1.LOGIT METHOD

To calculate fractions: (table 1 in excel example)
Number of all living specimens or total fresh biomass, length of root, shoot in the control divide per your result
For example:
Average number of shoot length =0.85, in the control =8.5 (for ex. for concentration 50%)
Fraction (F)= 0.85/8.5 if the result is more than 1 you should do additionally subtraction like this: (1 – your result)
2. To calculate logit (Y): y=log(F/1-F)
F= fraction
(table 2 in excel example)
You should also calculate log from concentrations (log C)
3 Then you make a graph (chart)
Axis X= log c
Axis Y = log (F/1-F)
4. You should add trend line and regression formula/ equation (double click on trend line)
It should be like this : y=1.5x-1.2
R^2=0.87 (R should be > 0.5)
1.5 in our example is B value
1.2 in our example is A value so general equation would be Y= Bx-A
5. then you should calculate IC (inhibition concentration)
IC/LC_{50} = ((log P/1-P)-A)/B
P for IC/LC_{50} = 0.5
So after simplification
log (IC/LC_{50}) = -(A)/B

you could also calculate IC_{20} it depends on your results for IC_{20} P= 0.2

the results are in the last two lines in the table 2 in the excel example, finally you calculate IC/LC_{50} or IC/LC_{20} not log IC/LC_{50} or log IC/LC_{20} (last line of table 2)
You should calculate IC/LC separately for length of shoot, root, fresh biomass
good luck !!!!

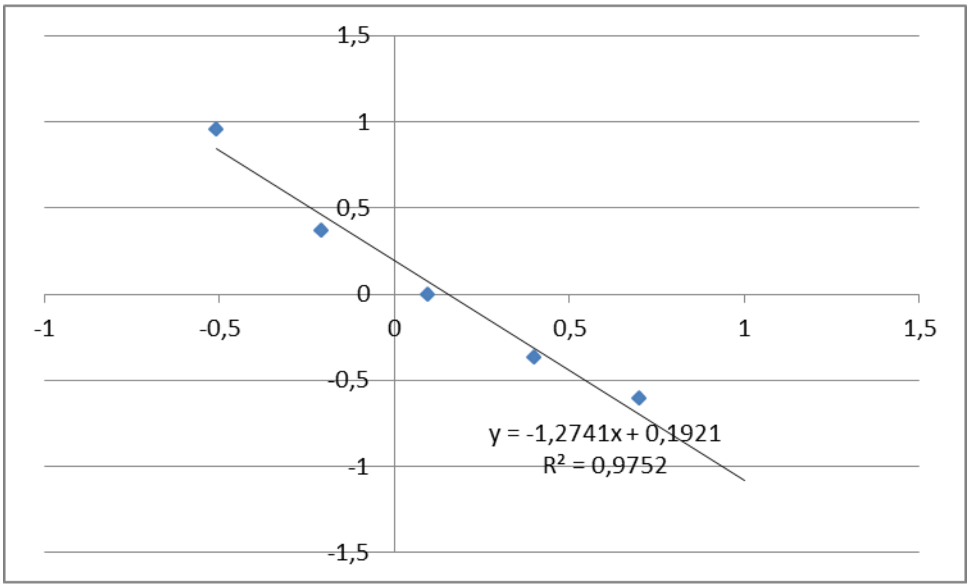
Example:

Table

control	0,31	0,62	1,25	2,5	5	10
10	9	7	5	3	2	0
10	9	7	5	3	2	0
	0,9	0,7	0,5	0,3	0,2	0

LogC	Logits
1	Rejected value (R)

0,70	-0,60205999
0,40	-0,36797679
0,10	0
-0,21	0,36797679
-0,51	0,95424251



Results y = Bx- a
- 0,1921/-1,2741

log c	0,15077309
LC 50	1,41505427

2 REED METHOD

Table 1. The example of results for the calculation of LC_{50} by the Reed method.

Concentration	Number of animals		Number of animals after cumulation			Percentage of mortality
mg/dm^3	dead	alive	dead	alive	studied	P=m•100/b
1.0	2	8	2	10	12	16.6
2.0	8	2	10	2	12	83.33
4.0	10	0	20	0	20	100

Calculation of LC_{50} : $\log LC_{50} = \log x + k \cdot \log i$
k=(50–P1)/(P2–P1)
x – concentration causing the nearest 50% of mortality
i – quotient of geometric progression (1.1 ... 2.0)
k –coefficient
P1 –cumulative % of mortality lower than 50%
P2 – cumulative % of mortality higher than 50%