

## UNLOCKING THE SECRETS OF THE ONION GENOME: A PATH TO SUSTAINABLE ONION PRODUCTION

Onion is a vegetable plant with high nutritional and biological value, which is why it is an essential food in the human diet [1,2]. The annual production of onions in Serbia is about 35 thousand tons, with an increasing tendency to grow [1,3]. A similar trend is observed worldwide, bearing in mind that every year, it is necessary to produce about 800,000 tons more onions to match the production with the increase in the global population of people on planet Earth [4].



**Figure 1.** Different onion cultivars<sup>1</sup>

One way to improve and increase production is to create new cultivars of onions (Figure 1) that easily adapt to different agroecological conditions [5]. In response to this, a team of scientists from the University of Wageningen in the Netherlands [4], using modern molecular biology techniques, unraveled all the ambiguities related to the genetics of the onion [6].

<sup>1</sup>Photos by Đ. Vojnović, August, 18<sup>th</sup> 2022, in the locality Gospođinci (Vojvodina Province, Serbia).

The fact that the onion genome is sixteen times larger than the tomato genome and five times larger than the human genome speaks of the demandingness and scope of this work. Plant breeders believe the discovered results about onion genes will significantly help create new cultivars tolerant to frequent abiotic stresses such as drought, excessive moisture, and high and low temperatures [4].

An example of this is that by growing those new cultivars with the application of other agrotechnical measures, the negative effects of stress caused by climate change can be mitigated, thus increasing the production of onions worldwide for the ever-growing human population.

## References

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