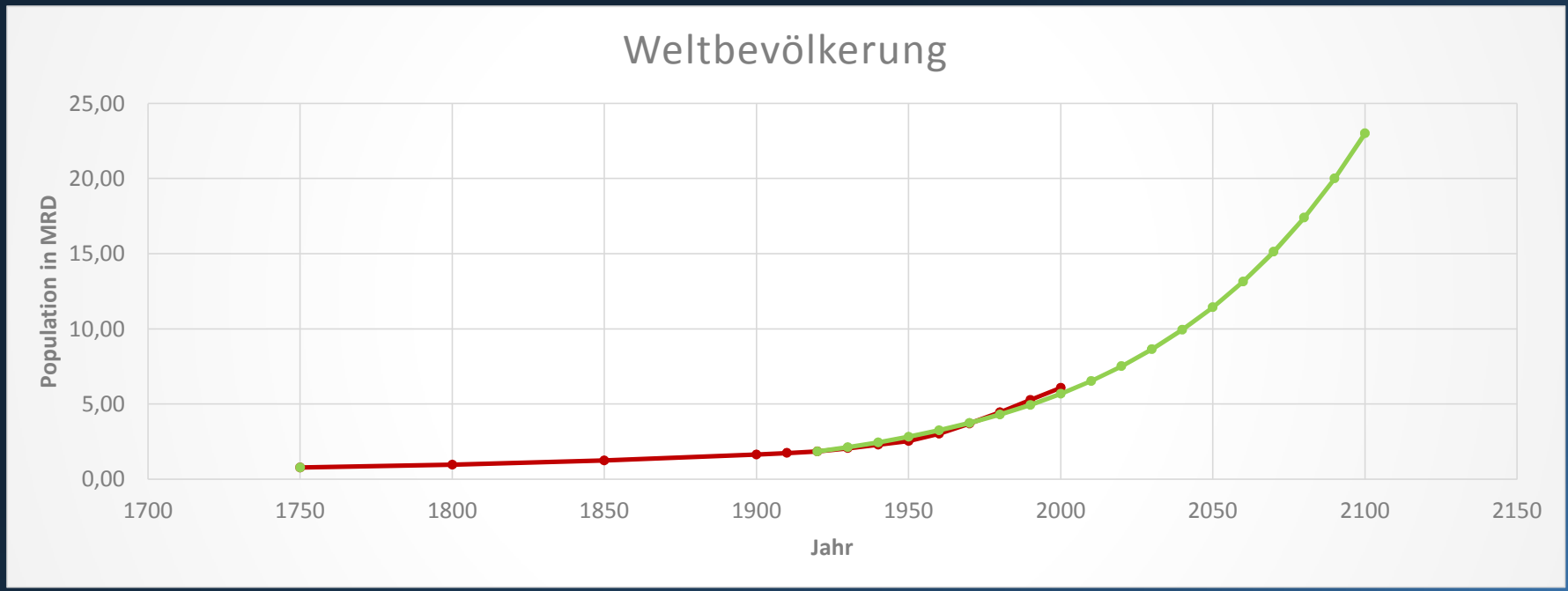
Populationsdynamik

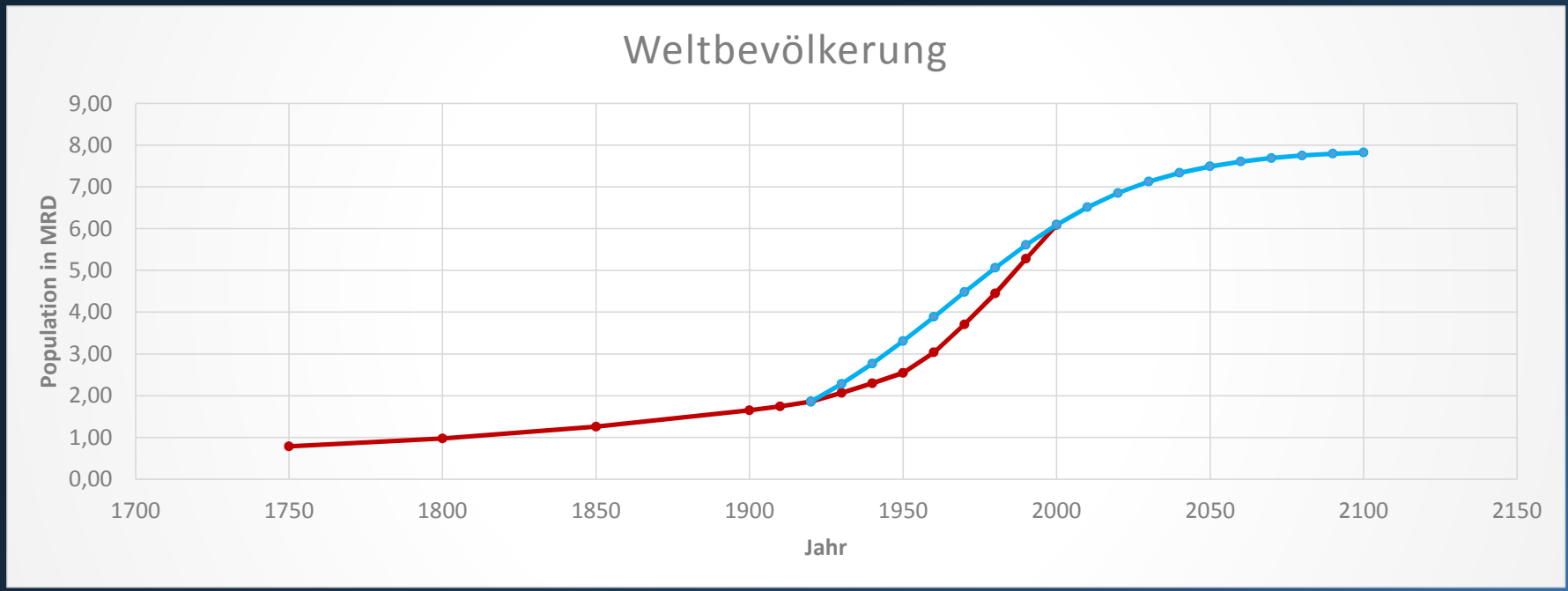
Exponentielles Modell

P(t+1)=$\lambda * P_t$



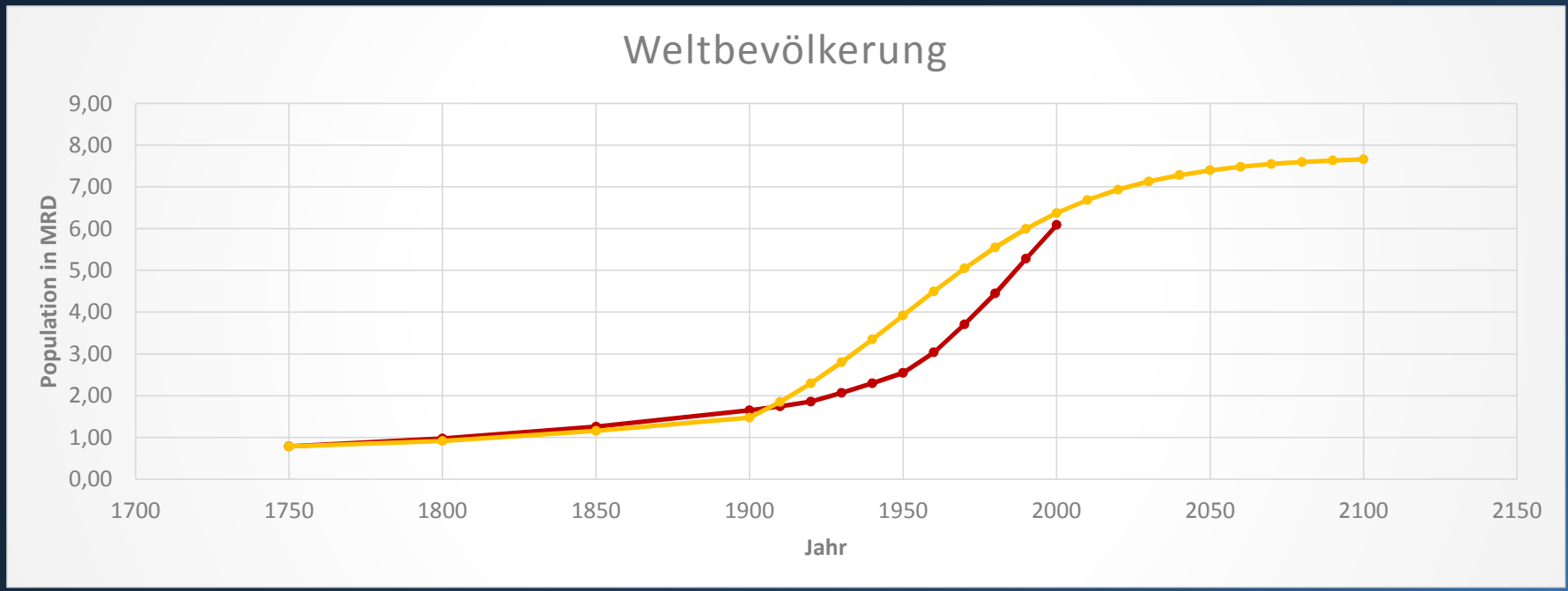
Logistisches Modell

P(t+1)= P_t*(1+r*(1-$\frac{P_t}{k}$))

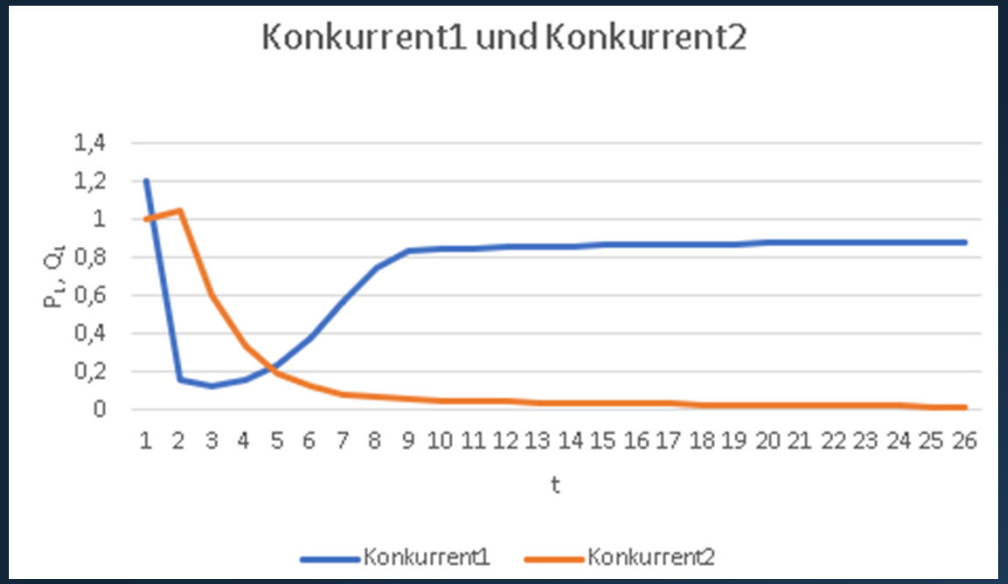


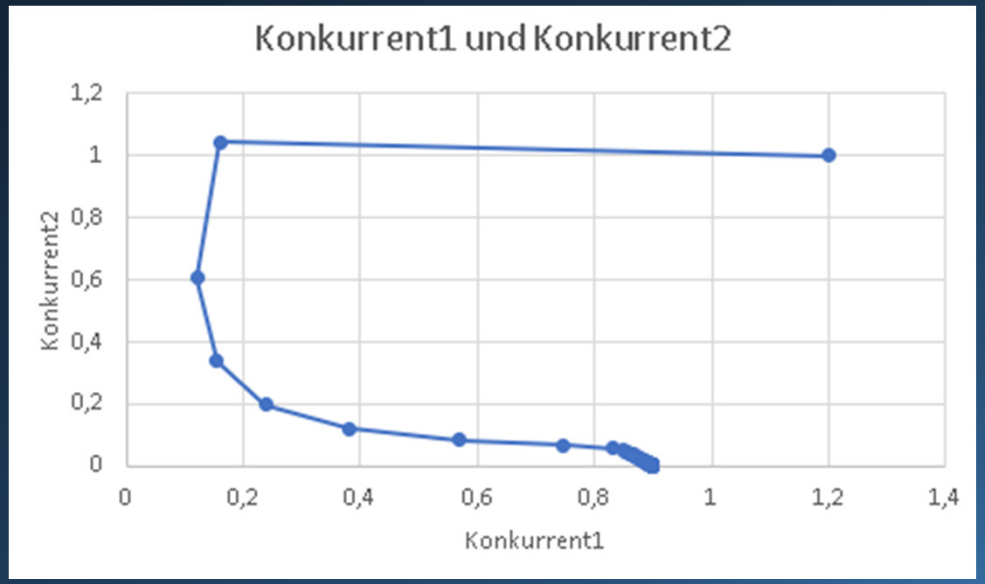
Ricka Modell

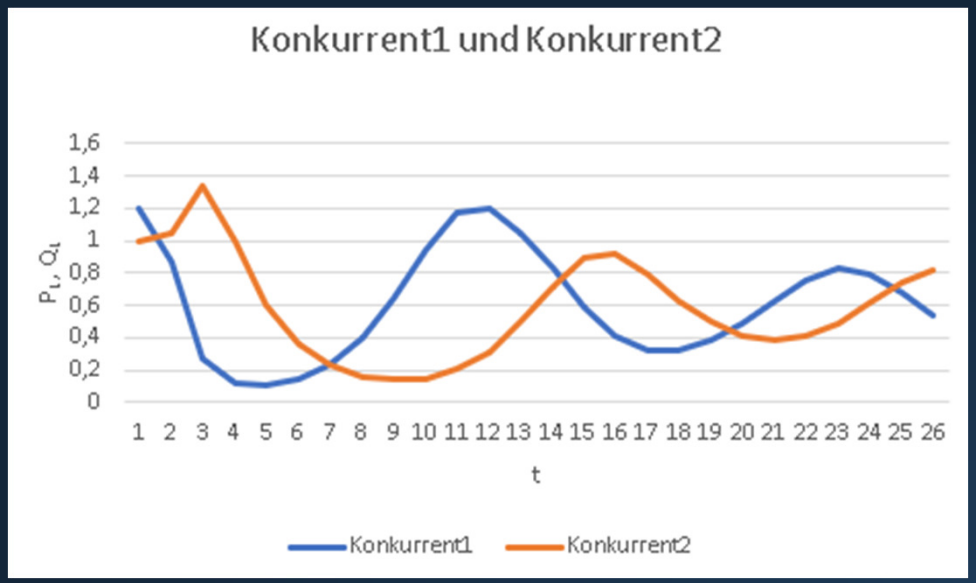
P(t+1)= P_t*Λ/(1+a*P_t)^β

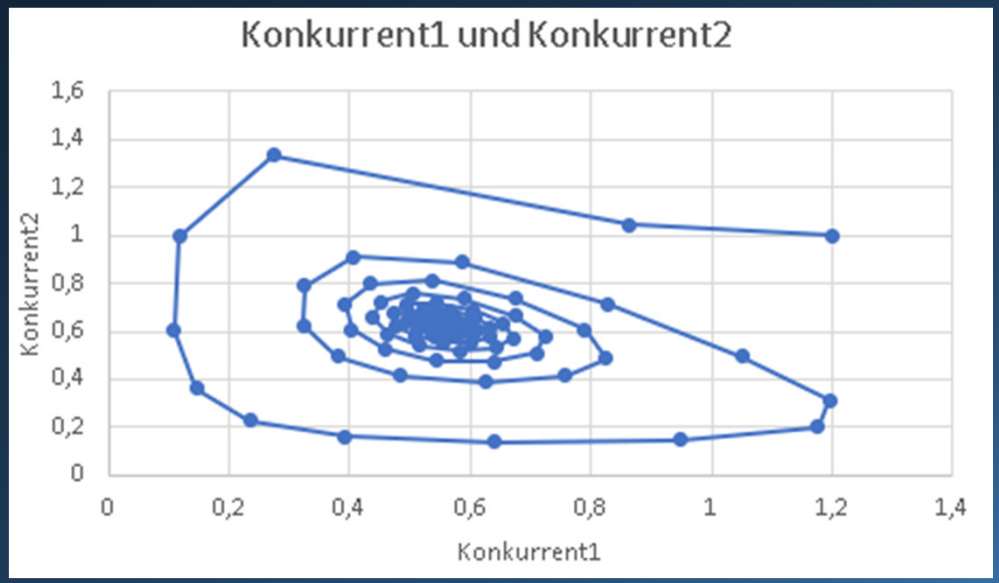


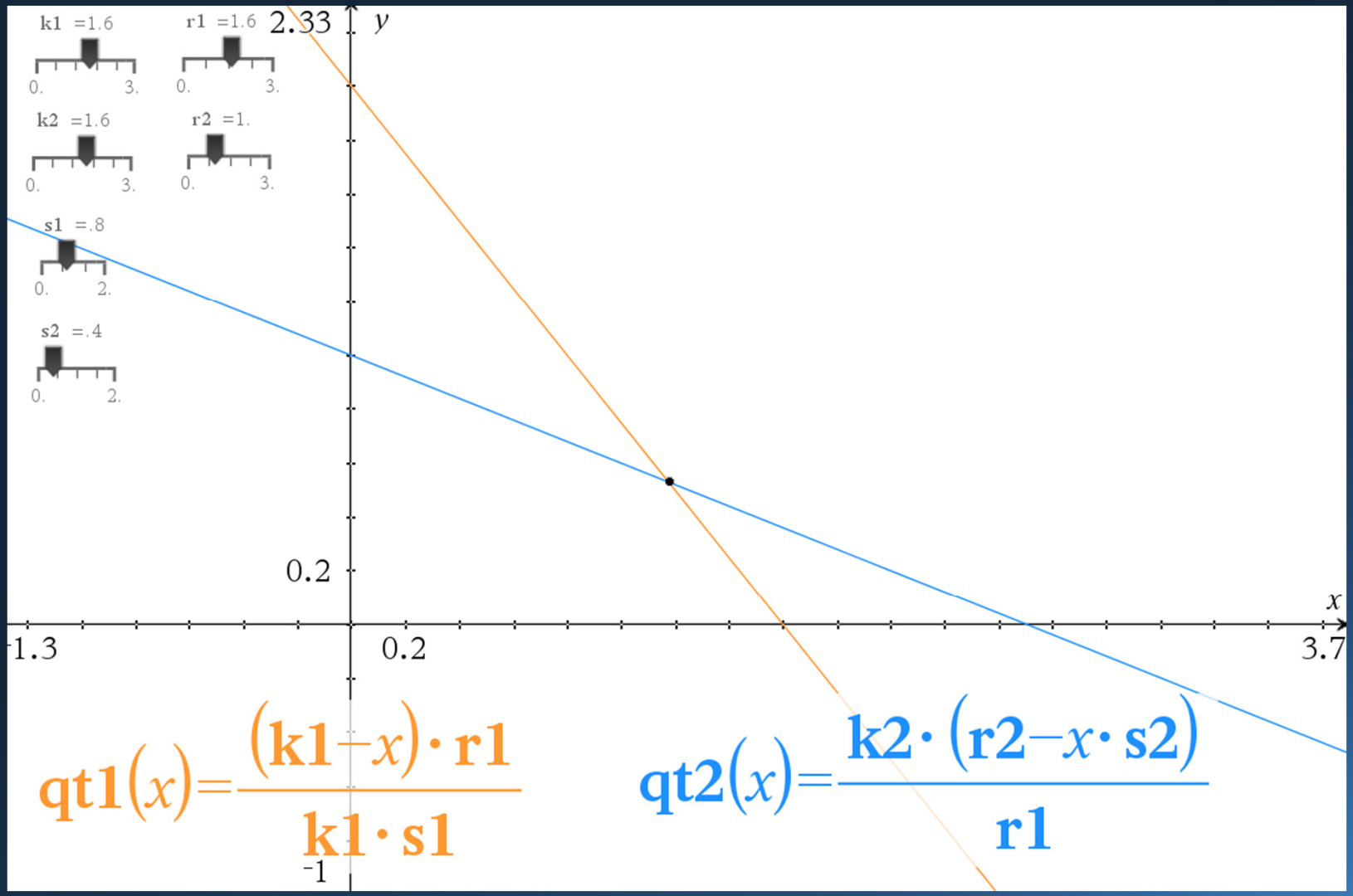
Konkurrenz zwischen 2 Tierarten






Konkurrent1 und Konkurrent2
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
P_t, Q_t
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
t
Konkurrent1
Konkurrent2

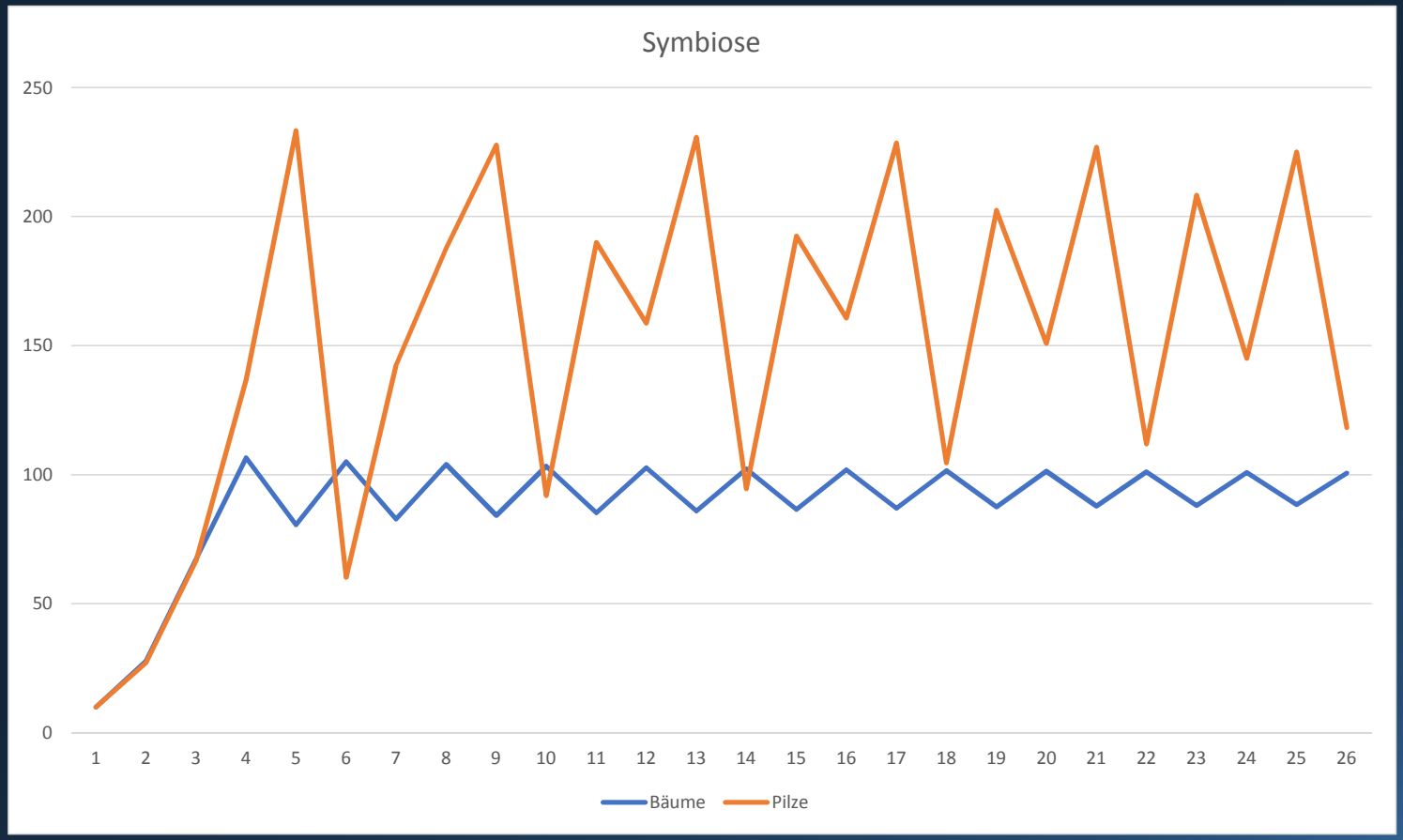

Konkurrent1 und Konkurrent2
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
Konkurrent2
0
0,2
0,4
0,6
0,8
1
1,2
1,4
Konkurrent1


k1 =1.6
0.
3.
r1 =1.6
0.
3.
k2 =1.6
0.
3.
r2 =1.
0.
3.
s1 =.8
0.
2.
s2 =.4
0.
2.
2.33
y
0.2
x
-1.3
0.2
3.7
-1
qt1(x)=(k1−x)·r1 / k1·s1
qt2(x)=k2·(r2−x·s2) / r1

Symbiose

$$P(t+1) = P(t)\left(1 + r\left(1 - \frac{P(t)}{K}\right)\right) + \left(\frac{\boldsymbol{Q(t) * P(t)}}{\boldsymbol{\alpha}}\right)$$

$$Q\,(t+1) = Q(t)\left(1 + u\left(1 - \frac{Q(t)}{S}\right)\right) + \left(\frac{\boldsymbol{Q(t) * P(t)}}{\beta}\right)$$


Symbiose
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Bäume
Pilze