

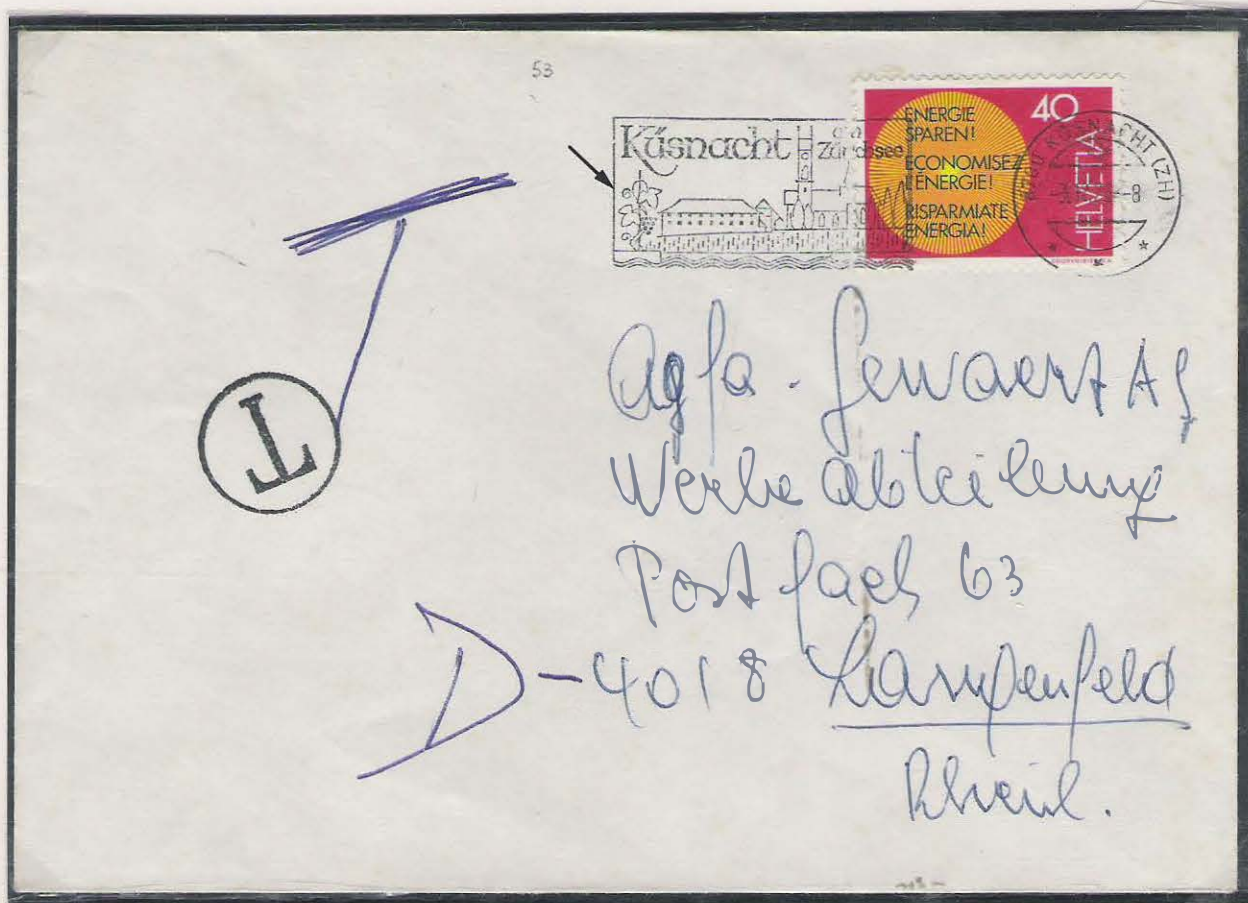
2. MORPHOLOGY, CONSTITUTION, PROCESSING

2.1 The plant culture, the fruit, pests and diseases

Vine belongs to the gender "Vitis", from ampelideas or vitaceas family, where all European, American, and Asiatic varieties are included, being "Vitis vinifera" the most important one. It was classified, scientifically in this gender, by Carl Von Linné (1707-1778), a very important Swedish botanist, know as the "Father of the Systematic Botany".



Vitis is a sarmentous and creeping bush, which attaches to natural or artificial tutors through its branches. Roots compose the soil buried portion and, at the air portion, the hale, arms, sarments, leaves, fruits and branches may be distinguished.



Grapevine supported on a stake, with branches, leaves, and fruits

2.1 The plant culture, the fruit, pests and disease



Vine culture requires a series of factors that come since the choice of the adequate soil, the preparing of such soil, fertilization, a sustenance system, planting, grafting, pruning, defensives and, at last, maintenance



Soil preparing and all of the activities requested for the final goal consecution – grape production, the human hand labor individually or combined with animals is employed and, even, with the help of mechanized machinery.



2 .1 The plant culture, the fruit, pests and diseases



Imperforated



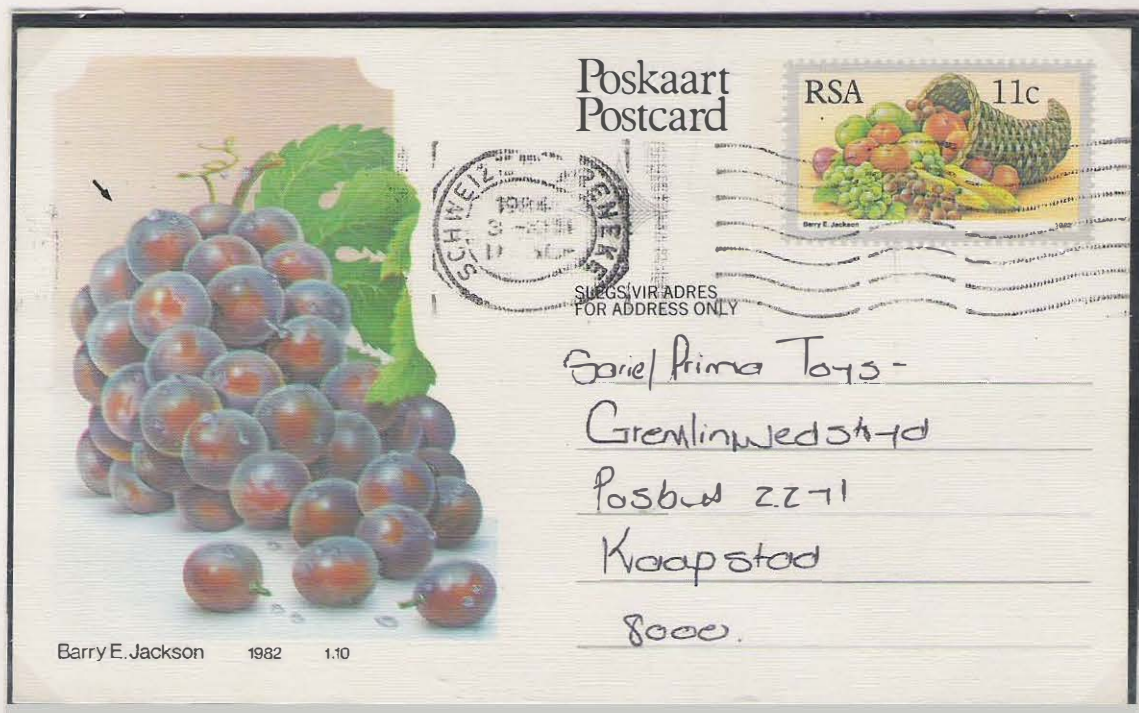
Bunch fruit-bearing grapevine and its fruits is botanically denominated berry and results from the development of the flower ovaries, appearing at the pedicel end. Bunches can be compacted or quite loosen, accordingly to whether the berries are quite together or not. The berry has a cask or pellicle and, internally the pulp and, at the center, seeds or small grains.



2.1 The plant culture, the fruit, pests and diseases



Grapevine fruit represents the intermediate product between vine and wine – it is the raw material of the latter. Since the ancient times, grape bunch is represented by several ways:



2.1 The plant culture, the fruit, pests and diseases

Among the most harmful animal parasites to grapevine culture we may quote the "Phylloxera", an insect that appeared in Europe in the 19th century and that constituted a scourge threatening to destroy the European wine culture completely.



Essay



Color proof



Insect over grape bunch



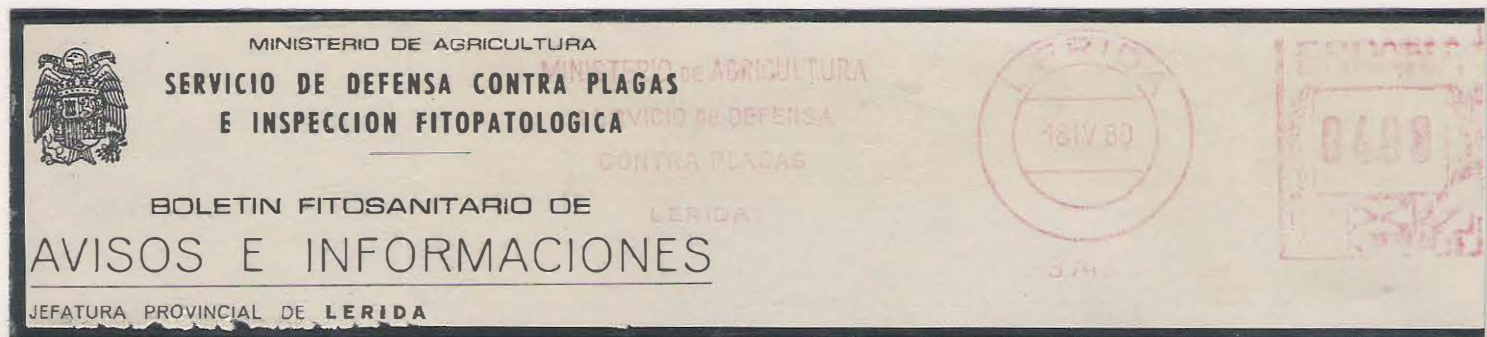
Ants destroying leaves, seen on both booklet cover and postage stamp

Other pests are: the ants, fruit flies, and also fungal diseases such as the peronospera, caused by the fungus "plasmopara viticola", anthracnosis, originating by the fungus "elsionoe ampelina", the oidium, whose causal fungus is the "uncinula necator", and bunch grayish rottenness, caused by the fungus "botrytis cinerea".

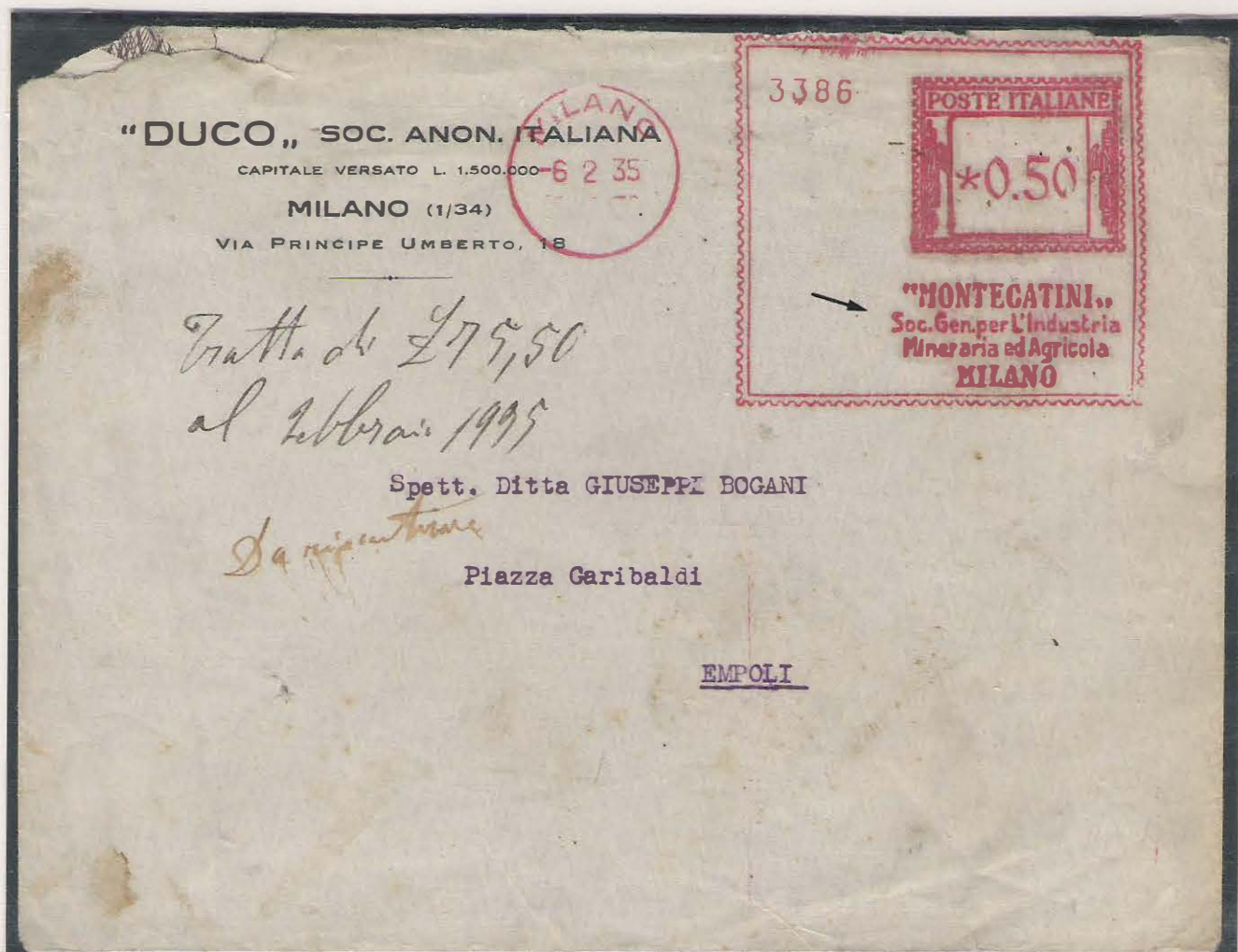


2.1 The plant culture, the fruit, pests and diseases

With the aim to fight against pests and diseases along time, phytosanitary defense services were created, as well as antiparasitic products were developed for use in cultures.



Meter franking fragment from the Defense Service Against Pests (Ministry of Agriculture of Spain),



Antiparasitic product advertising on the meter franking

2.1 The plant culture, the fruit, pests and diseases

Nowadays the tools used for prevention of treatment os pests and diseases are varied and are in continued evolution as well as the wine culture support technology.



"Calda Caffaro" was a Grapevine applicable defensive with the main aim to prevent and fight against the "Perenospera". Cuprosan, defensive against the "mildium" is a grapevine disease produced by fungi that attack the green organs, especially the leaves.



2.2 Harvest



Color proof



"Vintage is a time of joy, when everyone sings and dances"
(Isaiah, 16,10)

In the ancient times, the vintages (grape harvests) were always celebrated in great celebrations. The moment when grape is ripe is precisely determined by its content of sugars, which must keep constant for a few days of good weather. Grape must be harvested dry.



The whole process from grape harvesting to grape processing or selling "in natura" is shown in this sequence.



Conditioning in transportation baskets

2.2 Harvest



Grape bunches are harvest one by one, conditioned into small individual baskets that are transferred further on to other bigger baskets to be transported to wagons, trunks and other means of transportation.



After this stage, the harvested grape is transported by these means from the vineyard to the wine press, where it will be processed.



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2.3 Vinification



Just after grape arrival at the lagar or tavern, they are classified and separated by variety, weighted and analyzed in relation to lot mean glucometric degree.



Manual smashing machine

Soon after they are spilled into distinct collecting tanks to each type of grape. These tanks have a sloped bottom that leads the grapes to the smashing machine. The smashing process aims to squash the grape and thus release the whole grain juice.

Since the ancient times up to our days, the smashing process has been processed through feet stepping. Nowadays, although such practice still happens, it has been abandoned and replaced by machinery that everyday becomes improved and ultramodern.



2.3 Vinification



The smashing process through stepping or modern machinery has the aim to smash and thus release the whole grain juice, as well as separating bagasse from the grape grains before they are brought to fermentation tubes.



Manual smashing machine



Enologic machinery fair



2.4 Transportation



Along the course of history, wine has been transported in adequate vessels with aim to no alter composition.

Amphora is denominated a large vase or jar for liquids, has an oval shape, narrow and cylindrical bottleneck, with two wings. It was quite used in the ancient times by Greeks and Romans to transportation and store water and wine. Mythology already reports the existence of amphorae with Bacchus's writings and representations and his orgiastic celebrations.



On submarine researches of Cousteau, amphorae were found containing wine conserved the way it was origin ally conditioned

2.4 Transportation

Other means of transportation were used such as: man himself, load animals, cars, boats, ships, etc.



Horsecart



Ship



Oxcart



Zorra – old method



Roman nave transporting barrels of wine

The most used embarkation we have news was the "Rabelo Boat", of a controversial origin, possibly Phoenician, it is a one-sail boat and driven by a rod. The Rabelo traveled all over the Douro River for more than 300 years.

