Summary

Wine-growing has been and willbe an occupation of major significance, bringing in large profits, the development of climatic conditions and soil in a more efficient way. From ancient times in Vrancea region viticulture has been one of the main activities, therefore in the Romanian conscience these legendary lands are considered large supliers of wine.

Vrancea's vine plantations represent 14 per cent of Romania's viticultural patrimony, namely 27500 ha, divided intro three famous vineyards: Coteşti, Odobeşti and Panciu. As part of home production, nearly 21,5-22 per cent com from Vrancea's cultures.

During 1990-2005, the wine-making sector (of production) of the whole country, including Vrancea county, underwent a gradual decline, caused by the emergence of new vineyard operations, of grapes convention and capitalization, where the tehnical and economic reasons were suburdinated to certain factors, unfortunately to the prejudice of viticulture and viticulturists.

Fitosanitary prevention of vine is the main tehnological link that has a direct influence over the quantity and quality of production, but also on all the working expenses per/a ton of grapes.

Pathogenic agents and pest have caused and are causing significant damages to vintage. According to the last official data provided by the Food and Agriculture Organization, these come to 25,4 per cent of possible harvest, including crops variation between 14,1 per cent and 35,6 per cent and on geographical areas between 16,1 per cent and 32 per cent.

The damages caused by the parasitic plants are justified doth by the large number of dangerous species with a high potential of reproduction and spreading, and by their ability to adapt to various ecological conditions and their resistance to tehnical mearures of prevention and control. (pest)

During the investigations in Vrancea area, it was discovered the fact that vine is destroyed a number of 21 pathogens and 36 pests. Among these, in the present work were particularly examined the pathogens: *Plasmopara viticola*, *Uncinula necator* and *Sclerotinia fuckeliana* and the pests: *Tetranychus urticae* and *Lobesia botrana*. This selection is due to the fact that the corresponding agents are found in plantations every year and they produce strokes causing important damages from an economical point of view.

For a better accuracy of the studies and results, the survey was made in three illustrative vineyards from Vrancea region: Coteşti, Odobesti end Panciu, on categories: Feteasca regala, Chasselas dore and Merlot, which are considered to be part of the basic array, but also because these are known for their vulnerability to constantly supervised pests.

The pest evolution was carried out between 2002 and 2005, studying the signs, the biology and the epidemology, but also the prevention end control, taking notice of frequency, intensity and stroke level, respectively, the intervention intervals and the products of fitosanitary use.

During 2002-2005 detailed comments concerning the environment were undertaken, carried out by the notification of mean, high and low temperatures, the rainfalls, the moisture content of the air and the extreme phenomena. (late white frosts, hail). Climatic conditions are a consequence of interaction of the all climatic factors which have an effect on the vine (biocoenosis) growth enviroment. Each climatic factor has a well-determined influence on pathogens and pest affecting the vine.

The tehnological measures were analysed and improved, so as to achieve the maximum efficiency regarding the vine heath and inherently the production of grapes. In addition to these, plant nutrition plays an important part by providing basic fertilizers and faziala foliara? Faziala foliara actions with preliminary field works! Has significantly influenced the evolution of pests.

At the moment, there are over 300 well-known commercial products, based on 50 active ingredients, used to control phytopatogen agents.

The whole range of fungicides used in viticulture is wide. The diversity and efficiency of the available fungicides provide an adequante prevention and control of the main diseases affecting vineyards.

Insecticides used to treat vineyards include three categories: of contact, ingestion and systemic insecticides, as part of the following chemical groups: organophosphorics, carbamati, synthesis pyrethrums, biological, inhibitors of artropods metamorphosis, mixtures.

The fito-sanitary treatments must be applied only when it is necessary and only with the recomanded doses and pesticides. Using larger concentrations and always the same pesticides, the appearance of resisting breeds, the residues accumulation or the deterioration of the ecologic equilibium in nature are encouraged.

Latelz, various researches in selecting the pesticides in order to approve the using in practise of the products with high effectiveness in the rebutment of the damage factors were carried through. The damage factors must not be toxic for the predatorz or least to less toxic. Nowdazs, we maz saz that vinezard disposes of manz tzpes of pesticides but in most cases not efficientlz enough used.

In the rebutment of the vinezard's toxic factors, the forecast and the warning of the fito-sanitary treatments have a major part. The warning of the treatment is made by following certain criteria such as: biological, ecological and phenological.

Lately, a new system of warning, the treatments called AgroExpert is required. It offers the possibility to improve the forecast system based on the automatic processing of weather data (temperature, damp, annual rainfall, water drops on the leaves). This heads to the treatments rationalize by reducing the consumption of fito-sanitary products at the surface. This system allows obtaining permanent data on weather and the readjustment of more correct decisions for predicting the incursion of different pathogenic factors and the treatments warning for controling. This happens if they are processed on specific mathemetic methods without replacing the rendition function of the experts'data.

For the treatments' warning in order to control the pest, the level of the population is taken into consideration and according to some cases the pick of the flying curve established with the help of ferromons.

The over a century experience in controling the pathogenic factors and the pest, in the vineyard field, inducted an innumerability of researches which tried to clear up different aspects imposed concrete pedo-climatic conditions of the vineyard plantations. It is also given by the various fito-sanitary products and their involvement in the use during time.

In this context, we suggested the pursuit pursuit, in the yield specific conditions, the conduct in the main active basic elements used in controling the pest vineyard crop.

The choice of the ective substances used in experiences was made based on the vast experience of the vineyard farmers from the study area. The suggested recepies try to take count of the specific of the pest and the way it conducts every year. According to this context 4 variants were suggested as follows:

The 1st variant represents a diagram of annual treatments in which surface substances will be used mostly.

The 2nd variant was built upon a diagram of annual treatments in which systematic substances will be used mostly.

The 3rd variant represents an incorporated diagram of annual treatments in which surface active substances will be combined.

The 4th variant is conceived as a fito-sanitary products integration with surface action, with products arisen from the mixture of active substances with synthetically action in an annual scheme of treatments.

These variants were located in the three study areas at three ilks:

a white wine ilk - **Fetească regală** acknowledged in Vrancea

a mixed ilk – **Chasselas dore** which finds its best conditions from the country in this area.

a red wine ilk – **Merlot** which represents the basis for this assortment in the area.

The estimation of the incursion of *Uncinula necator* was expressed through leaves incursion and the frequency of the incursioned grapes.

The extent of the leaves incursion made by *Plasmopara viticola* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 7,6% V1, 11,8% V2, 4,5% V3 and 1% V4

Odobeşti 7,1% V1, 11,9% V2, 4,8% V3 and 2,1% V4

Panciu values of 10% V1, 12,5% V2, 6,5% V3 and 1% V4

The frequency of the incursioned grapes by *Plasmopara viticola* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 7,6% V1, 11,8% V2, 4,5% V3 and 1% V4

Odobeşti 7,1% V1, 11,9% V2, 4,8% V3 and 2,1% V4

Panciu 10% V1, 12,5% V2, 6,5% V3 and 1% V4

The degree of the leaves incursion made by *Uncinula necator*, in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 18% V1, 15,5% V2, 6,5% V3 and 1,5% V4

Odobeşti 15,6% V1, 14,7% V2, 8,8% V3 and 3,7% V4

Panciu values 0f 17,5% V1, 14,5% V2, 7,5% V3 and 1,5% V4

The frequency of the grape incursion of *Uncinula necator* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 21,3% V1, 18,5% V2, 6,8% V3 and 1,8% V4

Odobeşti 24% V1, 21% V2, 9,3% V3 and 1% V4

Panciu 12,5% V1, 9,5% V2, 8,3% V3 and 1,5% V4

The frequency of the grape incursion of *Botryotinia fuckeliana,* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 9,5% VI, 6,5% V2, 5,5% V3 and 1% V4

Odobeşti 12,3% VI, 9% V2, 3% V3 and 1,5% V4

Panciu 9,8% VI, 7,5% V2, 5,5% V3 and 1% V4

The frequency of the grape incursion by *Tetranychus urticae,* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 17,6% VI, 15,5% V2, 12,3% V3 and 5,3% V4

Odobeşti 26,5% VI, 21,8% V2, 10,5% V3 and 2,5% V4

Panciu 13,5% VI, 10,6% V2, 9,3% V3 and 1,5% V4

The frequency of the grape, incursion by *Lobesia botrana,* in the 4 years of observation, enregistered in the studied vineyards the following values:

Coteşti 25% VI, 15,3% V2, 7,5% V3 and 2% V4

Odobeşti 15,5% V1, 11,3% V2, 6,5% V3 and 1% V4

Panciu 10,5% V1, 7,5% V2, 5,5% V3 and 1,5% V4

The grapes crop per hectare is correlated to the levels of incursion made by the pest, inscribing on the 4 analysed years the following values per hectare:

Coteşti 7,5 to/ha V1, 9,9 to/ha V2, 11,6 to/ha V3 and 13,3 to/ha V4

Odobeşti 11,6 to/ha V1, 13,5 to/ha V2, 13,8 to/ha V3, 15,7 to/ha V4

Panciu 7 to/ha V1, 8,7 to/ha V2, 9,5 to/ha V3 and 12,5 to/ha V4

In all the observation areas in the 4 years, at all the supervised tests, it can be seen that the most relevant finicality appears at the 1th variant. The degree of leaves incursion provoked by mildew is an exception, where the utmost value is reached at the 2nd variand.

The expenses per hectare are at their lowest at the 3rd variant and the grape production price on the grape tonne reaches the maximum at the 1st variant and the minimum – 46 EURO / tonne so the most profitable is the 4th variant.

From this dynamics of the analysed parameters, there aren't any deflections from the 3 studied ilks – Fetească regală, Chasselas dore and Merlot, the results being the same. Only the amplitude of the pure values with the fractionalyy values are different.

According to the observation made the most frequent use of the pesticides mixture is imposed upon and this happens from the following reasons:

To control more parasites, more pest or more weed at the same time, so to increase the treatments action spectre.

- To control all the pest from a crop at one time simultaneously
- To protect the crop against ailment, pest or weed simultaneously and to administer fertilizers or growth adjusters.
- To reduce the expensive pesticides consumption by applying them in smaller doses with cheaper pesticides, but with the same controlling spectre.
- To prevent the formation of parasites breeds, pest or weed resistant to pesticides.
- To increase the pesticides effectiveness through the synergy effect.

From the data above, it is clearly seen that by the pesticides dosage in mixture there is a substantially decrease of the necessary expenses for protecting the crop; time, fuel soil subsidence are saved up and also the environment is more protected.