Phenological Characteristics of Wild Cucumber (*Echinocystis lobata* (Michx.) Torr. et A. Gray.) growing in Private Area of Kaunas City

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Introduction

Wild cucumber (*Echinocystis lobata*) is recognized as an invasive species in Lithuania and other European countries of temperate climate and is considered to be one of the most dangerous in terms of its intensity of the spread in the continental part. Romania is thought to be the first country of escape in the wild of *E. lobata* in Europe, where it has arrived from North America. The discussed species is a vine that climbs with the help of branched tendrils, forming large capsules with spines. The further outspread of *E. lobata* as a species introduced to Europe botanical gardens is related to ornamental horticulture. Till now this annual herb is grown in private gardens for its abundant fragrant whitish flowers and hanging fruits that attract attention. The aim of this study was to compare the phenology of wild cucumbers growing in the same location over four years (2017-2020).

Fig. 1. Wild cucumber (*Echinocystis lobata*)

Materials and Methods

Plants were collected in private area of Kaunas city for four years (2017-2020). Morphometric and gravimetric studies of wild cucumber plants were performe in end of vegetation. The plant stem length, number of nodes, average node length, fruits and seeds numbers of the wild cucumber were determined, also the dry mass of all plant were estimated.

Results

The maximum morphological parameters observed were as follows: stem length close to 300 m, aboveground mass 1600 g and number of seeds 1000. The results show that among the useful strategic features of the species might be establishment of the huge aboveground part, which helps producing large quantities of seeds and scattering them away from the point where germination of the invader took part.

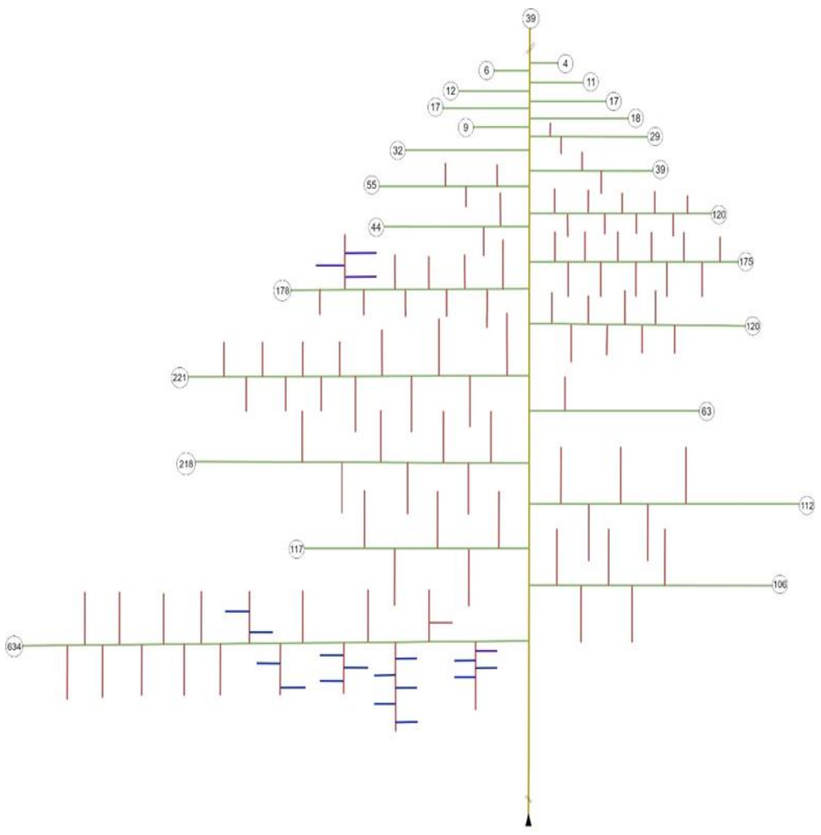

Fig. 2. Branching scheme of wild cucumber in 2017

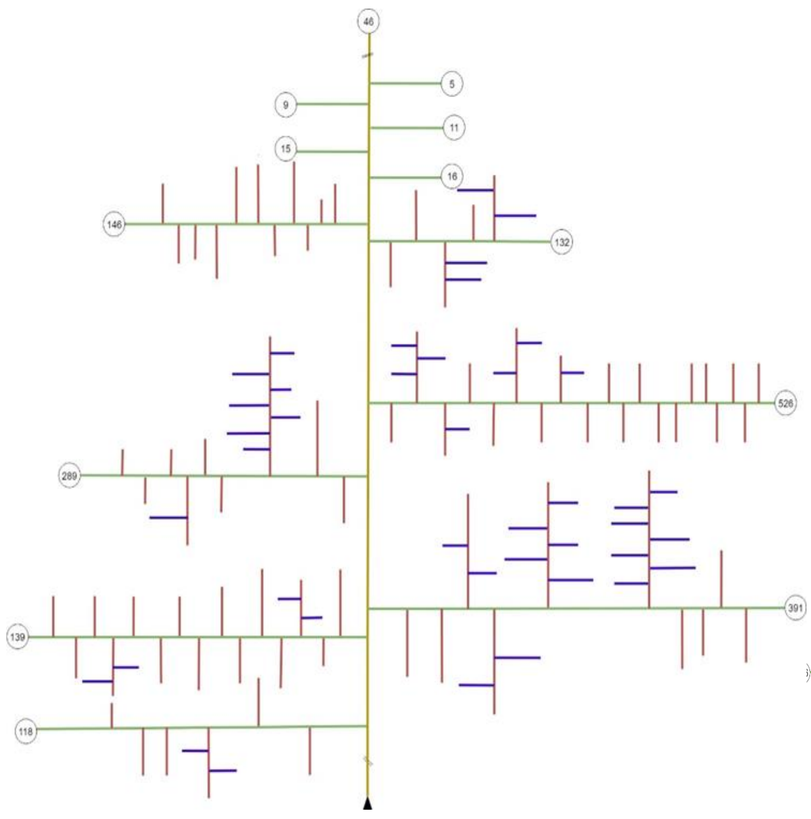

Fig. 3. Branching scheme of wild cucumber in 2018

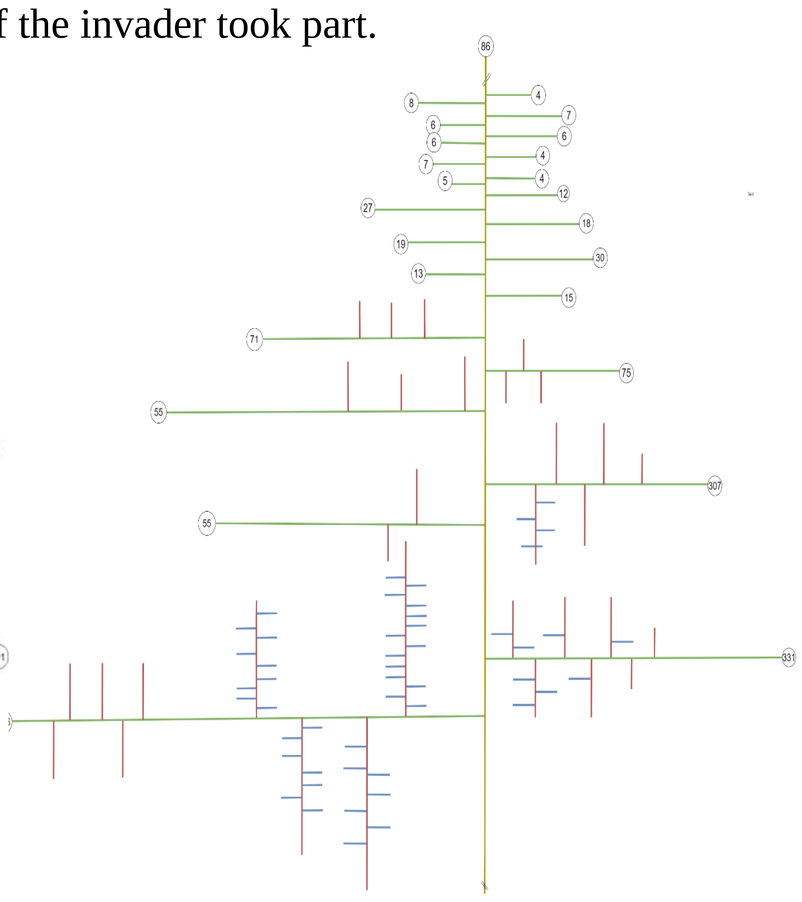

Fig. 4. Branching scheme of wild cucumber in 2019

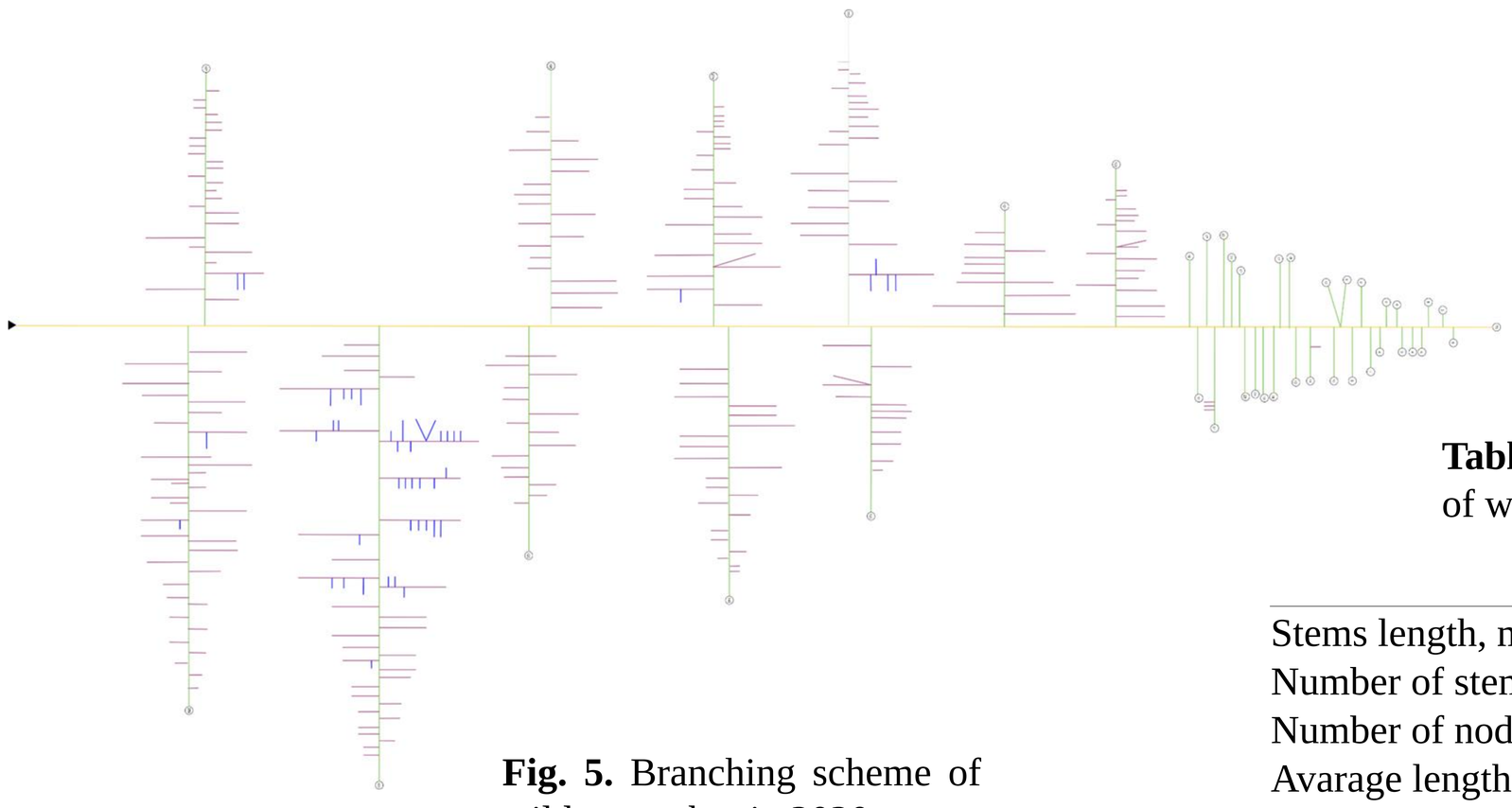

Fig. 5. Branching scheme of wild cucumber in 2020

Table 1. Morphological and gravimetric parameters of wild cucumber plants (2017-2020) in Kaunas city

	2017	2018	2019	2020
Stems length, m	281	243	191	110
Number of stems	159	129	106	324
Number of nodes	4118	3600	3219	2710
Avarage length of nodes	11.4	11.9	10.8	10.5
Number of fruits	241	232	195	246
Number of seeds	982	901	725	528
Whole plant mass, g	1559	1621	1260	1142

Conclusions

- Morphological and gravimetric parameters have highlighted the huge potential of the aboveground part for development of this species. The gravimetric and morphometric parameters per individual were much higher than what could be expected from the literature.
- The biggest length of stems was in 2017 – 281 m, smallest in 2020 – 110 m, though biggest number of stems were observed in 2020 – 324.
- The biggest number of nodes were observed in 2017 – 4118, smallest in 2020 – 2710.
- The average length of nodes were biggesr in 2018 – 11.9 cm, smallest in 2020 – 10.5 cm.
- The biggest number of fruits were observed in 2020 – 246, smallest in 2019 – 195.
- The biggest number of seeds were observed in 2017 – 982, smallest in 2020 – 528.
- The biggest dry mass of whole plant were observed in 2018 – 1621 g, smallest in 2020 – 1142 g.