The fig tree (*Ficus carica*) growing area extends to northern Romania

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Abstract. The purpose of this paper is to signal the change in the cultivation area of figs. The fig tree growing area extends to the north. This fact can be observed in Cluj County, where the usual annual fig plants have acquired a shrubby appearance in recent years. The average temperatures of the winter months in Cluj County have increased significantly in recent decades, and the frost does not kill the above-ground parts of the plant in the cold season. Whether natural or anthropogenic, global warming is a real fact, at least in the temperate zone.
Key Words: *Ficus*, Moraceae, fruits, global warming, climate change.

Introduction. The fig tree (*Ficus carica*) is a tree or shrub of the Moraceae family, one of the many species of the genus *Ficus*. Originally from Southwest Asia, it grows wild in the Mediterranean area (Falistocco 2020). In Romania, it appears mainly in the south of the country, mostly in the form of an annual plant or perennial shrub. The annual form of the *Ficus* appeared in the center and north of the country, due to frost, which affects the upper part of the plant as a whole, followed by sprouting in early spring.

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Fig, wild and cultivated plant. The fig is medium in size, grows to heights of 7-15 m, is demanding to the nutritional qualities of the soil, and its growth is slow. The leaves are drooping, 12–25 cm long and 10–18 cm wide, consisting of 3–5 pronounced lobes. The bark of the tree is smooth and gray (Khadivi et al 2018; Hussain et al 2021).

The fig tree produces conical fruits, which have small variations in shape, but large variations in size (Khadivi et al 2018; Hussain et al 2021). The variation in the size of the fig fruit is due to the different length of the vegetation cycle. As for the quality of the surfaces on which they grow, figs are not very demanding. Figs grow in the wild on rocky ground and walls, where other plants can hardly grow. Root growth causes the soil where they are located to move. The tree produces an irritating latex that has a milky appearance and has a protective role in healing scars (Khadivi et al 2018; Hussain et al 2021).

Some varieties of fig trees are reblooming, meaning they produce two harvests a year: the first in spring and the second in late summer. Figs sometimes harvest up to three times a year, provided they have an optimal climate and a long growing season (Khadivi et al 2018; Hussain et al 2021).

Figs are of three types: the first type is pollinated by the *Blastophaga* wasp, San Pietro figs (the first crop is done without pollination, and the second requires pollination by the *Blastophaga* wasp) and dioecious figs (figs that bear fruit without the need for pollination) (Kjellberg & Lesne 2020). The varieties in Romania are mostly dioecious.

The fruits of the fig tree are classified according to variety and season: white figs, queen figs, black figs and spring figs (Khadivi et al 2018; Hussain et al 2021). Fig trees are believed to have been among the first plants grown by man before the cultivation of wheat, barley and vegetables (Falistocco 2020). It is also believed that human migration

has played an important role in expanding the natural area of fig growth (Falistocco 2020).

Depending on the fig variety, fruits can be colored: black, red, yellow, purple, green and brown (Khadivi et al 2018; Hussain et al 2021). In Romania, the most recommended varieties are those that produce red, yellow and green fruits, because they have time to ripen in the short growing season in Romania.

Some fig trees can live up to the age of 80 (Wikipedia.org).

The expansion of the cultivation area of the fig tree continues. As other studies have shown, global warming has made it possible to expand the vine growing area to the north, in regions where a few hundred years ago it would not have been possible to cultivate this species (Petrescu-Mag et al 2016). Similarly, the fig tree growing area extends to the north. This fact can be observed in Cluj County, where the usual annual fig plants have acquired a shrubby appearance in recent years. The average temperatures of the winter months in Cluj County have increased significantly in recent decades, and the frost does not kill the above-ground parts of the plant in the cold season (Figure 1). The spread of fig tree to north was also recently reported in Hungary by Wirth et al (2020).

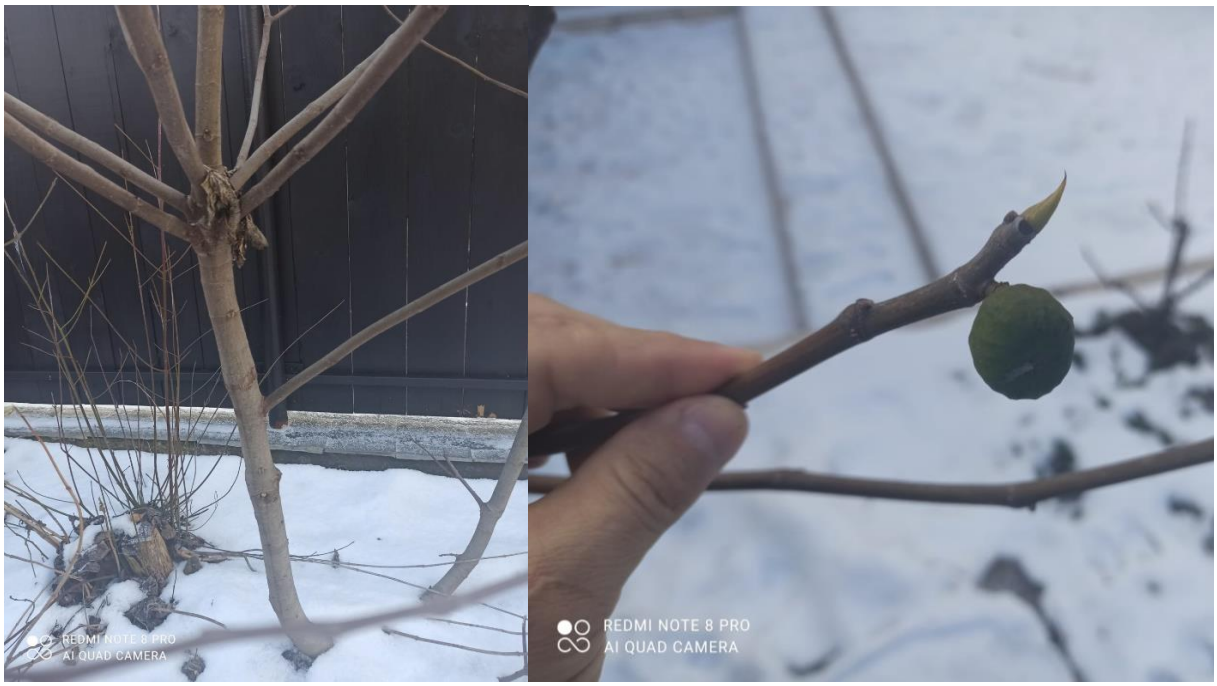

Figure 1. The fig tree in winter (2021-2022), Cluj-Napoca, Cluj County (original pictures).

Conclusions. The fig tree growing area extends to the north. This fact can be observed in Cluj County, where the usual annual fig plants have acquired a shrubby appearance in recent years. The average temperatures of the winter months in Cluj County have increased significantly in recent decades, and the frost does not kill the above-ground parts of the plant in the cold season. Whether natural or anthropogenic, global warming is a real fact, at least in the temperate zone.

Conflict of interest. The author declares no conflict of interest.

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