



GERMPLASM REPOSITORY FOR GRAPEVINE

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Ampelography - 3rd International Course at the Institute of Grapevine Breeding Geilweilerhof/Germany, July 14—17, 1992

ERIKA DETTWEILER-MUNCH

This course was aimed to train objective description of grapevines, in order to obtain comparable results for grapevine identification. The main working paper was the 'Preliminary Minimal Descriptor List for Grapevine Varieties'. Fifteen participants from Australia, France, Germany, Hungary, Italy, Spain, Switzerland and Yugoslavia got methodical instructions and practice on field evaluation, leaf-, berry- and seed measuring methods and virus sanitation.

Papers were presented on 'The application of grapevine description at the 'Bundesortenamt' (Federal Office of Plant Varieties) and UPOV' (R. BECHER), 'The importance of virus free plants for the identification and differentiation of grapevine cultivars' (ERIKA DETTWEILER-MUNCH), 'Virus diseases and corresponding symptoms' (M. MAIXNER), 'Detection of grapevine virus' (MARIA RÜDEL), 'Sanitation of virus-infected material' (MARGIT HARST-LANGENBUCHER).

Instructions were given by J.M. BOURSQUOT (France), ERIKA DETTWEILER-MUNCH (Germany) and ANNA SCHNEIDER (Italy). Data processing programs were written by R. EIBACH (Germany).

Evaluation of descriptors in the grapevine collection

The course was mainly focused on the evaluation of visually recorded characters, whose reproducibility is particularly problematic. The Table allows the following conclusions from evaluations of 13 descriptors on 10 different cultivars:

- Well suited for description seem to be characters 004 to 076-1 with coincidence between participants and instructors between 95 and 100 %.
- More difficult to describe are characters 083-1, 083-2 and 081, showing a coincidence between 62 and 85 %.
- The most selective characters in this analysis have a scale from 1 to 9 (004 and 053). Less suitable are those with a medium scale (068, 070-1 and 076-1). Of limited suitability are the characters ranging from 1 to 3 (007, 008, 051-1 and 051-2).

An identification analysis comparing the 13 notations of the 10 described cultivars with those of 113 other cultivars and taking into account the fluctuation ranges listed in the Table revealed that on average 17 % of the 113 cultivars were selected as possibly identical with the described one. In 88 % of the cases the cultivar sought after was

among the selected ones. Berry shape, berry color and flesh color could not be evaluated although this would have improved identification results considerably. Based on the experiences acquired during the course in a final discussion suggestions were made to improve the descriptor sheets of the 'Preliminary Minimal List', especially for characters difficult to record.

From leaf sampling to leaf measuring

If several persons measure the same distances on a given leaf, objective data should be obtained. The remaining difficulty is the sampling of well suited, non damaged leaves, on healthy plants, within the medium third of the cane, as defined in the 'OIV Descriptor List for Grapevine Varieties and Species'.

After sampling and drying of leaves, 12 distances and angles, and the density of prostrate and erect hairs on the lower side of the leaf were recorded. Computer and hand measuring showed good coincidence. Identification analyses were carried out, comparing the means of the 14 characters of 13 cultivars considered as 'unknown' with those from 65 other cultivars recorded at several sites. One analysis used all recorded characters plus 8 calculated ratios; another one only the 8 ratios, the opening of the petiol sinus, and hair density.

On average, descriptor expression for cultivars with the same name was identical for both analyses (around 60 %) but considering that the leaf size is dependent on environmental conditions, the use of ratios would be advantageous.

Table
Results of visual evaluation - coincidence of notations between participants and instructors

OIV Code	Character	Notation scale	Fluctuation range	Coincidence of notations (%)
004	Density of prostrate hairs of tip	1-9	± 2	97
007	Color of dorsal side of internodes	1-3	± 1	99
008	Color of ventral side of internodes	1-3	± 1	100
016	Distribution of tendrils on the shoot	1, 2	0	100
051-1	Color of the upper side, leaves 1-3	1-3	± 1	100
051-2	Color of the upper side, leaves 4-6	1-3	± 1	99
053	Density of prostrate hairs between veins, leaf 4	1-9	± 2	98
068	Mature leaf: number of lobes	1-5	± 1	99
070-1	Anthocyanin coloration of main veins on the upper side	1-4	± 1	95
076-1	Shape of teeth	1, 2, 3, 4, 5	1-5; 13; 14; 23; 34; 35	99
081	Particularities of petiol sinus	1, 2, 3	*)	62
083-1	Shape of base of upper leaf sinus	1, 2, 3, 4	**)	85
083-2	Shape of base of lower leaf sinus	1, 2, 3, 4	**)	70

*) identical with instructors notation

***) part set of instructors notation

Furthermore these results show that for practical use in identification analyses, all cultivars should be retained, where at least 50 % of the descriptors have identical expression. For the 1st analysis about 28 %, for the 2nd analysis about 32 % of the 65 cultivars would have been selected as possibly identical with the 'unknown' one. A reduction of this number may be obtained by improving the statistical background of the identification analysis.

The similarity value was not affected by the number of measured leaves per cultivar.

C o n c l u s i o n s

The results of the 3rd International Ampelography Course have shown that practical experience will eventually lead to comparable results, but some descriptors should be improved. In respect to the establishment of an identification system, the results of this course provided valuable indications. A resolution was formulated recommending that the 4th International Ampelography Course in 1993 should take place in a mediterranean region so that the consensus of this meeting could be compared to that from a different climatic environment.