

1. PUBLISHABLE SUMMARY

Summary of the context and overall objectives of the project (For the final period, include the conclusions of the action)

According to FAO grapes are one of the world's largest fruit crops, with approximately 74 million tons produced each year, and is one of the most diffused fruits. Considering the weight of the edible portion, the grape is the most produced fruit crop in the world. In 2014 46% of the grape production consisted of unpressed grapes, while the other 50% was mainly used in wine production.

Environmentally friendly and cost-competitive grape production presents a key challenge facing grape growers and society in general. Current modern means of agriculture protection is consuming massive amounts of different pesticides in order to accomplish the desired yield. Moreover, when pesticides are applied with current technologies about 50% of total sprayed quantities do not reach their intended target. The ability to spray large areas of vines selectively, economically and effectively is just what the grape growers market needed.

In order to answer this market need, Spanish company TEYME, as one of the vanguards of the vineyard spraying equipment, is developing the new TEVINS sprayer. As one of the most important tasks of this Phase 1 project, TEYME completed a thorough feasibility study which fulfils the following objectives:

1. To assess the project's technical, financial, commercial, political, legislative and management risks.
2. To conduct an in-depth market analysis.
3. To distribute partner searches to enhance market expansion.
4. To further evaluate our technology with independent industry experts and with our existing customers.
5. To refine IPR strategy and seek external advice on the most appropriate IPR route, to look on the most promising ideas which can be patented and be used to secure Teyme's lead in the industry.
6. To develop an elaborated business plan providing more detailed market research and set a comprehensive approach for commercialization in the period following the feasibility study

The results are promising in terms of technology development and commercialization strategy. Positive experience with Phase 1 (financial stimulus as well as professional guidance) has encouraged the company to apply for funding in the next Phase 2 call.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far (For the final period please include an overview of the results and their exploitation and dissemination)

Through Project (Phase 1) implementation, and mostly through work performed in the preparation of the Feasibility study, the company has enhanced and deepened its market knowledge and confirmed the assumptions about the need of the new ecological and environmentally conscious machinery. The company is most firmly convinced in TEVINS product's marketability, belief that was strengthened by additional affirmative evaluation of proof of concept from the customers' side. From the IPR perspective, there are no legal obstacles which can jeopardize product launch. Moreover, the TEYME company is highly conscious regarding the protection of knowledge gained as result of this project. Furthermore, market research has proven one of TEYME's comparative advantages i.e. vineyard sprayer market proximity, as the vast grape producers are located in Spain, Portugal, France and Italy.

TEYME's R&D department plans to perform further technology validation and testing in Phase 2 as full project implementation.

Progress beyond the state of the art, expected results until the end of the project and potential impacts (including the socio-economic impact and the wider societal implications of the project so far)

TEVINS project directly supports EU calls for development - Stimulating the innovation potential of SMEs for sustainable and competitive agriculture, forestry, agri-food and bio-based sectors. The project has addressed the following EU and global challenges:

- Minimize the hazards and risks to health and the environment stemming from the use of pesticides – EU thematic strategy had set these objectives
- Access to clean, fresh water - Product full implementation is in line with water preservation, by reducing the number of pesticides in groundwater to obtain good chemical water status and linked with the European Water Framework Directive.
- Food quality & safety – a project aiming to reduce the residues of pesticides in food which can still pose acute health risks for consumers. In January 2016, the European Union announced four Commission Regulations amending Annexes II, III and V to Directive 2005/396/EC [1] of the European Parliament, and of the Council, with regard to maximum residue levels for pesticides in or on food and feed of plant and animal origin.

The implementation of the project will result in new innovative vineyard sprayer enabling the grape growers direct and indirect saving in the form of:

1. Lower pesticide usage by grape spraying –approximately 30% (depend upon vegetation index)
2. Labour time reduction and tractor fuel savings
3. Decreased fertiliser cost
4. Increased yield
5. Increased grape quality
6. Reduced vineyard contamination with pesticides
7. Vegetation data saved and sorted into Cloud for future potential analysis by pesticide producers, local agriculture support agencies etc.

Continuous research teamed with over 40 years of experience and product development allows TEYME to offer vast range of machines of 1st class technology. TEVINS project fully fits in line with TEYME's management strategy toward new innovative products to ensure the future company growth. The company strategy is focused on the understanding of growers' problems, in order to make a common solution.

Address (URL) of the project's public website

<https://www.teyme.es/>



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productivity and effectiveness**