VITICULTURE
ORGANIC FERTILIZERS

The following file sums up the salient points of field tests realized in a vineyard in the south of Piedmont. The tests have been divided according to local varieties, comparing international vineyards. The goal of the test: feed each vineyard with different techniques based on uptake is areas of production that often present a low content of organic matter, intervening on the modalities of distribution (time, equipment and type of fertilizer) and on the modalities of soil management. The tests began in 2015 and are still going on.

In the following lines there are: the description of analyzed fees (white wines=WW or red wines=RW), and the areas where the test take place.

TOWN	COUNTY	AREA	VARIETY	TOTAL SQM	TYPOLOGY
Cassine	AL	Gavonata	Chardonnay	3800	WW
Castel Rocchero	AT	Cimitero	Moscato	2200	RW
Fontanile	AT	Cimitero	Sauvignon	2000	WW
Mombaruzzo	AT	Casalotto	Barbera	2500	RW
Vezza D'Alba	CN	Vernè	Arneis	1000	WW
Vezza D'Alba	CN	Valmaggiore	Nebbiolo	2000	RW

Table 1

1.CHARDONNAY – GAVONATA

2. MOSCATO – CIMITERO

3.NEBBIOLO - VALMAGGIORE

4. SAUVIGNON – CIMITERO

After a first phase of evaluation in the vineyards, their number has been decreased during the years to focus on the most reliable ones.

STRATEGY

WHITE WINES: after finding two doses of Nitrogen (N) at 40 and 70 kg/ha/year, necessary doses to satisfy the need of Nitrogen of the crop. Distribution has been fractioned in two moments. The first operation took place during the middle of autumn (after harvest) and the second during spring time, in the early stages of budding. Pellet distribution has been done with a disc spreader and then buried. Fertilizers used: FERTILDUNG® and AZOCOR®105 in the modalities shown in the table. *See table 2*

RED WINES: see table 3 Program established on content Nitrogen (N) between 30 and 60 kg/ha/year for red wines. Distribution has been fractioned. Usage of MANGUSTA®. The first application takes place after harvest and the second in the middle of summer, during budding stage.

NAME	**PRODUCT**	**DOSE/ HECTARE**	**DISTRIBUTION** Autumn - Spring - Total			**TITLE**			**INTAKE**		
		kg/ha	kg/ha	kg/ha	kg/ha	N	P	K	N	P	K
Fomet VB 40	Fertildung®	500	500		500	3%	3%	0%	15	15	0
	Azocor® 105	250		250	250	10,5%			26	0	0
								Total	41	15	0

NAME	**PRODUCT**	**DOSE/ HECTARE**	**DISTRIBUTION** Autumn - Spring - Total			**TITLE**			**INTAKE**		
		kg/ha	kg/ha	kg/ha	kg/ha	N	P	K	N	P	K
Fomet VB 70	Fertildung®	500	500		500	3%	3%	0%	15	15	0
	Azocor® 105	500		500	500	10,5%			58	0	0
								Total	68	15	0

Table 2. Description and doses/hectare spread for the single test. White wines 40 units per hectare; white wines 70 units per hectare.

NAME	PRODUCT	DOSE/ HECTARE	DISTRIBUTION Autumn - Spring - Total			TITLE			INTAKE		
		kg/ha	kg/ha	kg/ha	kg/ha	N	P	K	N	P	K
Fomet WW 40	Mangusta®	1000	500	500	1000	3%	5%	7%	30	50	70

NAME	PRODUCT	DOSE/ HECTARE	DISTRIBUTION Autumn - Spring - Total			TITLE			INTAKE		
		kg/ha	kg/ha	kg/ha	kg/ha	N	P	K	N	P	K
Fomet WW 80	Mangusta®	2000	1000	1000	2000	3%	3%	0%	60	100	140

Table 3. Description and doses/hectare spread for the single test. Red wines 40 units per hectare; red wines 70 units per hectare.

CONDITIONS OF USE

The fertilizer has been distributed on the surface with a centrifugal disc spreader. The soil is tilled on the surface for the fertilizer burial. During spring time, fertilizer application takes place on alternate rows. During the agricultural season, grass naturally growns **is mowed and left there as a cover for the fertilizer**. It is recommended to distribute the product locally on small plants or immediately after transplanting. Spread distribution can be performed in autumn after harvest, through burial, tillage and last soil labour.

Pic. 5. Situation in spring, before fertilizer application

STRATEGY

Before transplanting, it is recommended to use FERTILDUNG®.

Its application must avoid direct contact with roots and trunk of young rootstocks.

After the first year, we suggest the usage of MANGUSTA®, characterized by a NPK 3.5.7 formula, which allows to increase the intake of Phosphorus and Potassium, useful in the first stages of grapevine growth.

VARIETY	SAUVIGNON		SAUVIGNON	
PHENOLOGICAL PHASE	Fruit set		Fruit set	
SYMPTOMS	TNT		TWW100	
Element	Content	Evaluation	Content	Evaluation
N%	0,95	vl	1,09	vl
P%	0,11	l	0,10	vl
K%	0,43	vl	0,38	vl
Ca%	1,80	l	1,82	m
Mg%	0,14	l	0,16	l
Na%	0,02	vl	0,02	vl
Fe ppm	70	m	83	m
Mn ppm	120	h	214	vh
Cu ppm	9	m	10	m
Zn ppm	33	m	62	m
B ppm	13	vl	15	vl
Mo ppm	0,05		0,05	
K/N	0,45		0,35	
Ca/N	1,89		1,67	
K/Mg	3,07		2,38	
K/Ca+Mg	0,22		0,19	

vh=very high

h=high

m=medium

l=low

vl=very low

RESULTS

Observations: for the vineyards that do not show any need of high Nitrogen presence, foliar analysis has underlined several benefits. There is a better vegetative balance, as well as an improved fruit set of grapes after flowering.

Strong vineyards have shown a positive result to fertilization as well. It is also clear the presence of a higher synergy between green mulching and plants when grassing is present. It is recommended to use pellet before grass mowing.

Pic. 6. Sauvignon. On the left, non-treated sample (TNT); on the right, fertilized sample with 70 units of Nitrogen derived from FERTILDUNG® and AZOCOR® 105 application.

FOMET - Via Vialarga, 25
37050 S. Pietro di Morubio (Vr) ITALY-UE
Tel. ++39 045 6969004 - Fax ++39 045 6969012
fomet@fomet.it - www.fomet.it