

1 Appendix B. WinBUGS script file for simulation of prior distributions and fit of marginal trend model.

```
2 model {
3
4
5 # priors
6
7 beta ~ dnorm(0, 0.0001)
8 sigma ~ dunif(0,10)
9 tau <- pow(sigma, -2)
10 for (i in 1:S) {
11   a[i] ~ dnorm(0, 0.0001)
12 }
13
14
15
16 # marginal model of trend
17
18 for (i in 1:S) {
19
20   r[i] ~ dnorm(beta, tau)
21
22   for (j in 1:T) {
23
24     y[i,j] ~ dpois(mu[i,j])
25     log(mu[i,j]) <- a[i] + r[i]*t[j]
26   }
27 }
28
29 }
```