Seedling growth and distribution of *Ambrosia artemisiifolia* (common ragweed) in the Czech Republic

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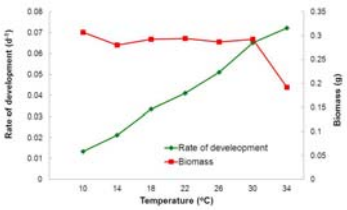
Ambrosia artemisiifolia

an annual plant native to North America was accidentally introduced to Europe in the 19th century. Because of its negative impact on human health, agriculture and biological diversity it is nowadays considered as one of the most dangerous European weeds.

Seedling growth

Low temperature negatively influenced development rate (1/time) (P<0.001). Slow development may explain the scarce occurrence of *A. artemisiifolia* in CR.

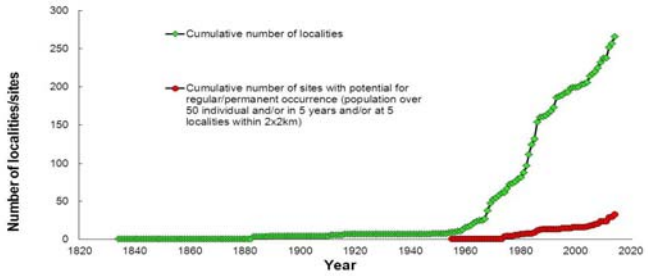


Seedlings are important for population persistence & spread of annuals. We grew them in climatic chambers under identical conditions except temperature.

Time between the appearance of the 1st and 7th pair of stem leaves was recorded and then plants were harvested.

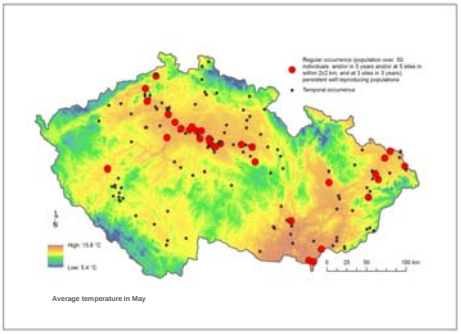
Distribution in the Czech Republic

From CR it has been known since 1883. Up to now it has been recorded from 268 localities and 33 sites with potential to host permanent populations. The increasing cumulative numbers indicate start of invasion.

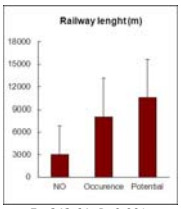


Most are along roads and railways on artificial substrates and in warm regions.

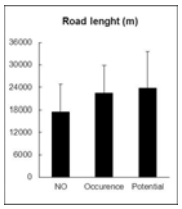
within 200m from railway (but farer from road)	35%	**Artificial surfaces**	70%
within 200m from road (but farer from railway)	14%	**Agricultural areas**	26%
within 200m from railway and road	31%	**Forest and semi-natural areas**	4%
farer from railway and road	20%	**Total number of records**	**237**



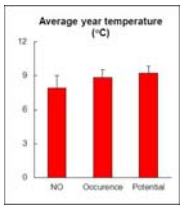
***A. artemisiifolia* has been recorded in 145 out of 2550 mapping cells; 33 cells out of the 145 have potential to host permanent populations. Its distribution is influenced by density of communication corridors, weather and land use in the cell. Stepwise regression (GLM with Poisson distribution) revealed railway length, average yearly temperature and yearly precipitations as the most effective factors.**



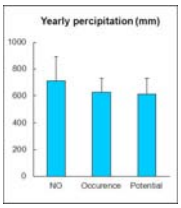
F= 242.64; P<0.001



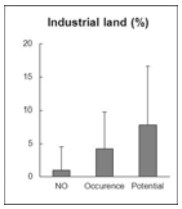
F= 62.64; P<0.001



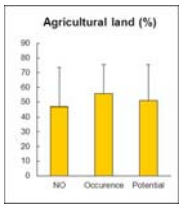
F= 179.02; P<0.001



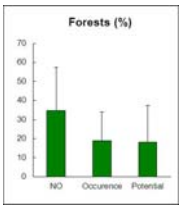
F= 47.04; P<0.001



F= 63.79; P<0.001



F= 8.71; P<0.001



F= 75.71; P<0.001