Archive code :

Test report:

CUSTOMER INFORMATION

Farmer	
Address	
C.A.P	
Location	
Province	

LEAF ANALYSIS

Sample	
Crop	
Phenological phase	
Plant organ	

INFORMATION ON SAMPLING

Sampler	Client
Sampling date	12/10/2023

ANALITICAL TEST

Start analysis date	12/10/2023
End analysis date	16/10/2023

Analyst
Dott. Lorenzo Sbaraglia

The Laboratory director
Dott. Mauro Sbaraglia

Note

- This test report refers to the sample delivered to the laboratory.
- This report may not be reproduced, even partially, without the written approval of the laboratory
- The recordings are available to the customer in the laboratory for 2 years; the test reports for 10 years
- The sample is kept in the laboratory for at least 7 days after the issue of the test report.

Archive code :

Test report:

PARAMETERS

PARAMETER		U.M.	VALUES	OPTIMAL RANGE	AGRONOMICAL EVALUATION
Nitrogen	(N)	%	1,60	1,31 - 1,80	*Medium*
Phosphorus	(P)	%	0,12	0,16 - 0,25	*Low*
Potassium	(K)	%	0,95	1,01 - 1,50	*Low*
Calcium	(Ca)	%	4,73	2,51 - 4,00	*High*
Magnesium	(Mg)	%	0,61	0,31 - 0,50	*High*
Sodium	(Na)	%	0,02	0,02 - 0,04	*Medium*
Iron	(Fe)	ppm	54	51 - 110	*Medium*
Manganese	(Mn)	ppm	39	51 - 150	*Low*
Copper	(Cu)	ppm	10	9 - 13	*Medium*
Zinc	(Zn)	ppm	15	21 - 30	*Low*
Boron	(B)	ppm	21	31 - 45	*Low*

---------- End of test report ----------

Note

U.M.: unit of measurement

Test methods

- Nitrogen:determination according to Kjendha
- Chlorine: incineration, extraction in boiling water, determination by I(
- Other element:Acid mineralization and determination By ICP OE

GUIDE TO THE INTERPRETATION OF THE ANALYSIS

1) MOBILITY OF NUTRITIVE ELEMENTS

In tree species, nutrients tend to accumulate in reserve organs and are subsequently mobilized when the new phase of development begins. The accumulation and mobilization processes play a fundamental role in establishing the relationship between the concentration of an element and plant growth. The chemical composition of a plant organ is therefore more a dynamic factor than a static one.
The mobility of the individual elements, and their consequent redistribution, mean that the location of the symptoms of deficiency can provide useful information for a correct foliar diagnosis.
Nutrients can be classified according to their mobility into three classes:

a) Mobile nutrients: Nitrogen, phosphorus, potassium, magnesium.
These elements are easily translocated from old leaves to new shoots, therefore deficiency symptoms appear initially on old leaves.
For magnesium, in some cases, the deficiency symptoms may appear earlier on the new shoots, as a consequence of the fact that the translocation speed is insufficient to cover the high nutrient demand of the new vegetation.

b) Non-mobile nutritive elements: Calcium, manganese, boron, iron.
These elements are not very mobile and therefore the symptoms of deficiency appear mainly in the young shoots. For manganese, deficiency symptoms are sometimes visible even in mature leaves, not as a consequence of remobilisation, but as a consequence of a higher nutrient demand.

c) Medium mobile nutrients: Sulfur, copper, zinc, molybdenum.
For these elements, the degree of remobilisation is variable, depending on the level of deficiency and the nutritional status of the plants.

2) AGRONOMIC SIGNIFICANCE OF THE NUTRITIONAL LEVELS

The agronomic significance of the nutritional levels reported in the certificate of analysis is as follows:
a) Deficient level
At this nutritional level, the element is not sufficient for normal vegetative activity. It is very probable that a specific symptomatology will appear on the plant due to the lack of the element. The state of deficiency is documented by bibliographic data or acquired experience. It is necessary to adjust the fertilization both to satisfy the nutritional needs of the plants and to improve the endowments of the soil.

b) Very low level
At this nutritional level it is very probable that the element is not sufficient for normal vegetative activity. Specific symptoms attributable to element deficiency may be evident. In this regard, there are no bibliographic data or acquired experiences that confirm the state of deficiency.
It is necessary to adjust the fertilization both to satisfy the nutritional needs of the plant and to improve the endowments of the soil.

c) Low level
At this nutritional level it may be probable that the element is not entirely sufficient for normal

vegetative activity. It is unlikely that specific symptoms will appear, attributable to a lack of the element.
It is suggested to adjust the fertilization.

d) Medium level
The element is in optimal conditions to ensure correct vegetation development.
It is suggested not to change the fertilization.

e) High level
The element is present in levels exceeding the normal requirements of plants. There can be metabolic imbalances in plants, mainly induced by elements, such as nitrogen, which condition vegetative development.
It is suggested to reduce fertilization.

f) Very high level
The element is present at very high levels and exceeding the normal needs of plants. The onset of metabolic imbalances in plants induced above all by elements such as nitrogen which conditions vegetative development is very probable. Phytotoxic phenomena could be probable for some trace elements, even if this state is not contemplated by bibliographic data or acquired experience.
It is recommended not to fertilize.

g) Toxic level
The element is present in very high levels and exceeding the normal requirement of plants. The onset of metabolic imbalances and symptoms of toxicity are confirmed by bibliographic data or acquired experience.
It is suggested not to fertilize; in the case of toxicity due to an excess of microelements, intervene adequately at ground level.

3) FOLIAR FERTILIZATION

Although plants mainly absorb water and nutrients through their roots, these can also be absorbed through the micro pores of the leaves (foliar fertilization).
The great advantage of foliar fertilization is the high efficiency of the applied doses, while the main limitation is due to the low amount of nutrient that can be applied. Therefore, foliar fertilization has more of an "aid or curative" function rather than representing an alternative method to satisfy crop needs.
If you want to intervene by foliar application, commercial formulations can be used at the doses and methods recommended by the manufacturers. Alternatively, foliar applications can be made using simple salts.
General indications on the concentrations of simple salts to be used for foliar applications are provided below. Depending on the varietal susceptibility, the concentrations can be used on the basis of acquired experience. The application volume for foliar treatments is generally 400-500 l/ha.

a) Nitrogen: use urea solutions at a concentration of 0.5-1.0% at regular intervals during the vegetative cycle. For foliar fertilization use only urea with a low biuret content (maximum 0.1-0.2%).

b) Potassium: use solutions based on potassium nitrate at a concentration of 0.5-1.0%. Repeat the treatment as needed.

c) Calcium use solutions based on calcium nitrate at a concentration of 0.5-1.0%. Repeat the treatment as needed.

d) Magnesium: use solutions based on magnesium sulphate at a concentration of 2%. Repeat the treatment as needed.

e) Iron: use solutions based on iron chelates (about 5% title) at a concentration of 0.1-0.2%. Repeat the treatment as needed. For foliar treatments use only iron chelates based on Fe-EDTA or Fe-DTPA. Do not use Fe-EDDHA chelates or derivatives, as they are photosensitive products.

f) Manganese: use solutions based on manganese sulphate at a concentration of 0.2%. Repeat the treatment as needed.

g) Copper: use solutions based on copper sulphate at a concentration of 0.2%. Repeat the treatment as needed.

h) Zinc: use solutions based on zinc sulphate at a concentration of 0.2%. Repeat the treatment as needed.

i) Boron: use solutions based on boric acid at a concentration of 0.2% or borax at 0.5%. Repeat the treatment as needed.

l)Molybdenum: use solutions of ammonium molybdate or sodium molybdate at a concentration of 0.05%. Repeat the treatment as needed.