

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN**  
**VINNOVA S.A. and TECNOVID S.A., IN CHILE**  
**AND**  
**THE DEPARTMENT OF VITICULTURE AND ENOLOGY**  
**OF THE UNIVERSITY OF CALIFORNIA, IN THE USA**

**Article I. Parties and Purpose**

Vinnova S.A. and Tecnovid S.A., (established by the Universidad de Chile, the Pontificia Universidad Católica de Chile, the Universidad de Talca, the Universidad Técnico Federico Santa Maria, and the Universidad de Concepción together with the industry associations of vineyards and wineries) hereinafter representing the Chilean Party, and the Department of Viticulture and Enology at the University of California, Davis, hereinafter representing the California Party, will jointly initiate and administer a research, development and capacity-building program that will address improving viticultural and enological technology, especially in the areas of sustainable production and improving wine flavor, and educate a new generation of winemakers and viticulturists to enhance and sustain innovation in wines and grapes in both Chile and California.

A key advantage of close collaboration between researchers in Chile and California will be the ability to take advantage of two cycles of fruit production in either hemisphere to speed the advancement of projects studying this perennial crop and its added value processed product. Such collaborations will be mutually beneficial and will greatly speed research progress in the areas of breeding, vine performance, and fruit and wine quality.

**Article II. Areas of Cooperation and Collaboration**

This agreement will focus on the following areas of interest:

- 1. Sustainable viticulture.** The sustainable production of grapes and wine is critical to the ongoing and future success of this important economic sector and the many benefits it brings to Chile and California. Studies to address reducing water usage are very important, but other cultural issues such as soil pests and salinity must be solved to sustain viticulture. The interaction between viticulture and climate change is a key issue.
- 2. Energy Efficiency and Green Winemaking.** Reducing energy inputs is important for reasons of cost, and other aspects of sustainability such as reducing the production of green house gases. Water usage in wine production can be reduced with careful study, and the quality of waste streams must also be improved to limit environmental degradation.
- 3. Wine Flavor.** The basis of the quality of wine is its flavor, including all aspects of its sensory impact, such as aroma, color and taste and texture in the mouth.

Research into the grape and microbial genetics and other production factors that impact wine flavor are essential to improving wine quality, as well as understanding the stability of that flavor in the finished product. Sensory science should be used to support flavor investigations, but a better understanding of sensory evaluation and consumer preference is also needed.

4. **Wine Phenolics.** The phenolic substances in wine have a special impact on its flavor but more importantly have an impact on health. Such studies should address major diseases, i.e. heart disease or cancer, diseases that have been linked to grape or wine consumption by better health in epidemiological studies. Approaches could include in-vitro, animal or clinical human investigation.
5. **Pests and Diseases.** Vines are subjected to many diseases and pests, and while many are localized problems, there is always a risk that pests may move into new areas. The most sustainable means to address pests and diseases is via plant improvement, creating new genotypes that are inherently resistant to specific diseases or pests. In addition, it is important to know which pesticides can be used to address specific vine diseases and pests when a new problem arises.
6. **Wine Economics.** At the global market level, California and Chile have a mutual interest in undertaking economic research to better understand wine market developments such as demand and price determinants. Understanding issues such as consumer preferences, the economic consequences of government regulatory and tax policies, the economic implications of environmental threats, the effects of developing new technologies or management strategies, and limitations to critical resources such as labor or water are all key to market leadership.
7. **Extension of Technical and Research Information.** The rapid utilization of new developments in grape and wine technology is vital to economic competitiveness. Academic faculty as well as skilled industry members will be mobilized to address industry groups in order to identify and remedy gaps in knowledge and provide updates on new technological developments.
8. **Education and Capacity-building.** Since there is currently much growth in viticulture in Chile and the US, it is important to train students to become the next generation of professionals and educators. UC Davis will provide specific degree programs in and supporting viticulture and enology, including Bachelors, Masters and PhD degrees. Students will also be assisted in finding internships with work experience after obtaining their degree. Reciprocal opportunities will be offered to US students to study with collaborators and faculty in Chile.

### **Article III. First Year Implementation Schedule**

Within 3 months of the signing of this agreement there will be an initial meeting or videoconference of the Management Committee that will establish the agenda which will include:

1. Exchanges and determination of common interests of joint projects among areas of Article II .
2. An exchange of information and elaboration of proposals and exchanges in the projects identified by PI's from each country.
3. A symposium to transfer project plans and educational programs with all potential collaborators present.

#### **Article IV. Implementation of Collaborative/Cooperative Projects, Programs and Activities.**

Specific details of any cooperative/collaborative activities to be conducted under this Agreement will be described and agreed upon in writing in the form of Proposals to be presented to funding agencies both in Chile and California as appropriate. These Proposals will include identification of institutions from both the public and private sectors that will participate; the objectives of the partnership; activities to be conducted; responsibilities of cooperating parties; personnel who will participate; duration of the activities; implementation procedures; and, source, allocation and amount of financial resources. The proposals should address in detail how Intellectual Property Rights will be administered and their benefits distributed.

#### **Article V. Cooperation with Third Parties**

Since other universities, institutes, centers, organizations and companies may have capabilities and conduct activities, which will benefit and support this collaboration, the signing parties will identify these other cooperators for joint participation in mutually agreed projects and activities. The activities, responsibilities and other details of the participation of such third parties will be defined and agreed in writing by the signers of these MOU.

#### **Article VI. Management**

This MOU will be managed by a Management Committee (MC) which will report annually to the Parties. It will be composed of one representative from the Chilean Party and one from the Californian Party, each acting as co-chairs. The co-chairs may also mutually nominate other representatives if they deem it necessary. The MC will meet periodically, at times and places of its choice to review progress of the activities under this MOU, to periodically review the priority areas for cooperation, to recommend projects and establish framework(s) of cooperation for each selected area (including but not limited to key institutions, key persons, forms of cooperation and financing); to maintain close exchange of information between the Participants in the identified fields of cooperation; to assess whether the cooperation is bringing real benefits to the development of new business in both countries; and to coordinate administrative matters.

Each Party will bear the costs of its participation in the activities under this MOU. The activities will be subject to the availability of funds, resources and personnel of each Participant, but one of the main responsibilities of the MC will be to raise funds to accomplish the task agreed on this MOU.

#### **Article VII. Support and Resources**

The amount and source of resources and other requirements for cooperative activities will be based on the Chile-California Partnership for the 21st Century, signed on June 12, 2008 by the President of Chile and the Governor of the State of California in the USA and other

additional funds that could be raised to comply with the objectives of this MOU. All participants may jointly or individually seek funding and support from third parties to conduct collaborative projects, programs and/or activities. This Agreement does not obligate either the parties to provide funds and/or other resources from its own or other sources unless agreed in writing. Proposals for joint research contracts and grants shall be subject to the usual financial and administrative procedures of each country and require approval of the respective institutions.

#### **Article VIII. Resolution of Disputes**

The parties are committed to the informal and expeditious resolution of any dispute that arises between them related to or arising from any aspect of this Agreement or either party's performance of this Agreement. If a dispute arises which the parties cannot resolve themselves, the matter shall be determined in the following way. Either party can request this procedure.

The parties shall form a dispute resolution panel consisting of three members. Each party shall choose one member and those two members shall mutually choose the third member in a manner that they determine. The panel shall determine its procedures. The guiding principal shall be an expeditious resolution of the dispute. There shall be no charge to any party for these services. The three members shall issue a written decision explaining the basis for their decision. The written decision shall be final and binding on the parties.

#### **Article IX. Language of Agreement**

There will be six copies of this Agreement; three written in English and three in Spanish. The two versions are equally valid.

#### **Article X. Duration, Termination and Modification of the Agreement**

This Agreement shall take effect when signed by the official representatives of the institutions involved and will remain in effect for an initial period of five (5) years and may be extended by mutual agreement in writing for additional five-year periods. This Agreement may be terminated by either party with six months written notice of intent to terminate. In the event of termination, each party will assume financial and other responsibilities for the completion of required and agreed activities or as such responsibilities may be modified by mutual written agreement. Any modification shall require the written approval of the signers of this MOU.

This agreement constitutes the entire agreement between the parties. There are no understandings, agreements, or representations, oral or written, not specified herein regarding this agreement. No amendment, consent, or waiver of terms of this agreement shall bind either party unless in writing and signed by all parties. Any such amendment, consent, or waiver shall be effective only in the specific instance and for the specified purpose given. The parties to this agreement by the signatures below or their authorized representatives, acknowledge having read and understood the agreement and agree to be bound by its terms and conditions.



**Tecnovid S.A.**

Approved by:

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Patricio Middleton K.                      Date  
President  
Tecnovids

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Carlos Vio L.                                      Date  
Vice President  
Vinnova S.A.

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Alfredo Schiappacasse C.                      Date  
Director  
Tecnovid S.A.