

**BEES, CLIMATE CHANGES, AND “ENVIRONMENTAL SUSTAINABILITY 4.1C” IN
VITICULTURE AND THE TERRITORY FOR A NEW GLOBAL MULTIPRODUCTIVE
“BIOMETAETHICAL DISTRICT 4.1C”**

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Abstract:

The use of bees as pollinators in vine varieties with physiologically female flowers (Picolit, Bicane, Ceresa, Moscato rosa, etc.) (Cargnello, 1983) and as bio-indicators for biodiversity and environmental sustainability is well-known. Furthermore, there are interests in: 1-a. Making the viticulture of Belluno (Province of Veneto in North-eastern Italy, which is also famous for the Dolomites -a UNESCO World Heritage-) regain the socioeconomic role which it is entitled to and which it had got in its past by aiming at the enhancement of local grape variety in harmony with others, for example with the neighboring area of the Conegliano and Valdobbiadene Prosecco Superiore DOCG; 2-a. Maintaining and further improving the important natural and healthy environment of Belluno, and making its territory and the “lookout” means of the environmental sustainability, including its vineyards, even more naturally original and sustainable 4.1C.

The environmental sustainability 4.1C, -in accordance with the known applied philosophy and methodology of the “Great Chain MetaEthics 4.1C”, an algorithm by the Conegliano Campus 5.1C,- has to harmonize in-Chain with all the other indexed aspects within the territory, technical, economic, social, occupational, existential aspects -for humans and all other living and non-living entities (including biodiversity and landscape), as well as ethical, and “MetaEthical 4.1C” aspects, in order to create, by taking “a step back to the future 4.1C”, not a “Bio District”, but indeed a “Bio MetaEthical District 4.1C Multiproductive” as indicated by the “Charter of Sustainability BIO – MetaEthics” of G/ESCO. (Carbonneau and Cargnello, 2017). All of the foregoing is related to the known climate changes that are already underway in this area, as well as to the current and future paradigms 4.1C. Those paradigms are existential, social, occupational, economic, they relate to lifestyles and to styles of wellness, well-being, being well when being, and psycho-physical well-being for all, according to the varying sensibilities,... as well as to the ethical and “MetaEthical 4.1C” paradigms for the territory. These innovative, original, sustainable 4.1C activities and researches on beekeeping in viticulture for the territory come within the above context, where beekeeping is intended as: 1- A productive activity of a “Bio MetaEthical District 4.1C Global Multiproductive” with its corresponding original, innovative, sustainable 4.1C “Bio MetaEthics4.1C” certification, and 2- an impressive, innovative, sustainable 4.1C, natural “lookout” and as an index of the pollution of the environment, including the vineyard and the wine.

Key Word: bees, vineyard, methaethic 4.1C , sustainability 4.1C

1. Introduction.

The use of bees as pollinators in vine varieties with physiologically female flowers (Picolit, Bicane, Ceresa, Moscato rosa, etc.) (Cargnello, 1983) and as bio-indicators for biodiversity and environmental sustainability is well-known. Furthermore, there are interests in:

1-a. Making the viticulture of Belluno regain the socioeconomic role which it is entitled to and which it had got in its past by aiming at the enhancement of local grape variety in harmony with others, for example with the neighboring area of the Conegliano and Valdobbiadene Prosecco Superiore DOCG;

2-a. Maintaining and further improving the important natural and healthy environment of Belluno, and making its territory and the "lookout" means for the monitoring of the environmental sustainability thereof, including its vineyards, even more naturally original and sustainable 4.1C.

The environmental sustainability 4.1C, -in accordance with the known applied philosophy and methodology of the "Great Chain MetaEthics 4.1C", an algorithm by the Conegliano Campus 5.1C,- has to harmonize in-Chain with all the other indexed aspects within the territory, i.e., technical, economic, social, occupational, existential aspects -for humans and all other living and non-living entities (including biodiversity and landscape), as well as ethical, and "MetaEthical 4.1C" aspects, in order to create, by taking "a step back to the future 4.1C", not a "Bio District", but indeed a "Bio MetaEthical District 4.1C Multiproductive" as indicated by the "Charter of Sustainability BIO – MetaEthics" of G/ESCO. (Carbonneau and Cargnello, 2017).

All of the foregoing is related to the known climate changes that are already underway in this area, as well as to the current and future paradigms 4.1C. Those paradigms are existential, social, occupational, economic, they relate to lifestyles and to styles of wellness, well-being, being well when being, and psycho-physical well-being for all, according to the varying sensibilities,... as well as to the ethical and "MetaEthical 4.1C" paradigms for the territory. These innovative, original, sustainable 4.1C activities and researches on beekeeping in viticulture for the territory come within the above context, where beekeeping is intended as:

1- A productive activity of a "Bio MetaEthical District 4.1C Global Multiproductive" with its corresponding original, innovative, sustainable 4.1C "Bio MetaEthics 4.1C" certification, and

2- an impressive, innovative, sustainable 4.1C, natural "lookout" and as an index of the pollution of the environment, including the vineyard and the wine. These activities and researches comprise, inter alia:

2.1- In-situ setting up of special hives to monitor bees (entering and exiting the hive, abnormal behaviour, and deaths, with corresponding numerical, behavioural, anatomical, histological, chemical analyses, ...);

2.2- Activation of a monitoring network within the territory;

3- Analyses for the most common pollutants in honey, wine, air, water, and soil;

4- Analyses of documents (farmbooks, documents by health structures, any organic, biodynamic certifications, etc.);

5- Researches to detect:

5.1- The approval rating by the producer, the citizen, and the consumer;

5.2- Whether consumers are willing to pay more – or whether they would pay less- a product certified "Bio MetaEthics" compared to one without certification, or compared to a product certified "Organic" or "Biodynamic".

In this work, besides to the analysis on the evolution of viticulture as determined by changes that are climatic, social, professional, occupational, economic, and related to lifestyle, ... the obtained results will be set forth, as well as the results obtained with regard to the above-mentioned activities and researches about bees and beekeeping. Therefore, for the "International Academy of Vine and Wine" of G/ESCO, beyond the vineyard, from the vineyard and from the cellar.

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