

DOKUMENTATION  
DER  
WEINBAUFORSCHUNG

## B. MORPHOLOGIE

JONA, R., VALLANIA, R., ROSA, C.: **Cell wall development in the berries of two grapevines** · Die Entwicklung der Zellwand bei den Beeren zweier Rebsorten  
 Scientia Hort. (Amsterdam) **20**, 169—178 (1983)  
 Ist. Colt. Arbor., Univ. Turin, Italien

Although Authors suggest in the introduction that one of the objectives of this study is to elucidate the genetic control of grape berry cell wall composition, this is not attempted in the paper. The manuscript simply describes the composition of cell walls of berries of 2 *Vitis vinifera* cvs. Barbera and Freisa, at several times before and after commercial maturity. Cell wall composition was determined on paraffin-embedded sections using differential extractions followed by staining with the periodic acid Schiff's (PAS) procedure coupled with microspectrophotometry. This procedure is fine for pectins and hemicelluloses but cellulose gives a weak staining reaction with the PAS technique and therefore the values for cellulose may be under-estimated. With the limitations of this procedure in mind, the study did show differences in the accumulation and eventual breakdown of cell wall materials between the 2 cvs: Barbera fruits accumulated and lost (after delayed picking) cell wall materials much faster than Freisa. Both cvs show a decrease in pericarp cell number with time but the mechanism for this is not explained.  
 R. L. Peterson (Guelph)

RAJASEKARAN, K., MULLINS, M. G.: **The origin of embryos and plantlets from cultured anthers of hybrid grapevines** · Der Ursprung von Embryonen und Keimlingen aus Antherenkulturen von Hybridreben  
 Amer. J. Enol. Viticult. **34**, 108—113 (1983)  
 Dept. Agron. Hort. Sci., Univ. Sydney, N.S.W., Australien

Embryogenic callus derived from cultured anthers of the ♂ hybrid grapevine Gloryvine (*Vitis vinifera* × *V. rupestris*) contained both haploid ( $n = 19$ ) and diploid ( $2n = 38$ ) cells. Cytofluorimetric nuclear DNA determinations also showed the presence of both 2C (64 %) and 1C (1.5 %) nuclei. However, number of haploid cells decreased with culture time and all regenerated plantlets were diploid. Cytological evidence indicated that the callus produced by the anthers originated from the filament or the connective but not from the microspores, which had a degenerated cytoplasm filled with starch grains. A number of the regenerated plants died prematurely or were abnormal (albinism), but the rest exhibited considerable variation both in growth rate and leaf morphology. 2 of the regenerated plants developed perfect flowers and berries. The regenerated plants did not originate from endoreduplicated haploid cells since progenies from selfed anther-derived plants segregated for leaf characters and vigor. Indophenol oxidase, leucine aminopeptidase and catechol oxidase isozyme patterns were similar in all anther-derived plants and identical with those of the parental genotype.  
 F. Sági (Szeged)

## C. PHYSIOLOGIE

AGARWAL, P. K.: **Effect of storage in organic solvents on the germination of grapevine pollen** · Keimung von Rebenpollen nach Lagerung in organischen Lösungsmitteln  
 J. Hort. Sci. **58**, 389—392 (1983)  
 Indian Inst. Hort. Res., Bangalore, Indien

Storage of pollen grains without any solvent leads to a complete lack in germination after 2 months. The storage in various organic solvents reduces at first the germination; but after storage for different periods a gradual increase in the percentage of germination is observed. There are positive correlations between the percentage pollen germination and pollen tube length. Amyl alcohol gives maximum germination percentage and pollen tube length, compared with the control and other solvents. Even after storage for 6 months in organic solvents, grapevine pollen gives successful results in hybridization.  
 L. Carraro (Mailand)

AKOPYAN, G. A., OGANYAN, E. A.: **Dynamics of sugar accumulation and harvesting time of the cv. Khindógný at different soil moisture** · Über die Dynamik der Zuckereinlage-

runge und des Lesezeitpunktes der Sorte Khindogny bei unterschiedlicher Bodenfeuchte (russ.)

Vinodel. i Vinogradar. SSSR (Moskau) (4), 40—42 (1983)

In the period Sept. 3—Oct. 2 at 3 to 8-d intervals in berries of the cv. Khindogny, the mass of 100 berries, their volume, sap content, density, sugar content, and acidity was followed in lowland fields with irrigation and on slopes with and without irrigation (soil moisture was 17.5, 12.8 and 9.6 % of dry mass of the soil, respectively, at the end of the period). During the following period an increase in mass and sap content of the berries was found. On the slopes the sugar content, sap content and berry density were higher than in the lowland. Irrigation diminished the sugar content and increased the density of berry sap. The yield was 20.9 t/ha in the lowland, and 16.2 and 5.0 t/ha on irrigated and non-irrigated slopes. Nevertheless, maximum berry mass and sap content were always found at a sugar content of 20—21 %, but the best time for harvesting was at a sugar content of 17—19 % when fructose content and content of aromatic substances were at maximum.

*I. Tichá (Prag)*

BELVINI, P., DALLA COSTA, L., GOLFETTO, W., SCIENZA, A.: **Effects of some genetic, environmental and growing factors on the importance of frost damages on vines** · Einfluß einiger Vererbungs-, Umwelt- und Wachstumsfaktoren auf die Bedeutung von Frostschäden bei Reben (ital. m. engl. Zus.)

Vignevisini (Bologna) 10 (3), 33—40 (1983)

Ist. Colt. Arbor., Fac. Agrar., Univ. Mailand, Italien

Special climatic conditions (drought, prolonged periods below 0 °C) during the winter of 1980/81 enabled an investigation of factors contributing to winter frost resistance. Damage assessment was based on percentage of buds with necrosis. Cultivar seemed the most important factor. The prolific Prosecco and also Cabernet Sauvignon proved sensitive, while Verduzzo Trevigiano, Merlot and Pinot gris were much more tolerant and had a low percentage of dead buds. In densely planted vines, low vigor and yield may have accounted for better tolerance (also shorter vegetative cycle), frequently weak vines were more severely damaged. Cabernet Sauvignon showed less damage on the most vigorous and drought tolerant rootstocks, such as 1103 Paulsen, 125 AA and also SO 4. N applications seemed beneficial. Late pruning (after frost in March) resulted in less damage and should be preferred.

*P. Spiegel-Roy (Bet Dagan)*

BUDÍN, R.: **Accumulation of anthocyanins, saccharides and organic acids in the berries of Blaufränkisch and St. Laurent during ripening** · Anhäufung von Anthocyanen, Sacchariden und organischen Säuren in den Beeren von Blaufränkisch und St. Laurent in der Phänophase des Reifens (tschech.)

Vinohrad (Bratislava) 21, 111—113 (1983)

Mährischer Weinbaubetrieb, Mikulov, ČSSR

In berries of both cvs a decrease in the content of organic acids (mainly tartaric and malic acid) and an increase in saccharides and anthocyanins were found during berry ripening. Anthocyanin accumulation starts later than accumulation of saccharides and organic acid degradation. The present anthocyanins are 3-monoglucosides of cyanidin, malvidin, peonidin, petunidin, delphinidin and their composition is stable and not influenced by environmental factors. The cell sap of the berries contains glucose and fructose, the ratio of which increases from 1 : 1 to 1 : 1.3 in favour of fructose. The process of anthocyanin accumulation may be divided into 3 phases: a) preparative phase (Aug. 14—Sept. 5 for Blaufränkisch and Aug. 3—18 for St. Laurent), b) linear synthesis and accumulation of anthocyanins (Sept. 5—Oct. 15 and Aug. 18—Oct. 12) and c) stagnation of anthocyanin accumulation (after Oct. 15 or 12). Phase b is strongly influenced by environmental factors.

*I. Tichá (Prague)*

CURRLE, O., BAUER, O., HOFÄCKER, W., SCHUMANN, F., FRISCH, W.: **Biologie der Rebe. Aufbau, Entwicklung, Wachstum** · The biology of the grapevine. Structure, development, growth

Verl. D. Meininger, Neustadt/Weinstr., 301 S. (1983)

This monograph summarizes information on the biology of the grapevine obtained during the last 20—30 years. 5 chapters deal with the physiology and, in much less detail, the geography, ampelo-

graphy, genetics and structure of the vine. Written in German for readers of wide interests, including growers and students, the discussions of the plant-environment relationships have a bias towards the German, cool-climate conditions. Many German theses that are internationally not well known are listed. Regrettably, the book suffers from lack of attention to detail in the listing of the references, the legends to the figures and tables, the spelling of names of persons and cvs and even in the labelling of numerical data. The cross-checking of the sections written by different authors is insufficient, leading to duplications and inconsistencies. The non-scientific reader would surely have welcomed a glossary, and all readers a better index. In all, this review of our present knowledge of an important woody, perennial crop plant is worthwhile, but should be used with caution to avoid proliferation of its errors.  
P. May (Adelaide and Dijon)

ECEVIT, F. M., ILTER, E., KISMALI, I.: **Effets de certains porte-greffes américains sur la nutrition minérale de la vigne *V. vinifera* var. Yuvarlak Çekirdeksiz (Sultana)** · Effects of several American rootstocks on the mineral nutrition of the *V. vinifera* cultivar. Sultana

Bull. OIV 56, 509—520 (1983)

Fac. Agron., Ege Univ., Dept. Cult. Amelior. Plantes, Borrova, Izmir, Türkei

Dans le vignoble de la Faculté d'Agronomie de l'Université d'Egée à Izmir en Turquie, des porte-greffes américains associés à la variété de *Vitis vinifera*, Sultana, ont permis de constater des différences importantes dans la composition minérale des feuilles de ce cépage. En effet, avec le 41 B et le 420 A la teneur en N reste faible et pour le 161—49 C. et le 41 B la teneur en P est insuffisante. K est peu absorbé par le 420 A, assez peu par le 99 R. et le Rupestris du Lot. L'absorption la plus importante du Mg est notée pour le 41 B et la plus faible pour le 420 A. Enfin, tous les porte-greffes absorbent correctement le Ca.  
M. Broquedis (Bordeaux)

IVANCHEV, V.: **Concerning the question of frost resistance of grapevines** · Über die Frage der Frostresistenz der Reben (bulg.)

Lozar. Vinar. (Sofia) 31 (8), 25—28 (1982)

Nauchnoizsled. Inst. Lozar. Vinar., Plevan, Bulgarien

The physiological causes of frost resistance of grapevines were determined by photosynthesis intensity and metabolic processes. By use of  $^{14}\text{CO}_2$ ,  $^{14}\text{C}$ -glucose,  $^{14}\text{C}$ -fructose and  $^{14}\text{C}$ -glutamic acid Author found that there is some correlation between the speed of sugar and amino acid transformation into organic acids on one side and the frost resistance of the cv. on the other side. The cvs nonresistant to frost and the leaves and shoots in shadow have faster sugar decomposition and a high acidoglucometric index.  
M. Milosavljević (Belgrad)

OGANESYAN, A. A., NUTSUBIDZE, N. N.: **The influence of some organo-phosphorous insecticides on nitrate reductase activity of grapevine** · Einfluß einiger Organ-Phosphor-Insektizide auf die Nitratreduktaseaktivität bei Reben (russ. m. grus., engl. Zus.) Soobshch. Akad. Nauk Gruzinsk. SSR (Tbilisi) 109, 397—400 (1983)

3-month-old seedlings of field-grown Rkatsiteli grapes were transferred in water, sprayed with 0.2 % solutions of chlorophos, cyanox or gardona, and put in a 0.036 M  $\text{KNO}_3$  solution. 24 and 48 h after spraying the nitrate reductase activity (NRA) in shoots and roots was analysed. Cyanox treatment increased NRA against the background of nitrate feeding after 24 and 48 h in the leaves; in the roots, NRA was inhibited 24 h after spraying but increased 48 h after cyanox application. Gardona increased NRA after 24 h only by 22 % in the leaves, but not more after 48 h; in the roots a small increase in NRA was found both after 24 and 48 h. Chlorophos inhibited NRA in the leaves after 24 and 48 h, and in the roots 48 h after application.  
I. Tichá (Prague)

PERRET, P., HESS, G.: **Untersuchungen über den Chloroseindex nach POUGET (IPC) in chlorotischen und gesunden Rebbergen der Ostschweiz** · Investigations concerning the index of chlorosis according to POUGET (IPC) in chlorotic and non-chlorotic vineyards in east Switzerland

Schweiz. Z. Obst- Weinbau 119, 403—406 (1983)

Eidgenöss. FA f. Obst- Wein- Gartenbau, Wädenswil, Schweiz

Zur Erkennung von Chlorosestandorten auf den für die Ostschweiz typischen Braunerdeböden ist

der Chloroseindex nach POUGET ungeeignet. Statt dessen werden die Stärke der Bodenverdichtung und damit einhergehend die Störung des Gas- und Wasserhaushaltes als chloroseauslösende Faktoren angesprochen. Besonders bei der Auswahl von Unterlagsreben sollte deren Kalkverträglichkeit nicht als alleiniges Indiz für die Verwendung auf Chlorosestandorten herangezogen werden.

*K. Herwig (Geilweilerhof)*

SLAVCHEVA, T.: **The photosynthesis of grapevine. I. Light curves** · Die Photosynthese der Rebe. I. Lichtkurven (bulg. m. russ., engl. Zus.)

Gradinar. Lozar. Nauka (Sofia) **19** (6), 104—114 (1982)

Nauchnoizsled. Inst. Lozar. Vinar., Pleven, Bulgarien

By gas analyzer photosynthesis light curves were determined on plants grown in greenhouse and the influences of CO<sub>2</sub> concentration, temperature and soil moisture were investigated. It was found that for greenhouse-grown plants, at a CO<sub>2</sub> concentration from 0.03—0.04 % and at other convenient conditions, the light optimum was 25 · 10<sup>3</sup> to 35 · 10<sup>3</sup> lx. For field-grown plants, the light optimum was 40 · 10<sup>3</sup> to 50 · 10<sup>3</sup> lx. By temperature changes from 18—21 to 42—45 °C, the light compensation point changed to 2 · 10<sup>2</sup> lx, while decreasing soil moisture (from 70—30 % of the maximum water capacity) changed the compensation point from 4 · 10<sup>2</sup> to 10 · 10<sup>2</sup> lx. The form of light curves is reciprocally dependent on the ecological factors mentioned. *M. Milosavljević (Belgrad)*

STOEV, K., IVANCHEV, V.: **Concerning the assimilate translocation in the cv. Merlot**

Über den Transport der Assimilate bei der Sorte Merlot (bulg.)

Lozar. Vinar. (Sofia) **32** (1), 18—20 (1983)

Nauchnoizsled. Inst. Lozar. Vinar., Pleven, Bulgarien

By use of <sup>14</sup>CO<sub>2</sub> radiographic method on umbrella-trained Merlot grapes, Authors found: Before berry ripening, the assimilates were translocated in most cases to the older parts of stem and root; during berry ripening, they were directed to the clusters. In this phase, in high yielding plants during > 20 d assimilates were not translocated at all to the root, compared to lower yielding plants.

*M. Milosavljević (Belgrad)*

## D. BIOCHEMIE

GORKOVLYUK, N. P., DUDKIN, M. S.: **Characteristics of cell wall cellulose of grapevines** · Eigenschaften der Zellwandcellulose bei Reben (russ.)

Izv. Vyssh. Uchebn. Zaved., Pishch. Tekhnol. (3), 28—31 (1983)

Tekhnol. Inst. Pishch. Prom. Im. M. V. Lomonosova, Odessa, UdSSR

Chemical analysis of Aligote grapes led to significant data on the submicroscopic structure of the cell wall cellulose. The primary structure of this polysaccharide is identical to the cellulose of other higher plants. Its polymerization degree is 897 and it is lower than with woody plants, cotton and some grasses. The monosaccharide hydrolysate of polysaccharides contains 83.27 % glucose and 6.75 % xylose. The light-hydrolyzable fraction of polysaccharides is only 5.56 %. The great stability of the elements of the cellulose structure of grapevine and its resistance to enzymes is one of the reasons for low value of marc as animal food. *M. Milosavljević (Belgrad)*

WILLIAMS, P. J., STRAUSS, C. R., WILSON, B.: **Recent developments in grape flavour research** · Gegenwärtiger Stand der Erforschung des Traubenaromas

Austral. Grapegrower Winemaker (232), 20—24 (1983)

Austral. Wine Res. Inst., Glen Osmond, Südastralien

In this review Authors summarize the current status of aroma research in grape must and wine. The terpenoid compounds play a decisive role in the characterization of grape cvs and wine quality. The importance of the monoterpene-diols and the monoterpene-triols as primary wine aromas is reported, and the influence of temperature and pH on the formation of terpenoids is discussed. Further, the glycosidic bonds of some terpene components are reported. With the aid of HPLC, certain terpene alcohol-glycosides ( $\beta$ -rutinoside, arabinosoyl- $\beta$ -D-rutinoside) are detected. For several

components, the portion of terpene glycoside comes up to 50 % of the content of the free compounds. Both enzymatic cleavage and heat treatment lead to higher yields of terpene compounds in grape must and wine.

A. Rapp (Geilweilerhof)

## E. WEINBAU

ANONYM: **La fumure de la vigne, directives pour la Suisse romande (Révision 1983)**  
Fertilization of grapevines, recommendations for Swiss growers (revised edition 1983)  
Rev. Suisse Viticult. Arboricult. Hort. (Changins) 15, 155—163 (1983)

Chemical soil analysis is only one of several factors to be considered in determining the need for fertilizer. Depth and physical character of the soil, volume of the stones present in it, organic content, etc. are also important to think about. This paper tries to fit together all these different factors.

R. Wagner (Villeneuve-les-Maguelonne)

ANTCLIFF, A. J.: **American hybrid grape varieties in Australia** · Interspezifische Rebkreuzungen in Australien

Austral. Grapegrower Winemaker (232), 26—27 (1983)

Div. Hort. Res., CSIRO, Merbein, Vic., Australien

CSIRO Merbein Laboratory and Sydney University examine American hybrids to select cvs suitable for grape juice production. The particularities of the areas along the east coast of Australia — irrigation regions (highly alkaline soils) and humid areas — do not favour growth and fruiting of the American hybrid vines, especially when growing on their own roots. 22 cvs are listed in approximate order of vigour (4 classes), and those with weak or very weak growth must be grafted, preferably on Dogridge, a vigorous rootstock. Up to now, the most successful cvs are: Canada Muscat, Concord, Campbell Early, and Catawba.

B. H. E. Hill (Lauffen)

BECKER, N.: **Klone und Standortfragen der Rotweinsorten** · Clones and questions of habitat of red grapevine cultivars

Bad. Winzer (7), 374—380 (1983)

Staatl. Weinbauinst., Freiburg/Br.

This is a report on "Blauer Spätburgunder" (BS), which is the most common red cv. in the German vine-growing region of Baden. BS is wide spread over different climatic zones, because it has only low needs to climate and soil and shows a high adaptability on local conditions. It is known, that BS prefers deep and porous soils, and the sugar content of the grapes will come up to 80 °Oe when heat-summation (base 10 °C) will be at least 1000 degree-days from April to October. — There is also a description of the aims and of the practice of the clone selection of BS in Südbaden. The most important criterions to select clones of high wine quality are low shattering and resistance to *Botrytis* and high constancy in yield at a medium yield level.

M. Klenert (Geilweilerhof)

BECKER, N., ZIMMERMANN, H.: **Experimentell-ökologischer Versuch zum Einfluß der Lichtintensität und der Wasserversorgung auf Wachstum, Entwicklung und Ertragsbildung bei Topfreben** · Experimental-ecological test on the influence of light intensity and water supply on vegetative growth, development and yield of vines cultivated in pots (m. engl., franz. Zus.)

Wein-Wiss. 38, 219—259 (1983)

Staatl. Weinbauinst., Freiburg/Br.

In 2 subsequent years the effects of light intensity and water supply on growth and developmental processes of 3-year-old container-grown Müller-Thurgau and Riesling vines grafted on Kober 125 AA were examined. The following combinations were used: high light intensity (HL) + dry soil (DS), HL + humid soil (HS), and low light intensity due to shadow (LL) + HS. In general, Müller-Thurgau exerted a higher sensitivity to light and water changes than Riesling. The transpiration rate of Müller-Thurgau at HL + HS was distinctly higher than that of Riesling, the water use efficiency of Riesling being higher than that of Müller-Thurgau. HS + LL led to an increased ratio of leaf surface/unit fresh weight and simultaneously reduced the degree of succulence and the dry

matter production/unit leaf area. At DS the berry growth was reduced, the maximum acidity was increased, its degradation was enhanced; moreover the increase of the sugar concentration in Müller-Thurgau was delayed leading to a lower amount of sugar/berry. LL increased the acidity especially in Riesling. At HL + HS yield and quality were highest. Berry set was reduced by LL, berry weight by DS. The climatic effects on the wine quality are different in Riesling and Müller-Thurgau.  
H. Düring (Geilweilerhof)

**CHAMPAGNOL, F.: Choix de l'orientation des rangs et de la densité de plantation des vignes** · Choice of row orientation and vine planting density

Progr. Agric. Vitic. (Montpellier) **99**, 564—570 (1982)

North-south rows intercept more radiation than do those orientated east-west in June, but by the end of September the difference is considerably less. These calculations are for isolated rows, and take no account of cross-row shading. The significant interaction of row orientation and leaf angle is discussed. The interaction of diurnal temperature and radiation interception is important. During berry ripening, low morning temperatures can inhibit photosynthesis, which favours east-west over north-south row orientation. This advantage can be lost when water stress is severe in the middle of the day. A row orientation of 110—290 °C causes maximum radiation interception when temperatures are optimal for photosynthesis. The effects of vineyard density are very much governed by water availability to the vine. Author recommends row spacings of 2—2.25 m for poor soils and 2.5 m for fertile soils.  
R. E. Smart (Ruakura)

**DURQUETY, P. M., NAUDE, E., BLANCHARD, P.: Le porte-greffe en viticulture** · Behavior of [phylloxera-resistant] rootstock varieties in vineyard

Progr. Agric. Vitic. (Montpellier) **99** (10), 226—239; (13—14), 313—324; (15—16), 349—360; (17), 384—395; (19), 435—446 (1982)

Different trials with 4 cvs (Petit Manseng, Gros Manseng, Tannat and Cabernet Franc), each grown on 5 rootstocks (not always the same) are laid out in vineyards according to Latin squares designs. They have been established in the viticultural area of Jurançon at the foot of the Pyrenées mountains (France). Clonal material was available for the scion, but not for the rootstock cvs. (Among them: 5 BB, 101—14 M. G., 110 R., 140 R., 196—17, 3309 C., *Riparia* × *Rupestris* × *Vinifera* 4010, *Riparia* × *Rupestris* de Massanes, *Riparia* Gloire, SO4). For each scion cv. the best rootstock is emphasized for different objectives: good yield or high sugar level of the berries.  
R. Wagner (Villeneuve les Maguelonne)

**GARGIULO, A. A.: Woody T-budding of grapevines — storage of bud shields instead of cuttings** · Die T-Schnitt-Okulation bei Reben — Lagerung von Augenschildchen anstatt Edelreiseruten

Amer. J. Enol. Viticult. **34**, 95—97 (1983)

Esta. Exp. Agropecuar. Rama Caida, I.N.T.A., San Rafael, Mendoza, Argentinien

In order to reduce the space needed for cold-storing dormant cuttings and the demand for hand-work during the budding season, dormant bud shields were cut and stored. The results obtained indicate that the storage of woody bud shields instead of cuttings did not affect the percentage of take, reduced approximately 6fold the cold storage space needed, and thus the cost of storage. Even the comparison of various methods of storage shows no significant differences referring to the mean take of buds.  
B. H. E. Hill (Lauffen)

**GRENAN, S.: Utilisation des hormones et des cires à greffer dans l'amélioration de la production des plants de vigne greffés-soudés** · Use of hormones and grafting-wax to improve the grafted vine production (m. engl. Zus.)

Vignes et Vins (Paris) **320**, 6—11 (1983)

Assoc. Natl. Tech. Amélior. Viticult., Le Grau-du-Roi, Frankreich

Fast callogenesis is noticeable when hormones are used in a dipping solution or in grafting-wax. But only soaking in  $\alpha$ -NA hormone at  $4 \cdot 10^{-5}$  M gives better yield in grafted vine production. Discussion on practical use of these results follows.  
R. Wagner (Villeneuve-les-Maguelonne)

INTRIERI, C., MAGNANINI, E., SILVESTRONI, O.: **Effects of summer pruning on vegetative and productive behaviour of vinegrape (*Vitis vinifera* L.)** · Einfluß des Grünschnittes auf das vegetative und generative Verhalten von Reben (*Vitis vinifera* L.) (ital. m. engl. Zus.)

Vignevis (Bologna) 10 (5), 57—62 (1983)

Ist. Colt. Arbor., Univ. Bologna, Italien

The effect of shoot topping, 1, 7 and 11 weeks after anthesis, on Albana and Sangiovese cvs was studied. Vines were trained by either "Duplex on G. D. C." system and grown on 5 BB and 140 Ruggeri, respectively. Compared to unpruned vines, shoot topping 1 week after anthesis increased berry growth and T. S. S. while acidity accumulated faster during period I and decreased rapidly during stage III. Topping 7 weeks after anthesis decreased berry growth, T. S. S. and slowed acidity breakdown. Similar, but much slighter effects were noted with the vines topped 11 weeks after anthesis. The more precocious Albana was more sensitive to the treatments than the later maturing and less vigorous Sangiovese. Generally, topping during period I enhanced ripening, and provoked early growth of laterals. Topping during period II and III delayed ripening with a competitive effect of young laterals with fruit. *P. Spiegel-Roy* (Bet Dagan)

JANICK, J.: **Production of fruiting grapevines for pot culture** · Produktion von trauben-tragenden Reben für die Gefäßkultur

Hort Science 18, 56—57 (1983)

Dept. Hort., Purdue Univ., West Lafayette, USA

Results of forcing Aurore grapevines produced from soft-wood cuttings, grown for a single season in the field, harvested in the late fall, and held bare root in cold storage are described. Soft-wood cuttings were propagated May 1 and 15, June 22 and July 20, 1981, and field-planted that year on June 9 and 25, July 20, and August 12, respectively. Vines were dug in late fall, overwintered bare root in 5 °C storage, potted and forced in an 18 °C minimum night temperature greenhouse at 2-week intervals from January 29 to March 12, 1982. — Forced vines produced from cuttings and field-planted in June yielded fruit clusters. July and August planted cuttings produced few or no flowers. There was little difference in fruit cluster characteristics in response to the early forcing dates. Vine height decreased with each propagation and field-planting date. The number of flowers/cluster declined with each propagation and field-planting date. *M. Ahmedullah* (Prosser)

MIKULÁS, J., FEJES, M.: **Cynodon dactylon (L.) PERS. und Möglichkeiten der Bekämpfung in Rebanlagen** · *Cynodon dactylon* (L.) PERS. and possibilities of control in vineyards (ungar. m. russ., dt., engl. Zus.)

Szölötermesztés Borászat (Kecskemét) 5 (1), 19—22 (1983)

*Cynodon dactylon* can be controlled in vineyards by Fusilade 25 EC, 4—8 l/ha. The grapevine is not affected by the herbicide. The efficacy of the herbicide can be increased by adding Aplus 200 F + paraffin. *A. Hegedüs* (Budapest)

PEACOCK, W. L., BROADBENT, F. E., CHRISTENSEN, L. P.: **Late-fall nitrogen application in vineyards is inefficient** · Stickstoffanwendung bei Rebanlagen im Spätherbst ist unwirksam

Calif. Agricult. 36 (1—2), 22—23 (1982)

Fall (November 9) and spring (March 12) application of <sup>15</sup>N labelled ammonium sulfate to Delhi sand (Fresno County) and a Greenfield sandy loam (Tulare County) soils were conducted to determine how much of the fertilizer N applied remained in the soil at various depths the following spring. About 1 month after the November N application, most of the fertilizer N remained in the top 0.3 m of soil, however, by April nearly all the fertilizer N was leached out of the top 1.2 m of soil for both soil types. In the case of the March applied N, most of the fertilizer N remained in the top 1.2 m of soil 1 month after application, however, by May 23, the N was displaced downward and little of the fertilizer applied N remained in the profile for Delhi sand. Authors suggest that N applied just after budbreak in the spring would likely be more efficiently utilized than fall application.

*W. M. Kliewer* (Davis)



RÁGALA, P.: **Schädlicher Einfluß von Herbiziden mit Carboxylsäure-Derivaten auf die Rebe** · Detrimental effect of herbicides containing carboxylic acid derivatives on vines (slowak.)

Vinohrad (Bratislava) **21**, 150—152 (1983)

Komplexný Výskumný Ústav Vinohradn. Vinár., Bratislava, ČSSR

Schäden durch Herbizide können auftreten in Form von Verminderung der Blattfläche, Blattdeformationen (mit Verringerung der Photosynthese), erhöhte Bildung von Geiztrieben, Abfall von Blüten. Derlei Schäden können auch im Folgejahr auftreten.

J. Blaha (Brno)

ROUMBAS, N.: **Développement de la vigne et problèmes de fertilité dans le vignoble de Chypre, en 1980** · Vine development and fertility problems in the vineyards of Cyprus

Connaiss. Vigne Vin (Talence) **17**, 73—91 (1983)

Inst. Oenol., Univ. Bordeaux II, Talence, Frankreich

This is a study of vine development in 3 experimental plots in Cyprus, for the cvs Local noir, Xinisteri, Cabernet Sauvignon, Cabernet noir, Mataro and Grenache noir. Xinisteri was the 1st cv. to go through bud break, and Cabernet Sauvignon the last. There was a difference between the 3 sites in the relative bud break of the 3 cvs. The loss of the shoot apex occurred 94—124 d after bud break and was affected more by site than by cv. Leaf fall occurred from 84—139 d after loss of the shoot apex. The coolest site studied (Polemi) had the longest period between these 2 stages — another site studied (Mallia) had the shortest interval, due to shallow topsoil. Highly significant logarithmic correlations between flower number/cluster and inflorescence length were established. Bud fertility varied between cvs and sites and was highest where the vines were better supplied with water and nutrients. Flowering and fruit set was related to bud fertility and was also improved by these conditions.

R. E. Smart (Ruakura)

VERGNES, A.: **Sur des "Traitements" à appliquer contre la coulure du Grenache** · Methods of controlling coulure in Grenache

Progr. Agric. Vitic. (Montpellier) **99**, 571—573 (1982)

Sta. Rech. Vitic., INRA, Montpellier, Frankreich

This experiment describes the effects of late pruning and leaf topping on coulure incidence in Grenache. 3 pruning dates were compared — before leaf fall (Oct. 9), mid-winter (Jan. 20) and at bud break (April 6). This was compared to topping (5—6 young leaves, 15 d before flowering) or the same removal at full flowering. Yield was increased by both late pruning and late topping with the combination yielding 4.6 kg/plant compared to 2.9 kg/plant for control. Associated with the increased yield was a decreased sugar content — from 12.8 to 10.7 degrees for the treatments above. The extent to which coulure can be overcome by these treatments must be balanced against the lowered sugar concentration. The possibility of repeated treatment depressing vigour is raised.

R. E. Smart (Ruakura)

WICK, U., ALLEWELDT, G.: **Der Bodenfrüchtige Klee als Begrünpflanze für den Weinbau im Vergleich zu Weißklee** · Cover crops in viticulture: comparison between subterranean clover and white clover (m. engl., franz. Zus.)

Wein-Wiss. **38**, 260—268 (1983)

Inst. Obst- Gemüse- Weinbau, Univ. Hohenheim, Stuttgart-Hohenheim

In order to investigate the influence of different clover cover crops (*Trifolium subterraneum* var. Clare and Daliak, and *T. repens*) on the growth of grapevine, tests were carried out on the cv. Rheinriesling kept in containers, but also in out-door plantation. *T. subterraneum*, a clover widespread in Australia, would be an interesting cover crop on account of rapid but low growth, drought resistance and self-sowing. The clover Clare reduced growth of Rheinriesling, whereas Daliak, a white clover, had no influence. Under out-door conditions, Daliak showed a more rapid growth but was damaged by the first frost and no germination of the seed was observed.

G. Mayer (Klosterneuburg)

ZYL, J. L. VAN, BOOYSEN, J. H.: **Practical application of irrigation principles on the vineyards of Laborie** · Praktische Anwendung von Bewässerungsmethoden in den Rebanlagen von Laborie (afrik.)

Wynboer (Stellenbosch) (618), 51—57 (1983)

Navorsingsinst. Wynk. Wingerdbou, Stellenbosch

Irrigation of all vineyards on the farm Laborie was scheduled successfully with the aid of tensiometers over a period of 4 seasons. These instruments were especially useful in determining the commencement of the irrigation season and proved that no irrigation water is needed in the Coastal Region of the Western Cape until middle of November (fruit set) in most years. Irrigation frequency as scheduled by tensiometers depended on both rooting depth and soil type. On average a quantity of 299 mm irrigation water was applied per season. This represents a saving of 44 % compared to initial calculations based on crop factors and Class A pan evaporation. Adding rainfall during the growing season and the water storage capacity of the soil to the irrigation quantity, indicated that 500—600 mm water was available to the vineyards. Data on vine performance and must quality are also presented.

C. S. du Plessis (Stellenbosch)

## F. BODEN

MENGE, J. A., RASKI, D. J., LIDER, L. A., JOHNSON, E. L. V., JONES, N. O., KISSLER, J. J., HEMSTREET, C. L.: **Interactions between mycorrhizal fungi, soil fumigation, and growth of grapes in California** · Gegenseitige Beeinflussung zwischen Mykorrhizapilzen, Bodendesinfektion und Wachstum von Reben in Kalifornien

Amer. J. Enol. Viticult. **34**, 117—121 (1983)

Dept. Plant Pathol., Univ. California, Riverside, Calif., USA

Grapevines from non-fumigated soils in California were commonly infected with vesicular-arbuscular mycorrhizal fungi, 8 spp. being associated with vine roots: in vineyards fumigated with methylbromide, plants were stunted and lacked mycorrhizal infection. If DD was used for fumigation, vines were mycorrhizal and not stunted. In a greenhouse experiment, vines were grown in fumigated vineyard soil associated with either stunted or healthy plants: if mycorrhizal inoculum was added to the pots containing the latter kind of soil, growth was better than in both non-inoculated soils. In a field trial Zinfandel vines inoculated with mycorrhizal fungi in methylbromide-fumigated soil grew better and yielded more grapes than non-inoculated plants, even when most of these had become naturally infected. In a different site 13 cvs were tested in the same conditions, total growth of the inoculated vines being in total 10 % more than in non-inoculated ones.

P. Bonfante-Fasolo (Torino)

## G. ZÜCHTUNG

FANIZZA, G.: **Ridge regression for identifying quality factors in low and high yield wine grapes (*Vitis vinifera*)** · „Ridge regression“ zur Bestimmung von Qualitätsfaktoren bei Keltertrauben mit geringem und hohem Ertrag (m. ital. Zus.)

Riv. Ortoflorofruitticolt. Ital. (Florenz) **67**, 103—112 (1983)

Inst. Plant Breed., Univ. Bari, Italien

Ridge regression technique due to HOERL and KENNARD (Technometrics **13**, 55—67, 1970) was employed in identifying quality variables useful for selection criteria in a grape breeding program. The technique was applied to yield data of 10 wine grape cvs grown under irrigation in south Italy. Of the 5 independent variables, sugar percentage, pH, sugar percentage × pH, total acidity and sugar percentage/total acidity, only the first 3 were retained in the study as stable variables for selection criteria when yield was the dependent variable.

G. C. Ashton (Guelph)

KRIVÁNEK, V.: **Grundziele der Unterlagsrebenzüchtung** · Main aims of rootstock grapevine breeding (slowak.)

Vinohrad (Bratislava) **21**, 154—155 (1983)

Der Weinbau in der CSSR bedarf einer Unterlagensorte für tiefe leichte Sandböden. *V. riparia* × *rupestris* Schwarzmann verursacht an schwachwüchsigen Edelsorten und bei der Hoherziehung in solchen Böden ein vorzeitiges Altern der Reben. Den Wassermangel in leichten Böden könnte eine tiefwurzelnde Unterlage vermindern. Ein weiteres Problem ist es, eine Unterlage zu züchten, die einen höheren Kalkgehalt als 5BB verträgt. Beide Ziele werden bearbeitet, und mehrere Neuzüchtungen stehen bereits in Standortprüfungen.

D. Pospíšilová (Bratislava)

SCIENZA, A.: **Adaptation génétique de la vigne aux contraintes hydriques** · Genetic adaptation of grapevines to water stress (ital.)

Vignevini (Bologna) **10** (6), 27—39 (1983)

Ist. Colt. Arbor., Fac. Agrar., Univ. Mailand, Italien

En certaines conditions, un manque ou un excès d'eau dans le sol perturbe l'exploitation d'un vignoble. L'auteur étudie les conséquences des deux situations sur la vigne et les modalités d'adaptation de la plante dans chaque cas. Les correctifs fonciers, tels que le drainage et l'irrigation, ne sont considérés que comme palliatifs et seule l'amélioration génétique paraît pouvoir résoudre les problèmes par l'obtention de génotypes résistant mieux dans les deux situations extrêmes. L'étude des processus morpho-physiologiques de réaction de la vigne aux contraintes hydriques devrait permettre la mise au point de diagnostics précoces réduisant la longueur et le coût des travaux d'amélioration génétique.

J. Bisson (Cosne sur Loire)

TRUEL, P.: **Objectifs de l'amélioration variétale des raisins de table. Problèmes rencontrés au niveau de la production française** · Objectives in the breeding of table grapes. Problems encountered in the French table grape industry

Bull. OIV **56**, 489—497 (1983)

Domaine Vassal, Sect. Rech. Vitic. (INRA), Marseillan-Plage, Frankreich

Several standards must be met to release a cv. Consumer acceptance of table grape is largely influenced by eye appeal, this means attractive clusters with big, good flavored berries. The table grape industry wants cvs which do not require berry thinning. A larger range of early to late maturing cvs is also suitable, so as to increase the market potential and to sell well.

R. Wagner (Villeneuve-les-Maguelonne)

## H. PHYTOPATHOLOGIE

BEETZ, K. J., BAUER, A.: **Ergebnisse mehrjähriger Stiellähme-Versuche mit der Rebsorte Riesling** · Results of long-term experiments on the control of "stiellähme" (peduncle atrophy) in Riesling grapes (m. engl., franz. Zus.)

Mitt. Klosterneuburg **33**, 138—141 (1983)

In 3 years (1978—1980) gibberellic acid (GA, 100 ppm), MgSO<sub>4</sub> (16 % MgO, concentration: 2 or 5 %) and Fetrilon-Combi (0.3 %) were applied to Riesling vines growing in the Palatinate area of Germany. The efficiency of GA applications at the onset of ripening was 100 % in 1978, a year with a high rate of stiellähme, and 53—69 % in 1979, a year with a medium rate. In 1978, 5 applications of MgSO<sub>4</sub> from prebloom to the end of August had an efficiency of 93 %, compared to 2 treatments in August with an efficiency of 91 %. At lower rates of stiellähme (in 1979) or due to lower concentrations (2 %) MgSO<sub>4</sub> applications were less efficient. In 1980, combined applications of MgSO<sub>4</sub> and Fetrilon-Combi had an efficiency of 62 %. The treatments did not affect the quality but increased the yield up to 15 %.

H. Düring (Geilweilerhof)

BISIACH, M., ZERBETTO, F.: **Protection of vineyards against *Botrytis*** · Schutz von Rebanlagen gegen *Botrytis* (ital).

Vignevari (Bologna) 10 (5), 43—47 (1983)

Ist. Patol. Veg., Univ. Mailand, Italien

This paper reviews briefly the biological factors favouring onset of grey mould (*Botrytis cinerea*) epiphytotic in grapevine, the methods and fungicides used for control. 2 major spraying schedules can be adopted for controlling grey mould based, respectively, on the phenological phases of the host or on the climatic trend of the season. Traditionally, with the 1st method 4 fungicide applications are needed: (A) at the end of blooming; (B) just before bunches tighten up; (C) at the beginning of ripening; (D) 3—4 weeks before harvesting. The climatic spraying schedule calls for treatments whenever conditions favouring infections occur, i.e. continued wetting of bunches for 15 h at an average temperature of at least 15 °C. Results of control trials with Vinclozolin, carried out in central and northern Italy, in which the 2 above methods were combined, are reported and commented. The outcome of these tests is a spraying schedule in which treatments A and B can be combined in a single application before bunches tighten up. Treatment C may fluctuate and should only be applied when and if the above specified climatic conditions favouring infections occur. Treatment D should be given no less than 3 weeks before harvesting. As to sour rot induced by fungi other than *B. cinerea*, Vinclozolin is not effective in controlling it directly but reduces its incidence by preventing lesion on the berries induced by grey mould attacks.

G. P. Martelli (Bari)

BOLLER, E., REMUND, U.: **Methoden zur Abschätzung des Befallsrisikos durch Spinnmilben und Traubenwickler im ostschweizerischen Rebbau** · Methods for estimating the risk of attack by spider mites and grape berry moths in vineyards of eastern Switzerland

Schweiz. Z. Obst- Weinbau 119, 257—260; 371—374 (1983)

Eidgenöss. FA f. Obst- Wein- Gartenbau, Wädenswil, Schweiz

In the 1st part, the monitoring methods and the thresholds of tolerance are described for the 2 spp. of spider mites in vineyards. For *Panonychus ulmi*, in winter, it is necessary to check the amount of winter eggs on 2 buds of 50 shoots. The threshold of control is 7 eggs/bud. In spring, during the phenological phase of 3 leaves developed, no control is necessary if 0—30 % of the checked leaves are free of mites; if more than 60 % of the leaves are occupied, a control is imperative. During summer, the level of 40 % gives the threshold for a control both of *P. ulmi* and of *Tetranychus urticae*. In the 2nd part, the critical facts for the grape berry moth *Eupoecilia ambiguella* are given. For the 1st generation, checking 100 flower clusters about 1 week before the flowering time, the level of control is given by 30 % attack. In summer, the 2nd generation flight is supervised by 2 pheromone traps beginning in the 1st week of July. If the flight of the male moths is higher than 50 moths/week and trap, a control is necessary by treatment with a recommended insecticide. A catch of 0—15 moths indicated usually no damage. By an account of 16—50 moths, a spray with a *Bacillus thuringiensis* product (+ 1 % sugar) is sufficient.

G. Schruft (Freiburg)

BOURDON, R.: **La pollution atmosphérique et l'agriculture. Méthode d'indemnisation des dommages causés aux végétaux par SO<sub>2</sub>** · Atmospheric pollution and agriculture.

A method of recouping for damages caused to crops by SO<sub>2</sub>

Progr. Agric. Vitic. (Montpellier) 100 (13—14), 352—361 (1983)

The gas-field of Lacq (SW of France) was discovered in 1951, but the use of this gas was delayed because of its high level in H<sub>2</sub>S (15.5 %). The treatment, which began in 1957, leads to release of SO<sub>2</sub> which normally disappears in the air; but sometimes local atmospheric conditions prevent a good dispersion of the pollutant which can damage plant: limb necrosis of intermediate leaves which leads to crop losses by reduction of the active foliar surface. Methods for estimating these losses were built for each type of crop. For the grapevine, the percent loss (kg × degree) equals half the percent of foliar surface destroyed. This rule was checked each year as follows: the foliar surface destroyed by SO<sub>2</sub> being estimated, an equal surface was removed by hand on controlled vines and the yield of both vines was compared. Finally, it is possible to calculate the loss for each plot and to recoup for it. Fortunately, different improvements allowed a great reduction of SO<sub>2</sub> emission, thus no complaints were recorded after 1975.

J. P. Doazan (Pont-de-la-Maye)

BRENDEL, G., STELLWAAG-KITTLER, F., THEILER, R.: **Die patho-physiologischen Kriterien der Stiehlähme** · Patho-physiological criterions of "stiehlähme" (m. engl., franz. Zus.)

Mitt. Klosterneuburg 33, 100—104 (1983)

Inst. Phytomed. Pflanzensch., FA f. Weinbau Gartenbau Getränketechnol. Landespflege, Geisenheim

Authors present a review of the symptoms of the stiehlähme of grapes as well as some ecophysiological theories of its origin, summarizing the suppositions of STELLWAAG-KITTLER, GÄRTEL and THEILER.

H. Düring (Geilweilerhof)

DANKO, L., JUBB, G. L. JR.: **Field evaluation of pheromone-baited traps for monitoring grape berry moth (Lepidoptera: Olethreutidae)** · Bewertung von Feldversuchen mit Pheromonfallen zur Überwachung des Bekreuzten Traubenwicklers (Lepidoptera: Olethreutidae)

J. Econ. Entomol. (College Park, Md.) 76, 480—483 (1983)

Penn. State Univ., North East, Penn., USA

The grape berry moth (GBM), *Endopiza viteana* CLEMENS, is a key pest of *Vitis labrusca* L. cv. Concord in northwestern Pennsylvania. The GBM is routinely monitored in Erie County, Pa., using 2 commercial formulations of synthetic GBM pheromone as attractants (pherococon rubber septum impregnated with 96 % cis-9-dodecenyl acetate, 4 % trans-isomer and a capillary tube dispenser, Albany International impregnated with the same pheromone). 4 pheromone trap designs were the pherocon IC and the ICP, the Delta trap and the Kitterman trap. Traps captured the most GBM when hung from the top trellis ca. 1.2 m above the ground, they were examined weekly. The traps were about equal in their ability to capture GBM. Both pheromone dispensers were effective in attracting GBM, but the Albany International dispenser attracted significantly more of a nontarget moth, *Episimus argutus* (is not a pest of grapes but occurs naturally in surrounding vegetation; it is apparently attracted to the pheromone of GBM). The Delta trap captured fewer *E. argutus* when the entrance was enlarged by leaving the flaps open.

E. Gurevitz (Bet Dagan)

FREGONI, M.: **Genetic and agronomic factors favouring Botrytis disease** · Genetische und weinbauliche Faktoren, die *Botrytis* begünstigen

Vignevini (Bologna) 10 (5), 35—42 (1983)

Catted. Viticolt., Univ. Catt. S. Cuore, Piacenza, Italien

At first the review deals with genetic factors involved in mechanical resistance, in particular: skin thickness, number of epidermis cell layers and degree of cell wall thickening. In addition, some more important factors as bunch compactness, persistence of flower parts and presence of inhibitors of fungal macerating enzymes are examined. Genetic improvement, based on clone selection and on hybridization between American and European grapevines, has shown encouraging results. With reference to agronomic factors, the problem of stocks that, as generally observed for SO4, Kober 5BB, Paulsen 1103, can increase the plant vigour and favour the disease, is considered. Subsequently, climate and microclimate in relation with the choice of places of cultivation, soil type, manuring, irrigation, training system, regular pruning, summer pruning, cultural practices are examined. Conditions increasing grapevine susceptibility are described for each factor. Although some aspects are still disputed and need a more strict scientific demonstration, it is undeniable that generally the trend of modern viticulture, based on a larger productiveness, favours a greater susceptibility of grapevine to grey mould.

M. Bisiach (Mailand)

GYSI, C.: **Einfluß der Stickstoffmenge und -form auf das Auftreten der Stiehlähme an Riesling × Sylvaner** · Influence of quantity and form of nitrogen fertilizers on the occurrence of stalk necrosis on Riesling × Sylvaner (m. engl., franz. Zus.)

Mitt. Klosterneuburg 33, 122—126 (1983)

Eigenöss. FA f. Obst- Wein- Gartenbau, Wädenswil, Schweiz

In 2 of 8 years an increased supply of N resulted in statistically significant higher yields and an increased occurrence of stiehlähme. Compared to ammonium sulfat, sodium nitrate increased the occurrence of stiehlähme by 5 %, again statistically significant in 2 of 8 years. Stiehlähme is more dependant on the climatic conditions than on the form or quantity of the N supply.

H. Düring (Geilweilerhof)

HAUB, G., STELLWAAG-KITTLER, F., HASSAN, S. A.: **Zum Auftreten der Florfliege *Chrysopa carnea* STEPH. als Spinnmilbenräuber in Rebanlagen** · The occurrence of the lacewing *Chrysopa carnea* STEPH. as a predator of spider mites in grape vineyards (m. engl. Zus.)

Wein-Wiss. **38**, 195—201 (1983)

Inst. Phytomed. Pflanzensch., FA f. Weinbau Gartenbau Getränketechnol. Landespflege, Geisenheim

Authors have observed that during September and October in 1981 and 1982 more than 50 % of the winter eggs of the European red spider mite *Panonychus ulmi* on the shoots of grapevine were white, empty and obviously sucked out by a predator. Authors could find that the larval instars of *Chrysopa carnea* are responsible for it. In the laboratory the 2nd larval instar of *Ch. carnea* was able to suck out 74 eggs in 1 h, and 254 eggs during 16 h. The release of *Ch. carnea* larval instars in the spring gave a reduction of the movable spider mites in summer; releases in September yielded nearly a total amount of empty winter eggs. The possibility and importance of *Ch. carnea* for biological control of the European red spider mites in vineyards is discussed. *G. Schruft* (Freiburg)

HOLZ, B.: **Über die Wirksamkeit der Pflanzenpflegemittel „Bio-S“ und „Algifert“ gegen Peronospora, Oidium and Botrytis im Weinbau** · Efficacy of plant nursing materials “Bio-S” and “Algifert” against attack by downy and powdery mildew and grey mould in viticulture (m. engl. Zus.)

Wein-Wiss. **38**, 126—140 (1983)

Inst. Pflanzensch. Weinbau, BBA f. Land- Forstwirtschaft., Bernkastel-Kues

In the Moselle vinegrowing area trials were carried out during the 1980—1982 seasons to test the efficacy of the plant nursing materials “Bio-S” and “Algifert”, which were applied as a tankmix. This should help to answer the question whether “biological” materials are as effective as organic fungicides against fungal diseases on grapevines. As could be shown, the S-containing “Bio-S” was only effective against *Uncinula necator* if the infection pressure was low. Both materials had no effect on *Plasmopara viticola* and *Botrytis cinerea*. The grapevines, especially the cv. Müller-Thurgau, were strongly damaged due to the early leaf fall caused by attack of downy mildew in the “Bio-S” plots. Thus “Bio-S” and “Algifert” are not useful for plant protection and subsequently provide no substitute for organic fungicides. *D. H. Lorenz* (Neustadt)

JÄHNL, G.: **Zusammenhänge zwischen Pusteln und Stiellähme** · Connection between pustules and stielldähme (m. engl., franz. Zus.)

Mitt. Klosterneuburg **33**, 111—115 (1983)

HBLuVA f. Wein- Obstbau, Klosterneuburg, Österreich

In 6 years the number of pustules (i.e. brown, necrotic spots on the grape stalks) was determined using several cvs. A higher number of pustules, especially on Grüner Veltliner, Traminer and Welschriesling vines, was found on rachises showing stielldähme symptoms. The results are interpreted with regard to the role of ions and hormones in the regulation of stomatal action.

*H. Düring* (Geilweilerhof)

KIDO, H., FLAHERTY, D. L., BOSCH, D. F., VALERO, K. A.: **Biological control of grape leafhopper** · Biologische Bekämpfung der Reben-Zikade

Calif. Agricult. **37** (5—6), 4—6 (1983)

Dept. Entomol., Univ. California, Davis, Calif., USA

In northern and central California vineyards the grape leafhopper *Erythroneura elegantula* OSBORN is the most common insect pest of grapes. It causes damage by reducing leaf chlorophyll, defoliating vines and marring the surface of table grapes. In vineyards planted near wild blackberries (*Rubus* sp.) the tiny wasp *Anagrus epos* parasitizes the eggs of grape leafhopper and blackberry leafhopper (*Dikrella californica*). The effectiveness of *Anagrus epos* depends on the distance between wild blackberries and grapes. French prune is another natural hostplant of *Anagrus*, parasitizing the leafhopper *Edwardsiana prunicola*. In 1982, studies were started to determine the importance of *Anagrus* movement from prune orchards to vineyards in Tulare and Fresno counties. Grape leafhopper eggs in areas closer to prune orchards were parasitized earlier than those laid farther

away. A season-long movement of *Anagrus* from prune into adjacent vineyards ties in very well with the integration of chemical and biological control of vineyards. *G. Schruft* (Freiburg)

**LEROUX, P.: Les phénomènes de résistance aux fongicides · The phenomena of resistance to fungicides**

*Phytoma* (Paris) **344**, 34—38 (1983)

Lab. Phytopharm. (INRA), Versailles, Frankreich

This is a general paper reviewing and commenting on the origin and occurrence of fungal pathogens of grapes, potatoes, apples and pears resistant to fungicides. The level of resistance, the biochemical mechanisms of resistance, the resistance allele frequency and strategies for fungicide use are described. Resistance to fungicides is characterized as being due to a single gene mutation or multifactorial functions. Resistant fungal pathogens of the former type can be readily controlled by use of combined sprays. Control of the latter type (which includes *Botrytis cinerea*) requires more complicated strategies involving judicious use of selected sprays. Author's conclusion is that there is no absolute control of *Botrytis* grapes and that applications of folpel, captafol dichlofluanide and Cu<sup>++</sup> can only reduce the level of infection. He suggests that there is a considerable amount of basic research to be done both on the mechanisms of resistance of the fungus to the spray and the grape to the fungus and that absolute control strategies will be somewhat imperfect until these mechanisms are better understood. *R. Subden* (Guelph)

**MORANDO, A., NEBIOLO, P., BOSTICARDO, V., GRASSO, C.: Study on the control of grape sour rot · Essais de lutte contre la "Pourriture acide" de la grappe (ital. m. franz. Zus.)**

*Vignevini* (Bologna) **10** (6), 51—55 (1983)

Ist. Tec. Agrar., Alba, Italien

While referring to other Authors, the problem of grape sour rot, its etiology and factors which favour the disease, are briefly outlined. Since only grapes damaged by grape caterpillars, grey mould or too rapid hydration are affected, a field trial was carried out to determine statistically the individual and combined effects of protection against grey mould and grape caterpillars. A moderate infestation showed how sour rot can be controlled by the complete prevention of insect damage using a synthetic pyrethroid. Similarly dicarboximides, which prevent grey mould, indirectly reduce the incidence of sour rot. On the whole, a combination of programmes for protection against grape caterpillars and grey mould is the most effective. In this way sour rot is reduced by 98 %. The results confirm previous work on this subject. *M. Bisiach* (Mailand)

**RAMSDELL, D. C., BIRD, G. W., GILLET, J. M., ROSE, L. M.: Superimposed shallow and deep soil fumigation to control *Xiphinema americanum* and peach rosette mosaic virus reinfection in a Concord vineyard · Übereinandergelagerte Flach- und Tiefenentseuchung zur Bekämpfung von *Xiphinema americanum* und Neu-Infektionen mit Peach-rosette-Virus in einem Weinberg mit der Sorte Concord**

*Plant Disease* (St. Paul) **67**, 625—627 (1983)

Dept. Bot. Plant Pathol., Michigan State Univ., East Lansing, Mich., USA

To control *Xiphinema americanum* and peach rosette mosaic virus, 4 nematicides in different doses were used. The nematicides were employed by a superimposed shallow plus deep fumigation, 1 of them only in shallow fumigation. In the 6th year of plantation with the cv. Concord only 1 of 40 grapevines of shallow fumigation was reinfected (control-plot: 3 of 40), in the other plots grapevines remained healthy. — Nematode levels were established only in 2 plots (shallow fumigation, 61 cm depth, double fumigation, 244 cm depth). *M. Rüdell* (Neustadt)

**RÜDEL, M.: Beobachtungen über eine Absterbeerscheinung an der Sorte Kerner (Holzrunzeligkeit) in pfälzischen Weinbergen · Observations on dieback of the cultivar Kerner (rugose wood) in vineyards in the Palatinate**

*Dt. Weinbau* **38**, 1174—1177 (1983)

LLFA f. Landwirtsch. Wein- Gartenbau, Neustadt/Weinstr.

A dieback affecting mainly the cv. Kerner has been observed in recent years in vineyards of the Palatinate in the Federal Republic of Germany. The main symptoms are bud failure or poor growth

of the shoots, yellowing of the leaves, dieback of some of the affected shoots, small and badly developed grapes, swelling of the graft union point, pitting or grooving of the wood of the scion, whereas the rootstock remains smaller in diameter and shows little or no pitting. The disease is graft-transmissible and clearly spreads from infected vines to adjacent ones in the vineyard, but the identity of the pathogen and of its vector are not known. So far, the only control measure that can be advised is to replant other cvs than Kerner in diseased vineyards. *R. Bovey (Nyon)*

**RÜDEL, M., ALEBRAND, M., ALTMAYER, B.: Untersuchungen über den Einsatz des ELISA-Tests zum Nachweis verschiedener Rebviren · Investigations on the use of the ELISA-test to detect different grape viruses (m. engl. Zus.)**

Wein-Wiss. 38, 177—185 (1983)

Abt. Phytomed., LLFA f. Landwirtsch. Wein- Gartenbau, Neustadt/Weinstr.

The use of the ELISA method in detecting some grapevine viruses was compared with the latex test. Grapevine fanleaf virus, arabis mosaic virus and raspberry ringspot virus (all nepo viruses) could be detected in grape leaf material, throughout the whole growing season, but in higher concentration during blossom time. The highest concentration of the viruses was found when testing shoot tips and buds. Virus was detected in leaf extracts that were stored for 3—4 months, but the latex extraction buffer proved to be better than the ELISA extraction buffer. In most cases the ELISA method proved to be superior to the latex test, especially in detecting the virus in low concentration in the tissue. — Authors suggest a routine use of ELISA for grapevines sanitary selection purposes. *E. Tanne (Bet Dagan)*

**SAAYMAN, D.: L'arrêt de croissance de Sultana cultivée dans des conditions climatiques provoquant une croissance vigoureuse · Growth stop in Sultana cultivated under climatic conditions favorable to vigorous growth**

Bull. OIV 56, 521—533 (1983)

Oenol. Viticult. Res. Inst., Stellenbosch, RSA

In South Africa along the Orange River Sultana vines exert the so-called "growth arrestment disease" (GAD) which is characterized by a delayed bud burst, stunted sprouts in spring, abortion of inflorescences and resumption of vigorous growth thereafter. In these cases yield losses were 80 % and more. Applications of  $K_2SO_4$  (3 t/ha) to the soil and to the foliage did not reduce the rate of GAD. The C/N ratio in vines showing symptoms of GAD was out-of-balance (as was reported already by KLEWER, 1978). Possibly a relation exists between GAD and the high temperatures and/or the frequency of irrigation in the period of winter dormancy. *H. Düring (Geilweilerhof)*

**SEKERA, D.: Einfluß einiger Fungizide und ihrer Kombinationen auf Größe und Öffnung der Stomata von Rebenblättern · The effect of fungicides and fungicide combinations on grape leaf stomata size and aperture (slowak.)**

Vinohrad (Bratislava) 21, 29—31 (1983)

Výskumná Stan. Vinohradn. Vinár., Modra, ČSSR

The application of the fungicides Dithane M-45, Basfungin, Polyram combi, Kuprikol 50 and the combinations Dithane M-45 and Sulikol K or Bavistin increased significantly leaf stomata length and width and the sizes of the stoma porus compared with control plants in both developmental stages of berry ripening investigated in the cv. "Grüner Veltliner". *I. Tichá (Prague)*

**SCHALLER, K.: Die Rolle von Mineralstoffen, insbesondere Calcium und Magnesium, beim Auftreten der Stiehlähme der Rebe · The role of the mineral nutrients calcium and magnesium on the appearance of "stiehlähme" of grapevines (m. engl., franz., Zus.)**

Mitt. Klosterneuburg 33, 116—121 (1983)

Inst. Bodenk. Pflanzenernähr., FA f. Weinbau Gartenbau Getränketechnol. Landespflege, Geisenheim

Author gives a general review on the content and availability of Ca and Mg in soils, their uptake by plants and their role in morphological processes and physiological reactions, suggesting that stiehlähme might be due to a disorder of the Ca metabolism. *H. Düring (Geilweilerhof)*



SCHIMANSKY, CH.: **Das Aufnahmeverhalten von Magnesium ( $^{28}\text{Mg}$ ), Calcium ( $^{45}\text{Ca}$ ) und Kalium ( $^{86}\text{Rb}$ ) und deren mögliche Rolle beim Auftreten der Stielähme der Weinrebe** · Different kinds of absorption of magnesium ( $^{28}\text{Mg}$ ), calcium ( $^{45}\text{Ca}$ ) and potassium ( $^{86}\text{Rb}$ ) and their possible effects on the occurrence of stielähme with vines (m. engl., franz. Zus.)

Mitt. Klosterneuburg 33, 127—132 (1983)

Inst. Radioagron., Kernforschungsanlage, Jülich

In order to study the uptake, transport and storage of Mg, especially in clusters,  $^{28}\text{Mg}$  was applied to isolated, cluster-bearing stem segments or to clusters by dipping or spraying. The presence of Ca and K in the solution inhibited the transport of  $^{28}\text{Mg}$  into the clusters. This can be counteracted, e.g. by a higher Mg concentration or by more frequent spraying. There are varietal differences in Mg uptake and the capacity for Mg uptake seems to be correlated to the susceptibility to stielähme.

H. Düring (Geilweilerhof)

SCHRUFF, G.: **Über die Beziehung Wurmbefall und Botrytis** · The relation between the attack of the larval stages of the European grape berry moth (*Eupoecilia ambiguella*) and the *Botrytis cinerea* bunch rot (m. engl., franz. Zus.)

Wein-Wiss. 38, 269—272 (1983)

Staatl. Weinbauinst., Freiburg/Br.

During work on the insecticidal control of the vine moth *Eupoecilia ambiguella* in the cv. Müller-Thurgau at Freiburg, data were obtained that strongly confirmed the previously empirical relationship between the damage caused by the 2nd generation of larvae of *E. ambiguella* and the incidence of grey mould caused by *Botrytis cinerea*. The connection between damage by the 1st generation of *E. ambiguella* in mid-June and grey mould at the end of September was not strong, the correlation coefficient  $r$  being 0.77, whereas for the 2nd generation (late August) and grey mould  $r$  was 0.98. The importance of good insect control is discussed in the contexts of integrated pest management and the problem of tolerance of *B. cinerea* to the dicarboximide fungicides.

W. R. Jarvis (Harrow)

STEVENSON, J. H., MONETTE, P. L.: **Delay of onset of leafroll symptom expression in *Vitis vinifera* 'Liemberger' from ribavirin-treated *in vitro* cultures** · Verzögerung der Symptomausprägung der Blattrollkrankheit bei der Rebsorte Limberger (*Vitis vinifera*) in mit Ribavirin behandelten *in-vitro*-Kulturen (m. franz. Zus.)

Can. J. Plant Sci. (Ottawa) 63, 557—560 (1983)

Agricult. Canada, Saanichton Res. Plant Quarantine Sta., Sidney, B.C., Kanada

The use of ribavirin (abroad spectrum antiviral compound) at a concentration of 10 mg/l in *in vitro* cultures of grapevines (var. Limberger) resulted in a delay of about 40 d in the appearance of leafroll symptoms on the grape plants. The effect of ribavirin seemed to be transient. This might be attributed to a virostatic effect or to a physiological effect on the expression of symptoms of this disease. No dose response could be shown in this work. Concurrently tests with (S)-DHPA (which is known to have antiviral activity) were carried out, but no delay on the onset of leafroll symptoms could be noticed. A combination of ribavirin treatment and shoot tip culture, to achieve leafroll-free grapevine material, was suggested.

E. Tanne (Bet Dagan)

THEILER, R.: **Stielähme-Befallsprognose an Trauben. Ergebnisse von 1978 bis 1982 und Prognose für 1983** · Stielähme-forecast of clusters. Results from 1978 to 1982 and forecast for 1983

Schweiz. Z. Obst- Weinbau 119, 522—532 (1983)

Eidgenöss. FA f. Obst- Wein- Gartenbau, Wädenswil, Schweiz

At Riesling × Silvaner and Gutedel vines correlations between several climatic data recorded during the development of grapevines and the rate of stielähme were established indicating that the daily temperatures at noon in the period of flowering (Riesling × Silvaner) or in stage I of the berry development (Gutedel) were closely correlated to the rate of stielähme. Low temperatures in these periods were correlated to high rates of stielähme and vice versa. For 1983, a medium to low rate of stielähme has been forecasted.

H. Düring (Geilweilerhof)

WILDMAN, W. E., NAGAOKA, R. T., LIDER, L. A.: **Monitoring spread of grape phylloxera by color infrared aerial photography and ground investigation** · Die Überwachung der Reblaus-Ausbreitung mit Hilfe von Falschfarben-Luftaufnahmen und von Untersuchungen am Boden

Amer. J. Enol. Viticult. **34**, 83—94 (1983)

Dept. Viticult. Enol., Univ. California, Davis, Calif., USA

In einer ausgedehnten 5jährigen Rebanlage (wurzelechter Cabernet Sauvignon) am Ostufer des Napa River wurden 1977 erstmals 2 kleine Reblausherde entdeckt. Luftaufnahmen in den Jahren 1978—81 zeigten die Vergrößerung dieser ursprünglichen Herde und das Auftreten neuer, isolierter Tochterherde. Durch die Reblaus geschädigte Rebstöcke sind infolge ihrer verringerten Blattmasse und des sichtbar werdenden Bodens als heller gefärbte Flecken zu erkennen. Die Unterscheidung von Hallimasch-befallenen oder an Pierce's disease erkrankten Reben ist aufgrund der andersartigen Ausbreitungsmuster möglich. Laubverfärbungen, die durch eine abweichende Bodenbeschaffenheit bedingt sind, können daran erkannt werden, daß die betreffenden Flächen von Jahr zu Jahr konstant bleiben. Alle nach den Falschfarbenaufnahmen als Reblausherde interpretierten Stellen zeigten bei Wurzelkontrollen auch Reblausbefall. Mit Hilfe Computer-erstellter Graphiken kann die Ausweitung des Reblausbefalls im Laufe der Beobachtungsjahre anschaulich verfolgt werden. — Die mittlere jährliche Zunahme der von der Reblaus befallenen Reben betrug 225 %. Unter dieser Voraussetzung wurde für eine befallene Parzelle errechnet, daß alle Reben im 8. Jahr nach der Entdeckung des Befalls tot oder unproduktiv sind. Wegen der geometrischen Zunahme der Verseuchung kann eine Fläche zwischen dem 5. und 7. Befallsjahr durchaus noch wirtschaftliche Erträge liefern. Durch die regelmäßige Luftüberwachung befallener Flächen ist es möglich, den optimalen Zeitpunkt für die Neubepflanzung einer verseuchten wurzelechten Anlage mit reblausfesten Pfropfreben rechtzeitig festzulegen.

G. Rilling (Geilweilerhof)

## J. TECHNIK

BACK, W.: **Behältermaterial und Behälterform: Auswirkungen auf Arbeitszeit und Kosten in der Kellerwirtschaft** · Container materials and forms: Effect on labour time and costs in enology

Weinwirtsch., Tech. (Neustadt/Weinstr.) **119**, 181—184 (1983)

LLFA f. Landwirtsch. Wein- Gartenbau, Neustadt/Weinstr.

In Betrieben mit Flaschenweinvermarktung beträgt der Arbeitszeitaufwand für den Faßweinausbau (von der Mostvorklärung bis zum füllfertigen Wein) nur bis zu 15 % des gesamten kellerwirtschaftlichen Arbeitszeitaufwandes. Durch Wahl geeigneter Behälter lassen sich aber auch hier Zeit- und Kostenaufwand vermindern. So erspart die Verdoppelung der Behältergröße beim Schönen 30—40 %, bei der Mosteinlagerung 15 %, beim 1. Abstich 10—20 % und beim Vorklären 6,5—12 % Arbeitszeit. Raumsparende Behälter halten die Gebäudekosten niedriger. Fässer aus Holz (bis 2 000 l) sind billiger als aus anderen Materialien; allerdings entspricht hier der Lager schwund einem Geldbetrag zwischen 20 und 60 DM/1000 l. — Die tatsächlichen Einsparungen können von vielen Einzelfaktoren, die beachtet werden müssen, beeinflußt werden. Die aus der Marktsituation resultierende Sorten- und Qualitätsvielfalt mit kleinen Weilmengen verhindert gerade in Familienbetrieben eine kostengünstige Auswahl der Weinbehälter. F. Schnekenburger (Freiburg)

KHUSNULLIN, KH. KH., GANIN, A. P.: **Die Anwendung physiologisch aktiver Substanzen zur Erleichterung der mechanischen Lese** · Application of physiologically active substances in order to facilitate the mechanical harvest (russ.)

Vinodel. i Vinogradar. SSSR (Moskau) (4), 37—40 (1983)

Zwecks Verminderung des Trennwiderstandes der Beeren bei der mechanischen Lese wurden Reben mit Gidral und Kamposan besprüht. Gidral wirkte zwar besser, ist aber erheblich teurer, so daß die Anwendung von Kamposan (0,3—0,7 %, 1500 l/ha) empfohlen wird. Beide Präparate sind bei hohem Säuregrad der Beeren (pH-Zahl < 3,5) unwirksam.

J. Blaha (Brno)

KÖHLER, H.: **Versuche zum möglichen Einfluß einer reduzierten Brühmenge im weinbaulichen Pflanzenschutz auf den Weinausbau** · Studies on a possible influence of reduced spray amount in grapevine protection on wine making

Rebe u. Wein **36**, 334—336 (1983)

Bayer, LA f. Weinbau Gartenbau, Würzburg-Veitshöchheim

Influence on wine technology and on analytical data could not be observed between wines made from grapes of normal and reduced application of spray amount. *O. Endres (Speyer)*

NERADT, F.: **Neuere Erkenntnisse auf dem Gebiet der Schichtenfiltration** · Latest scientific findings in the field of sterilizing filtration

Weinwirtsch. (Neustadt/Weinstr.) **119**, 410—416 (1983)

The filtration technique with layers of asbestos in the wine industry is discussed in general. Some technological changes and improvements of the last years are recommended. The use and advantage of membrane filters for the last filtration step for wines are not a limiting factor as long as the wines do not contain too much colloides (polysaccharides and yeast content). Very often there is a relation between the colloides in the wine and *Botrytis* of the grapes, as shown in the 1982 vintage year. *H. Eschnauer (Ingelheim)*

PFAFF, F.: **Traubenvollerntereinsatz — Praxiserfahrungen** · Grape harvester and experiences in practice

Dt. Weinbau **38**, 1164—1169 (1983)

LLVA f. Landwirtsch. Wein- Gartenbau, Oppenheim

Verf. beschreibt die Entwicklung der Traubenvollernter-Anwendung in Rheinhessen und die damit verbundenen Probleme. Schleppergezogene und selbstfahrende Erntemaschinen werden in ihren positiven und negativen Gebrauchseigenschaften gegenübergestellt. Der Beitrag schließt mit einer Aufzählung von Mindestanforderungen an einzelne Bauelemente der Traubenvollernter.

*W. Rühling (Geisenheim)*

SACHS, S. B., GAILLARD, M., CASSIGNARD, R.: **Application de la filtration tangentielle au traitement des vins** · Membrane filtration of wine

Vignes et Vins (Paris) **320**, 23—30 (1983)

A pilot plant experiment of membrane filtration is described. 8 modules with totally 1008 tubular membranes (12.5 mm Ø, 2230 mm length) provide 88 m<sup>2</sup> of filtration surface. The membranes have pores of 0.1 µm. Tamping is avoided by a turbulent flow. With a feed of 14 hl/h and a working pressure of 7 bars the filtrate yield is > 95 %, using a 2-step operation. Technological and analytical data are presented. *P. Dürr (Wädenswil)*

## K. BETRIEBSWIRTSCHAFT

Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V. (KTBL), Darmstadt (Hrsg.): **Datensammlung für Weinbau und Kellerwirtschaft. 5. Aufl.** · Data compilation for viticulture and enology. 5th edition

KTBL-Schriften-Vertrieb im Landwirtschaftsverlag GmbH, Münster-Hiltrup, 62/5. (1983)

With the 5th edition, a data compilation has been published by the "Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V." (KTBL) and supported by the "Bundesminister für Ernährung, Landwirtschaft und Forsten", which represents a valuable, moreover an essential help mainly to managers, advisers, teachers and students. All production processes are included: From the production of plant material and the preparation of newly established vineyards to wine dispatch and taking back bottles. This applies nearly to everything: Fertilizer demand, percentages of yield of the various cvs, expenditure of time or cost, working times for viticultural labour or the

space required for winery equipment. The data are based on values of norms and experiences, which have been revised by experts. — Editors indicate the limits of generalization: "In individual farms, deviations from these values are possible. Therefore, it is necessary to consider the specific conditions of a farm with regard to its actual situation".  
*H. Berndt (Geilweilerhof)*

**PAPP, L.: Economical evaluation of the variety assortment of wine districts · Ökonomische Bewertung der Sortenstruktur von Weinbaugebieten (ungar. m. dt., engl., russ. Zus.)**

*Szőlőtermesztés Borászati (Kecskemét)* 5 (1), 3—8; (2), 14—19 (1983)

Economical examinations were carried out in 13 wine districts of Hungary, covering 39 cvs of 38 large-scale plantations during 5 years. The yield indexes were comparatively analysed and the most recommendable cvs were determined for each wine district.  
*A. Hegedüs (Budapest)*

**RIEDER, W.: Leistung und Kosten des weinbaulichen Pflanzenschutzes mit verringertem Brüheaufwand · Performance and costs of plant protection in viticulture using diminished spray amount**

*Rebe u. Wein* 36, 348—349 (1983)

Bayer. LA f. Weinbau Gartenbau, Würzburg-Veitshöchheim

Moderne Düsenkonstruktionen wie auch spezielle Mittelformulierungen ermöglichen eine Verringerung des Spritzbrüheaufwands bis zu 80 l/ha. Dabei können herkömmliche Geräte einfach umgerüstet und bei guter Applikation sogar bis zu 25 % Pflanzenschutzmittel eingespart werden. — Am Beispiel eines 3-ha-Betriebes wird gezeigt, daß mit diesem Verfahren eine erhöhte Schlagkraft erreicht wird und erhebliche Transport- und Arbeitskosten eingespart sowie organisatorische Erleichterungen geschaffen werden. Voraussetzung für den Erfolg ist aber ein fundiertes Wissen im weinbaulichen Pflanzenschutz.  
*Th. Becker (Deidesheim)*

**STUMM, G.: Trägt die Monorack-Einschienen-Bahn zur Verbesserung der Wirtschaftlichkeit des Steilstlagenweinbaus bei? · Does the Monorack monorail contribute to improving the economy of viticulture on very steep slopes?**

*Dt. Weinbau* 38, 1343—1348 (1983)

LLVA f. Wein- Gartenbau Landwirtsch., Bad Neuenahr-Ahrweiler

Verf. untersuchte die Kosten von 4 ausgewählten Einschienenbahnanlagen, deren Anschaffungspreise zwischen 40 000 und 79 000 DM/ha streuen. Die variablen Kosten betragen 505—651 DM. Ab der Mindesteinsatzgröße von 1—2 ha muß mit 5500—6500 DM/ha jährlichen Kosten gerechnet werden. Eine Berechnung ergab, daß der Arbeitsaufwand in Rebanlagen mit schwieriger Bewirtschaftung um 400 AKh/ha (von 1900 auf 1504 AKh/ha, d. h. um 21 %) gesenkt werden konnte. Fast die Hälfte der Arbeitsstunden bei Lese, Mauerbau und Düngung wurden eingespart. Als Folge der besseren Transportmöglichkeiten ergaben sich Ertragssteigerungen von 5—15 % nach der Installation einer Einschienenbahn. Lohnarbeitsbetriebe mit Stundenlöhnen von 15 DM erzielten schon durch die Arbeitseinsparung Kostendeckung. In Familienbetrieben ist die Wirtschaftlichkeit nur gewährleistet, wenn freigesetzte AKh produktiv eingesetzt werden können.

*F. Schnekenburger (Freiburg)*

## L. ÖNOLOGIE

**BACH, H. P., HESS, K.-H.: Der Thiamin-Zusatz zum Most: Eine Möglichkeit zur SO<sub>2</sub>-Einsparung · The addition of thiamine to grape must: a possibility to save SO<sub>2</sub>**

*Weinwirtsch., Tech. (Neustadt/Weinstr.)* 119, 186—188 (1983)

LLVA f. Wein- Gartenbau Landwirtsch., Trier

It has been found that the addition of thiamine to musts from lower quality grapes reduces the formation of ethanal and pyruvic acid during fermentation. Therefore less SO<sub>2</sub> is required. Fermentation is not accelerated and no sensory changes could be detected. Experimental data from 3 vineyards are presented.  
*P. Dürr (Wädenswil)*

BASTIOLI, C., GIANOTTI, G., MATTERA, A., PARRINI, P.: **Membrane processes in the oenological field** · Membranprozesse in der Önologie (ital. m. engl. Zus.)

Vignevisini (Bologna) **10** (6), 43—49 (1983)

Ist. Guido Donegani S.p.A., Cent. Rec. Novara, Italien

The analytical results, obtained in must stabilization and vinification of the red type Bonarda musts by membrane processes, are measured and discussed. It is possible to achieve stabilized musts and wines without using chemical additives. The technology of membrane processes could already be used for special filtration problems and could become commercially interesting as soon as the membranes are cheap enough.  
*H. Eschnauer* (Ingelheim)

BORSZÉKI, J., KOLTAY, L., INCZÉDY, J., GEGUS, E.: **Untersuchungen der Mineralstoffzusammensetzung von Weinen aus Transdanubien und ihre Klassifikation nach Weinlegenden** · On the chemical composition of wines from particular wine regions and classification to specific regions based on results of the analysis (m. engl. Zus.)

Z. Lebensm.-Untersuch. u. -Forsch. **177**, 15—18 (1983)

The trace element contents of Riesling wines from 3 different wine areas of Hungary were determined with the emission spectrographic method. From 15 trace elements the concentrations of 13 elements were exactly measured and the results could be used for the pattern recognition method. It was possible to classify the different wines according to the areas they were coming from.

*H. Eschnauer* (Ingelheim)

CABRAS, P., MELONI, M., PIRISI, F. M.: **The effect of clarifying substances on the content of some insecticides and fungicides in white wine** · Die Wirkung von Klärmitteln auf den Gehalt an einigen Insektiziden und Fungiziden in Weißwein

Amer. J. Enol. Viticult. **34**, 103—107 (1983)

Ist. Chim. Farm. Tossicol., Univ. Cagliari, Italien

The effect of clarifying substances used in white wine making (bentonite: 100 g/hl, charcoal: 20 g/hl, and K caseinate: 100 g/hl) on the decrease in concentration of 3 insecticides (Carbaryl, Dimethoate, and Tetrachlorvinphos) and 3 fungicides (Dichlofluanid, Folpet, and Vinclozolin) in must and wine of Sardinian white grapes was studied. Charcoal induced a considerable reduction (80—93 %) in concentration of all the active principles except Dimethoate (40 %). Little or no effects were induced by bentonite and K caseinate.  
*W. Postel* (Weihenstephan)

CRIDDLE, W. J., GOSWELL, R. W., WILLIAMS, M. A.: **The chemistry of sherry maturation. II. An investigation of the volatile components present in "standard" sherry base wine** · Die Chemie der Sherry-Reifung. II. Eine Untersuchung der im Grundwein von „Standard“-Sherry vorhandenen flüchtigen Aromastoffe

Amer. J. Enol. Viticult. **34**, 61—71 (1983)

Dept. Appl. Chem., Univ. Wales Inst. Sci. Technol., Cardiff, UK

Extraction and characterization of the volatile components of sherries is reported. Solvent extraction with 2-methylbutane was followed aqueous extraction with increasing concentrations of base, i.e. pH 8.3, 11.6 and 12.9 of the 2-methylbutane. This resulted in the production of a neutral fraction and 3 different acid fractions. Through use of gas chromatography 107 peaks were separated of which 57 were identified. The odor characteristics of each of the 107 peaks are also described. GLC mass spectroscopy was used in identifying the components. Monoethyl succinate was shown for the first time in Oloroso sherries. Both 4-methylpentanol and 3-methylpentanol were described for the first time.  
*C. W. Nagel* (Pullman)

DUNBAR, J., WILSON, A. T.: **Oxygen and hydrogen isotopes in fruit and vegetable juices** · Sauerstoff- und Wasserstoffisotope in Früchten und Pflanzensäften

Plant Physiol. (Washington) **72**, 725—727 (1983)

Dept. Chem., Univ. Waikato, Hamilton, Neuseeland

It is known that the water in leaves of plants can become enriched in oxygen and hydrogen isotopes, due to the evaporation process. In a number of fruits and vegetables  $^{18}\text{O}/^{16}\text{O}$  ratio was studied

and found to be isotopically more enriched than in the water, in which they grew. Slower growing fruits, for example pears, plums or apples showed more enrichment than fast growing vegetables with higher water contents. Generally, the enrichment of  $^{18}\text{O}$  compared to the SMOW-value (Standard Mean Ocean Water) was found to occur in the following order: leaves > fruit > main stem > ground water. On a series of grape juice samples D/H and  $^{18}\text{O}/^{16}\text{O}$  measurements were made, indicating that the physical process causing this enrichment, was probably evapotranspiration.

*H. Steffan* (Geilweilerhof)

**ETIEVANT, P. X., ISSANCHOU, S. N., BAYONOVE, C. L.: The flavour of Muscat wine: The sensory contribution of some volatile compounds** · Das Aroma von Muskatwein: Der sensorische Beitrag einiger flüchtiger Verbindungen

*J. Sci. Food Agricult.* (London) **34**, 497—504 (1983)

Lab. Rech. Arom., Dijon, Frankreich

9 volatile constituents (ethyl cinnamate and  $\beta$ -ionone seem to be the most interesting compounds) of a Muscat de Frontignan wine were selected as potentially important to the aroma of this wine by sniffing the chromatography effluent following gaschromatographic separation of an aroma extract. Their concentrations were determined by mass fragmentometry and their olfactory thresholds estimated in a white base wine by calculating odour impact values.

*A. Rapp* (Geilweilerhof)

**FETTER, K.: Hygienemaßnahmen bei der Bereitung restsüßer Weine** · Disinfection and production of sweet wines

*Dt. Weinbau* **38**, 1210—1214 (1983)

LLVA f. Wein- Gartenbau u. Landwirtschaft., Bad Kreuznach

Great care must be taken in production of sweet wines because of possible microbiological infections. The applications of heat,  $\text{SO}_2$ ,  $\text{Cl}_2$  and  $\text{NH}_4^+$ -salts are discussed. Machines should be constructed for easy cleaning.

*O. Endres* (Speyer)

**GARCÍA BARROSO, C., CELA TORRILLOS, R., PÉREZ-BUSTAMANTE, J. A.: HPLC separation of benzoic and hydroxycinnamic acids in wines** · Trennung von Benzoe- und Hydroxycinnamsäuren in Wein mittels HPLC

*Chromatographia* **17**, 249—252 (1983)

Analyt. Chem. Dept., Fac. Sci., Univ. Cádiz, Spanien

A 2-step curvilinear gradient elution procedure for the HPLC separation of 22 different benzoic and cinnamic acid derivatives is reported. The procedure was applied to the analysis of these components in sheries after concentration and extraction. 17 of the 22 compounds studied were identified in "Fino" sherry. The effect of browning on the generation of these compounds was also investigated. Thin layer chromatography on cellulose or silica gel plates with use of several solvents was applied to confirm the identification of particular compounds. UV spectra of collected fractions were also used for identification. No mention is made of the fate of the tartrate esters of the cinnamates which should be present in the original wines.

*C. W. Nagel* (Pullman)

**KAMPIS, A., ÁSVÁNY, A.: Änderungen des Gehaltes an Anthocyanin und der Intensität der Farbe während der Lagerung von mit Wärmebehandlung hergestellten Rotweinen** · Changes in the anthocyanin content and in colour intensity during the storage of heat-treated red wines (ungar.)

*Borgazdaság* (Budapest) **31**, 72—75 (1983)

Központi Élelmiszeripari Kut. Int., Budapest, Ungarn

Verf. untersuchten während 4 Jahren die Veränderungen des Anthocyaningehaltes und der Farbinintensität von Rotweinen der Sorten Blaufränkisch und Cabernet franc, die nach Maischeerwärmung hergestellt worden waren. Die Gärungs- und Ausbaubedingungen sollten näher bewertet werden können. Nur bei einer Temperatur von 50 °C spielt die Behandlungsdauer eine ausschlaggebende Rolle. Nach Maischeerwärmung auf 60 oder 70 °C wurden der Gehalt der Weine an Farbstoffen und ihre Farbinintensität nicht mehr wesentlich durch längere Behandlungsdauer beeinflusst. Im allgemeinen sind Temperaturen von 60 bzw. 70 °C bei der Maischebehandlung vorzuziehen, da mehr Farbstoff extrahiert und die erwünschte Farbinintensität bereits nach 30—60 min Behandlungsdauer, bei 50 °C erst nach 120 min erzielt wird.

*E. Minárik* (Bratislava)

**LEMPERLE, E.: Rotweibereitang und Probleme der Farberhaltung · Vinification of red wines and problems of color stabilisation**

Bad. Winzer (7), 384—392 (1983)

Staatl. Weinbauinst., Freiburg/Br.

Color intensity of red wines depends on cv, stage of maturity and health of berries, pH-value and on conditions during vinification and fermentation. The enzymes tyrosinase and laccase cause the oxidation of anthocyanins. By treatment with bentonite and SO<sub>2</sub> enzyme activities are reduced. There are 2 vinification processes giving different results: 1) Heat treatment (70—75 °C) prevents the enzymatical oxidation and produces wines lower in color and tannins. 2) Fermentation on skins gives more typical and full-bodied red wines. The main factors effecting an optimal wine quality are: sound grapes and a short-time intensive fermentation under best temperature conditions.

*H. Steffan (Geilweilerhof)*

**MACCIERI, A., GALASSI, S.: Influence of controlled fermentation on the characteristics of Lambrusco Reggiano wine · Einfluß der kontrollierten Gärung auf die Eigenschaften von Lambrusco-Reggiano-Wein (ital., engl.)**

Vini d'Italia 24, 205—212 (1982)

In comparison with traditional technology, Lambrusco Reggiano red wine was produced in a new manner. This involved a short maceration of the grape pomace followed by controlled, low temperature fermentation of the clarified juice with the aid of a pure yeast strain. Accordingly, wines were produced with higher levels of ethanol and fermentation bouquet compounds and were also judged higher in quality by an expert panel. These wines were also lower in cation, phenol and SO<sub>2</sub> contents and had higher and more balanced organic acid contents. Lower pH values are probably responsible for more ionized anthocyanins which in turn caused the observed higher intensities of red colour. On the whole a consumer study confirmed the trend that consumers now prefer younger, fresher and more fruity wines to those produced traditionally.

*P. de Wet (Stellenbosch)*

**MALÍK, F., RUDICKÁ, L., DRDÁK, M.: Gehalt und Eigenschaften des 5-Hydroxymethylfurfurals in Produkten der Weinerzeugung · Content and properties of 5-hydroxymethylfurfural in products of wine-making industry (m. engl. Zus.)**

Wein-Wiss. 38, 51—57 (1983)

Kated. Tech. Mikrobiol. Biochem., Chemickotechnol. Fak., Bratislava (CSSR)

The content of 5-hydroxymethylfurfural (5-HMF) in a number of wines, and wine-derived products was determined as was the effect of the compound on the fermentation process. A spectrophotometric technique showed 5-HMF concentration up to 8.7 mg l<sup>-1</sup> in the products studied. The highest concentrations were in dessert wines subjected to long-term storage. The concentrations on no occasions reached values which could be considered dangerous to human health. 5-HMF showed an inhibitory action on yeast fermentations at concentrations as low as 0.02 % by weight. It is possible that the inhibitory effect of 5-HMF could be used to lower the concentration of preservatives used in some wine products.

*D. J. Spedding (Auckland)*

**PONTALLIER, P., RIBÉREAU-GAYON, P.: Influence de l'aération et du sulfitage sur l'évolution de la matière colorante des vins rouges au cours de la phase d'élevage · Influence of aeration and of sulphiting on the evolution of red wine colour composition during the bulk conservation phase**

Connaiss. Vigne Vin (Talence) 17, 105—120 (1983)

Inst. Oenol., Univ. Bordeaux II, Talence, Frankreich

The role of dissolved O<sub>2</sub> in the evolution of wine colour composition was investigated by analytical measures on wines stored both in barrels and in large tanks, and by controlled aeration of small volumes of wines and model solutions. Progressive changes, involving interactions of anthocyanins with other phenolics, depend upon the formation of traces of acetaldehyde by oxidation of ethanol. Colour is increased and stabilized by such reactions in spite of a decrease in anthocyanin level. Frequent racking is recommended for wines in bulk storage to ensure adequate oxygenation. These essential condensation reactions are slower in the presence of high free SO<sub>2</sub> levels.

*T. C. Somers (Adelaide)*

POSTEL, W.: **La solubilité et la cinétique de cristallisation du tartrate de calcium dans le vin** · Solubility and kinetics of crystallization of calcium tartrate in wine  
Bull. OIV 56, 554—568 (1983)

Lehrstuhl Allgem. Lebensmitteltechnol., TU München, Freising-Weihenstephan

Author has demonstrated that the solubility of Ca tartrate in wine is dependent on alcohol concentration, temperature, pH and content in organic and inorganic acids. The kinetics of crystallization of Ca tartrate are affected by compounds of high molecular weight; proteins and tannins inhibited the nucleation of the crystals. Treatments to reduce the level of proteins and tannins in wine accelerated the formation of nuclei but did not result in an increase of the amount of Ca tartrate deposit. Metatartaric acid inhibited the crystallization of Ca tartrate to some extent. Author has developed some solubility curves to predict the instability of wines towards Ca tartrate. *C. Buteau* (Guelph)

RIBÉREAU-GAYON, P.: **Alterations of wine quality caused by Botrytis damages** · Wirkung von *Botrytis*-Schäden auf die Weinqualität (ital.)  
Vignevisini (Bologna) 10 (5), 48—52 (1983)

Inst. Oenol., Univ. Bordeaux II, Talence, Frankreich

*Botrytis cinerea* causes radical changes on grape berries, either by development of noble rot or bunch rot. The last one leads to losses in harvest, to difficulties at clarification, to formation of disagreeable odor, and to oxidative damages. Red wines are especially affected by the deviation of smell (development of a mouldy tone), and moreover, by the oxidative changes, combined with the appearance of oxidative casse. A well done sanitary protection of vineyards does not only influence favorably the quality, but it also allows to postpone the harvest to the date of optimal maturity. Possibly, the percentage of laccase in the berry juice gives some information upon the sanitary conditions of the grapes. Research in this direction is carried out and will be continued.

*R. Woller* (Trier)

RIBÉREAU-GAYON, P.: **Alterations of wine quality caused by Botrytis damages** · **Wirkungen in young red wines during their conservation** · Interpretationen von Farbveränderungen in jungen Rotweinen während der Konservierung  
J. Sci. Food Agricult. (London) 34, 505—516 (1983)

Inst. Oenol., Univ. Bordeaux II, Talence, Frankreich

Autoxidation of ethanol, producing traces of acetaldehyde in the presence of phenolic compounds, is regarded as an essential feature of red wine ageing, provoking copolymerisation of anthocyanins and tannins during the 1st phase of wine conservation i. e. during the 12—24 months between vinification and bottling. Interpretations were based on laboratory experiments and on experiments with wines stored in oak barrels and large cement vats. Frequent rackings with aeration are necessary when wines are stored in tanks to approximate the mild oxidative influences associated with storage in oak barrels. Free SO<sub>2</sub> should be low enough (15 mg/l) to allow normal progression of these reactions.

*T. C. Somers* (Adelaide)

SIEGRIST, J., LÉGLISE, M., LELIOUX, J.: **Caractères analytiques secondaires de quelques vins atteints de la maladie de l'amertume** · Secondary analytical characteristics of some amertumized wines

Rev. Franç. Oenol. (Paris) 23 (89), 47—48 (1983)

Lab. Centre Hosp. (INRA), Beaune, Frankreich

Amertumized Beaujolais wines show above all very low glycerol contents (0.8—1.4 g/l; healthy wines: 7.0—8.5 g/l). Besides high amounts of CO<sub>2</sub> (1.3—1.4 g/l instead of < 0.6 g/l) and of volatile acidity (21.5—25.5 meq/l; normal wines show < 12 meq/l) the bacterial population is conspicuous. Finally the unpleasant bitter taste is strengthened by an acetic feature.

*R. Woller* (Trier)

TANNER, H., ZANIER, C.: **Über die Bestimmung der Chloranisole in Wein und in Korkstopfen** · The determination of chloroanisoles in wines and in corks  
Schweiz. Z. Obst- Weinbau 119, 468—473 (1983)

Eidgenöss. FA f. Obst- Wein- Gartenbau, Wädenswil, Schweiz

The contents of 2,4,6-trichloroanisole (TCA), and tetra- and penta-chloroanisoles were determined



in 40 wines (39 grape and 1 raspberry) and in their corresponding corks. 30 of the wines were described as corky and musty. The results showed clearly that the corky aroma in 80—90 % of the corky wines was due to TCA in the corks and wines and bore a direct relationship to the extent of chlorination of the corks.  
C. F. Timberlake (Long Ashton)

URSO, G. d', NICOLSI ASMUNDO, C.: **Composition of by-products of oenological industry utilizable for animal nutrition** · Die Zusammensetzung von Nebenprodukten der Weinindustrie und ihre Verwendung für die Viehernahrung (ital. m. engl. Zus.)

Vignevisini (Bologna) **10** (3), 41—44 (1983)

Ist. Ind. Agrar., Univ. Catania, Italien

The by-products of the oenological industry are discussed with regard to their utilization as nutrients for livestock. The contents of the different minerals as well as amino-acids are determined. From these results some by-products should be worthwhile for such a utilization.

H. Eschnauer (Ingelheim)

WEGER, B.: **Bemerkungen zur Entsäuerung mit Kaliumhydrogencarbonat** · Remarks on the deacidifying with  $\text{KHCO}_3$  (m. engl. Zus.)

Wein-Wiss. **38**, 277—283 (1983)

Wines from South Tyrol were deacidified using  $\text{KHCO}_3$ . This process usually occurs in 2 stages, neutralization of the acid by the bicarbonate and further acid reduction with the precipitation of potassium bitartrate. In these studies, the precipitation of potassium bitartrate, after 6 months at 4 °C, was not in accordance with the treatment. The formation of potassium tartrate was postulated.

L. Mattick (Geneva)

## M. MIKROBIOLOGIE

DELFINI, C., CIOLFI, G., PAGLIARA, A.: **Biological degradation tests of malic acid by maloalcoholic fermentation. 2nd contribution: Some experimental tests of oenological fitness of *Schizosaccharomyces pombe* strains** · Versuche zum biologischen Abbau von Äpfelsäure durch Äpfelsäure-Alkoholgärung. 2. Mitteilung: Versuche zur önologischen Eignung von *Schizosaccharomyces-pombe*-Stämmen (ital., engl.)

Vini d'Italia **24**, 261—264 (1982)

Ist. Sper. Enol., Asti, Italien

The investigations show that 3 new strains of *Schizosaccharomyces pombe* from the collection at the Istituto Sperimentale per l'Enologia, Asti, gave very unsatisfactory results about their fitness for wine making. The results of this study duplicated those of a previous study on other strains of the same organism. *Sch. pombe* does not ferment the must with the same organoleptic characteristic and quality as *Saccharomyces cerevisiae*. *Sch. pombe* produces aromatic and odiferous compounds which render the wine organoleptically unpalatable. These compounds appear to be a characteristic of this organism in general.

L. Mattick (Geneva)

GRACHEVA, I. M.: **Biochemistry of yeast formation of higher alcohols during fermentation** · Biochemie der Bildung höherer Alkohole durch Hefen während der Gärung (russ. m. engl. Zus.)

Prikl. Biokhim. Mikrobiol. (Moskau) **19**, 33—48 (1983)

Tekhnol. Inst. Pishch. Prom., Moskau, UdSSR

Different pathways of the formation of higher alcohols by different yeast spp. are described. Author proposed a scheme of the formation of higher alcohols in the light of the literature data and her own experimental findings. It is suggested that the physiological role of higher alcohols is their regulatory function in N metabolism inside yeast cell. — The article emphasises the yeast biomass function in formation of higher alcohols in the form of mathematical equations and nomograms. The article includes a nomogram to facilitate the calculation of the optimal inoculum dose, fermentation time and temperature during the brewing process.

S. A. Abou-Donia (Alexandria)

HOOD, A.: **Inhibition of growth of wine lactic-acid bacteria by acetaldehyde-bound sulphur dioxide** · Wachstumshemmung von Milchsäurebakterien in Wein durch acetaldehydgebundenes Schwefeldioxid

Austral. Grapegrower Winemaker (232), 34—43 (1983)

Acetaldehyde-bound SO<sub>2</sub> and low pH resulted in growth inhibition of bacteria associated with the malo-lactic fermentation in wine. Part of this effect is due to very low levels of free SO<sub>2</sub> in chemical equilibrium with the bound forms. The investigations were conducted in artificial medium; therefore, the results cannot be immediately translated to the practical winemaking situation. The studies further show that free SO<sub>2</sub> at concentrations difficult to determine can inhibit bacterial growth. The more complex SO<sub>2</sub>-binding behavior of wine will require more sensitive analytical procedures, when the studies are conducted on wine.

L. Mattick (Geneva)

KRÜGER, S., RADLER, F.: **Versuche zur Vergärung von Schleimsäure durch Milchsäurebakterien** · Experiments to demonstrate the fermentation of mucic acid by lactic acid bacteria (m. engl. Zus.)

Wein-Wiss. 38, 273—276 (1983)

Inst. Mikrobiol. Weinforsch., Johannes Gutenberg-Univ., Mainz

Investigations with 62 strains of lactic acid bacteria from 26 species of the genera *Lactobacillus*, *Leuconostoc*, *Pediococcus* and *Streptococcus* failed to demonstrate that these organisms possessed the ability to ferment mucic acid (galactaric acid) or glucaric acid. It was shown that the ability to metabolize these acids is wide spread among the aerobic bacteria as well as the enterobacteria.

L. Mattick (Geneva)

MINÁRIK, E.: **Kontaminierende Hefearten und die Stabilität der Flaschenweine** · Contaminating yeast spp. and stability of bottled wines (slowak.)

Vinohrad (Bratislava) 21, 161—163 (1983)

Komplexný Výskumný Ústav Vinohradn. Vinár., Bratislava, ČSSR

Die bei Weinen slowakischer Herkunft vorkommende Instabilität wird häufig durch *Saccharomyces bailii* verursacht, wie Analysen ergeben haben. Vor allem Weine mit Restzucker sind betroffen. Als Gegenmaßnahme wird Membranfiltration vor dem Abfüllen empfohlen. Die Anwendung chemischer Präparate hat sich als erfolglos erwiesen.

J. Blaha (Brno)

MINÁRIK, E., ŠILHÁROVÁ, Z., JUNGOVÁ, O.: **Aktivierung der alkoholischen Gärung zuckerreicher Moste** · Improving the alcoholic fermentation of musts with a high sugar content (slowak.)

Vinohrad (Bratislava) 21, 137—139 (1983)

Komplexný Výskumný Ústav Vinohradn. Vinár., Bratislava, ČSSR

In Versuchen zur Vergärung zuckerreicher Moste (204, 240, 292, 320 g/l) wurden Thiamin (50 mg/l), Ammonphosphat (50 mg/l) oder steigende Mengen (100—500 mg/l) eines aus *Botrytis cinerea* hergestellten Aktivators (A) zugesetzt. (Zur Herstellung des A vgl. die in der Originalarbeit zitierte Literatur.) — Durch A wurde die Gärung am stärksten gefördert, u. z. steigend mit der Höhe des Zusatzes. Bei einem Zuckergehalt von 320 g/l verstärkte nur A-Zusatz die Gärung. Außer dem Gärverlauf kann auch die Zusammensetzung des Weines durch A verbessert werden.

P. Slamka (Trier)