

CO2 PER YEAR ASSIMILATED WITH PLANTED TREES¹

In Italy in 2022, one person emitted an average of 5.5 tons of CO2 equivalent per year (food, transport, housing, etc.).²

Trees need CO2 to grow. They therefore represent a real opportunity in terms of carbon offsetting in the fight against global warming.

Trees store CO2 through photosynthesis. This is a mechanism that allows trees to capture carbon dioxide from the atmosphere as they grow.

The CO2 storage capacity of a tree varies depending on several factors: species, age, size, climate, soil. Some trees grow faster and therefore absorb CO2 more quickly, while other tree species grow slower but live longer and therefore absorb more CO2 in the long term.

It is therefore difficult to make a generic estimate of how much CO2 can be absorbed by a tree, but it can be considered that an average tree assimilates about 200 kg of CO2 per year (average in kg calculated on 103 tree species of potential CO2 assimilated in one year by a mature specimen³). This is to give an idea of the order of magnitude of the CO2 absorbed, perhaps not even too far from reality, but without claiming to be strictly scientific.

OUR PLANTED TREES ARE 20.805 X 200 kg OF CO2 ASSIMILATED PER TREE = 4.161.000 kg OF CO2, WHICH EQUALS 4.161 tons OF CO2 PER YEAR ASSIMILATED, OFFSETTING THE CO2 EMISSIONS OF APPROXIMATELY 756 ITALIANS.

¹ Stored CO2 -Total amount of carbon in the plant accumulated-fixed since birth in a permanent manner in the form of biomass (trunk, branches, leaves, etc.).

CO2 assimilated- Net amount of CO2 that the plant removes in a year through photosynthesis.

² Crippa M., Guizzardi D., Banja M., Solazzo E., Muntean M., Schaaf E., Pagani F., Monforti-Ferrario F., Olivier, J.G.J., Quadrelli, R., Risquez Martin, A., Taghavi-Moharamli, P., Grassi, G., Rossi, S., Oom, D., Branco, A., San-Miguel, J., Vignati, E. *CO2 emissions of all world countries – JRC/IEA/PBL 2022 Report*, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/07904, JRC130363.



³ Source: REBUS® RENovation of public Buildings and Urban Spaces | Servizio Pianificazione Territoriale e Urbanistica, dei Trasporti e del Paesaggio | Regione Emilia-Romagna – Viale Aldo Moro 30 – 40127 Bologna | e-mail: Rebus@regione.emilia-romagna.it | www.bit.ly/REBUS3 | gruppo LinkedIn: REBUS L'energia della città | pagina Facebook: Rigenerazione urbana e Paesaggio | Twitter: #rebus_er | issuu: issuu.com/laboratoriorebus.