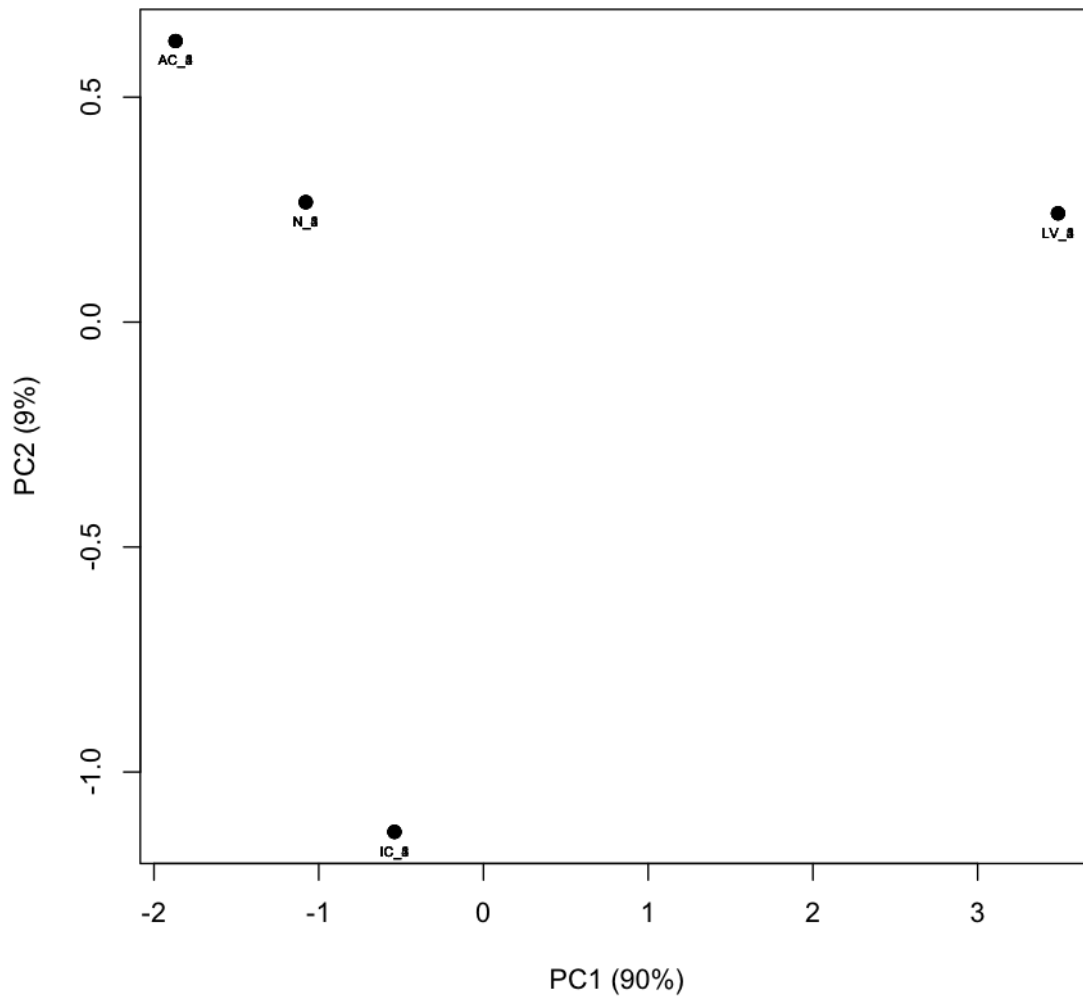


First Run:



```
lm(Total~sites+ WCP + PPP + pH + MO + N + P + K + cl + sand + ashes + CT + N_grass)
```

```
> anova(fm)
```

Analysis of Variance Table

Response: Total

	Df	Sum Sq	Mean	Sq F value	Pr(>F)
sites	3	619.3	206.4	3.0355	0.15571
WCP	1	587.3	587.3	8.6357	0.04245 *
PPP	1	124.5	124.5	1.8303	0.24751
pH	1	1275.6	1275.6	18.7548	0.01234 *
MO	1	9.6	9.6	0.1406	0.72672
N	1	21.0	21.0	0.3085	0.60820
P	1	4564.0	4564.0	67.1055	0.00121 **

K	1	518.0	518.0	7.6160	0.05087
cl	1	469.2	469.2	6.8993	0.05839
sand	1	32.8	32.8	0.4826	0.52547
ashes	1	164.7	164.7	2.4213	0.19468
CT	1	126.9	126.9	1.8663	0.24366
N_grass	1	1013.5	1013.5	14.9022	0.01814 *
Residuals	4	272.1	68.0		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Second Run

fm=lm(Total~sites+ WCP + PPP + pH + MO + N + P + K + cl + sand + ashes + CT + N_grass)

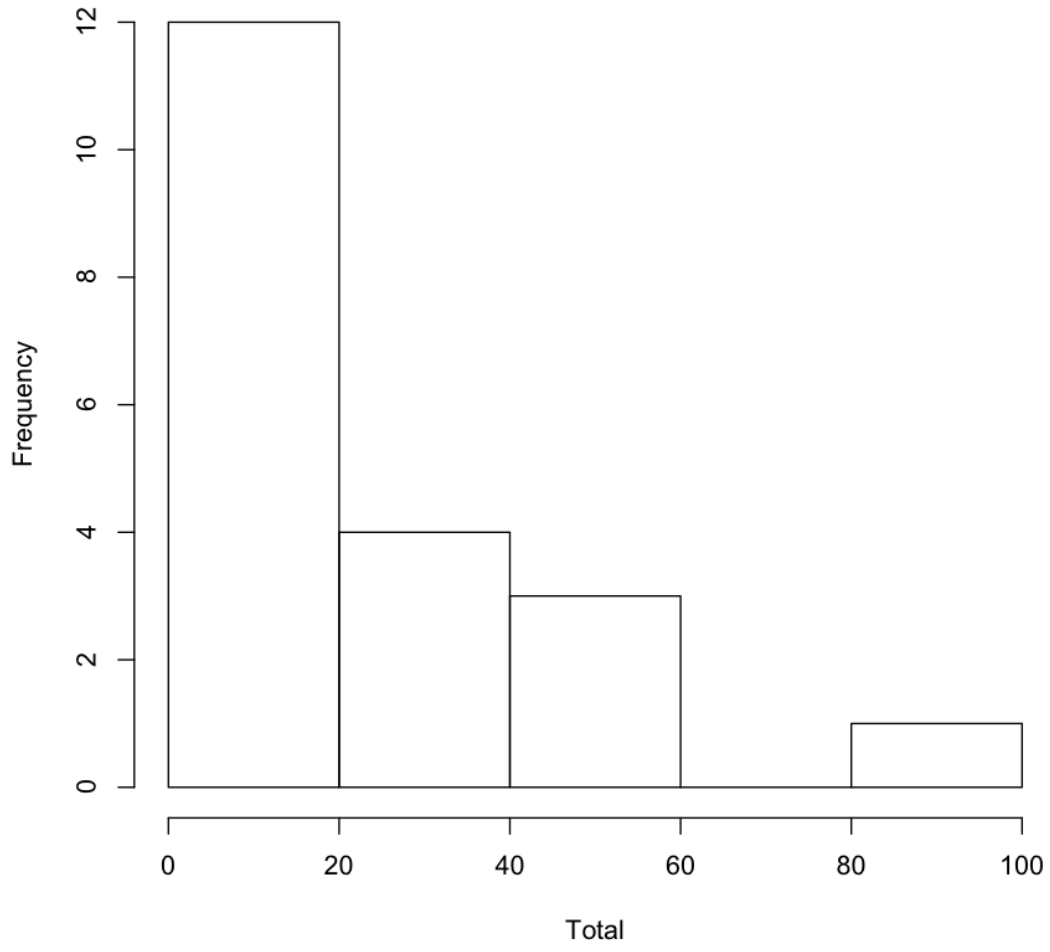
Analysis of Variance Table

Response: Total

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
sites	3	619.3	206.4	3.0355	0.15571
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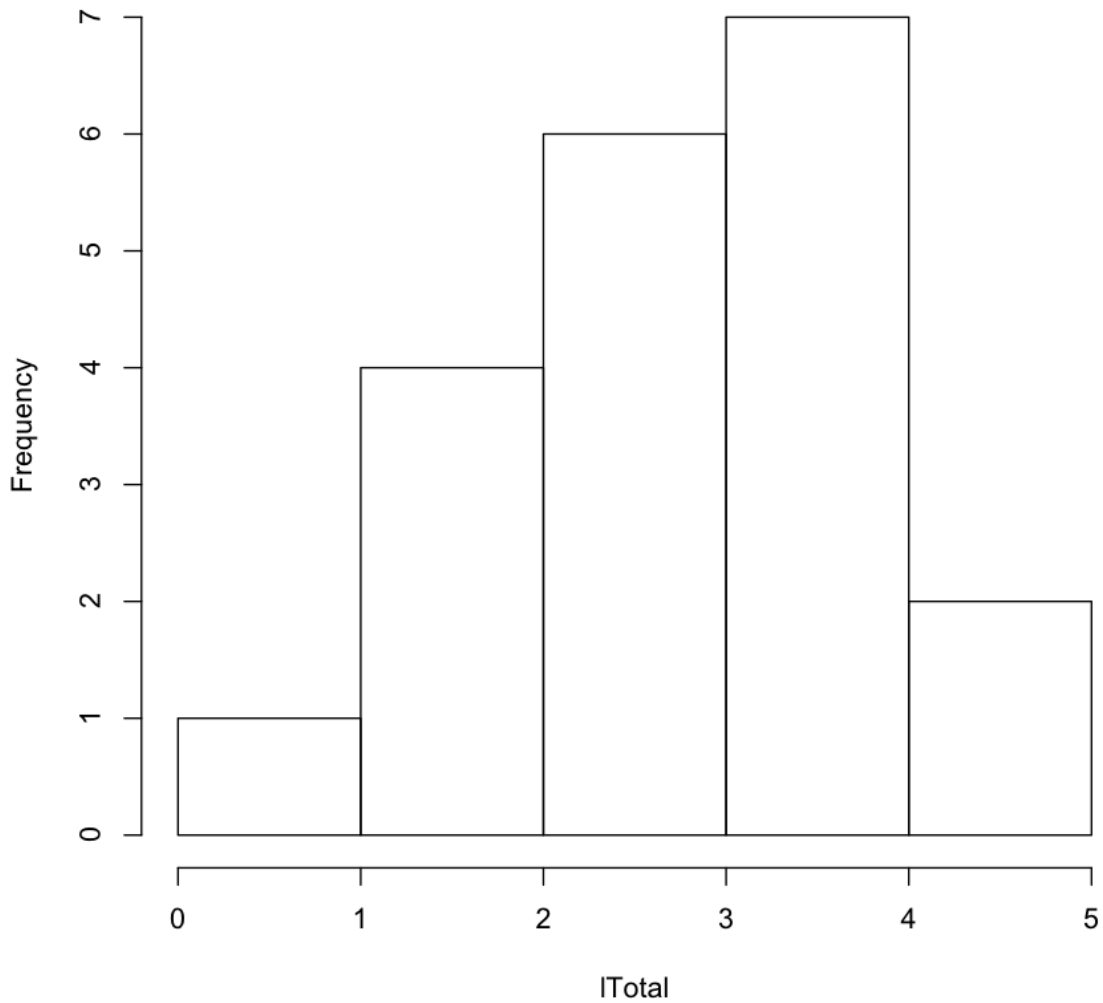
Residuals 4 272.1 68.0

Histogram of Total



$I_{\text{Total}} = \log(\text{Total} + 1)$:

Histogram of ITotal



```
fm=lm(ITotal~sites+ WCP + PPP + pH + MO + N + P + K + cl + sand + ashes + CT +
N_grass)
> anova(fm)
Analysis of Variance Table
```

Response: ITotal

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
sites	3	2.7469	0.9156	5.5701	0.065263
WCP	1	2.0907	2.0907	12.7181	0.023454 *
PPP	1	0.5828	0.5828	3.5451	0.132845
pH	1	1.9053	1.9053	11.5902	0.027166 *
MO	1	0.0020	0.0020	0.0120	0.918032
N	1	0.0012	0.0012	0.0072	0.936305

P	1	5.1139	5.1139	31.1092	0.005065 **
K	1	0.0971	0.0971	0.5909	0.484959
cl	1	1.3530	1.3530	8.2304	0.045520 *
sand	1	0.1181	0.1181	0.7183	0.444444
ASHES	1	0.9375	0.9375	5.7033	0.075318
CT	1	0.0222	0.0222	0.1348	0.732076
N_grass	1	3.5100	3.5100	21.3525	0.009875 **
Residuals	4	0.6575	0.1644		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Third Run

fm_mixed=lme(ITotal~ WCP + PPP + pH + MO + N + P + K + cl + sand + ashes + CT + N_grass,random=~1|sites)

Linear mixed-effects model fit by REML

Data: NULL

Log-restricted-likelihood: -23.93365

Fixed: ITotal ~ WCP + PPP + pH + MO + N + P + K + cl + sand + ashes + CT + N_grass

(Intercept)	WCP	PPP	pH	MO	N
9.56239925	-0.20954059	0.47615246	0.82853310	0.13106430	-17.22868251

P	K	cl	sand	ASHES	CT
0.01808636	-0.88123883	-0.14768821	-0.01247205	-0.56563981	-0.01562934

N_grass
2.99484764

Random effects:

Formula: ~1 | sites

(Intercept) Residual

StdDev: 8.196671e-05 0.3971877

Number of Observations: 20

Number of Groups: 4
