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Definition of Cytotoxic, Antioxidant and Heavy Metals Activity of Tomatoes Grown in Toxic Muddy Soils.

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Fruits of *Solanum Lycopersicum*, well-known as tomatoes, have got an high contents of essential nutritive elements for human health. They are rich of a several vitamins (C, A, B group, D, K) and minerals (P, Fe, Ca, Mg, Mn, Cu, K, Na) besides to be very rich in flavonoids and lycopene. These characteristics make tomatoes the best allies against cancer disease and an essential food for a good feeding.

Our investigation is focused on tomatoes grown in polluted soils to check their phytochemical and nutritive features.

With this aim, we have drawn skim, juice and seeds from tomatoes grown in muddy soils and have verified the antioxidant power and the anticancer activity of bioactive metabolites being in them, further the presence of possible heavy metals.

We have performed antioxidant assay on ethanol draws using DDPH; while ethereal draws antioxidant activity has been evaluated according to ABTS assay. The results of antioxidant assay show tomatoes keep an high antioxidant activity, mostly in their lypophile fraction, rich of the most representative compounds.

Citotoxicity assay have been performed on HeLa, PDAC, A375, cells line and the results, both for chloroformic and ethanol draws, for the seeds and for tomato juice are negative, because of they don't show a clear citotoxicity.

As regards heavy metal presence, has been evaluated using spectroscopy of atomic absorption with graphite oven, and the performed tests show the absence of heavy metals.

These results have a great scientific role, because they open a promising pathway to follow for the primary prevention of a several widespread disease.