Mechanic and automation solutions for the safety execution of the main cultivation operations of Ligurian olive growing

Riferimenti
Tipo di progetto
Gruppo Operativo

Acronimo
S.IN.O.L

Tematica
Robotica-automazione

Information
Time frame
2020 - 2021

Durata
18 months

Partners (no.)
4

Regione
Liguria

Comparto
Olivicoltura

Localizzazione
ITC31 - Imperia
ITC33 - Genova
ITC34 - La Spezia

Costo totale
€100.000,00

Fonte di finanziamento principale
Programma di sviluppo rurale

Programma di sviluppo rurale
2014IT06RDRP006: Italy - Rural Development Programme (Regional) - Liguria

Parole chiave
Farming/forestry competitiveness and diversification
Soil management / functionality
Farming equipment and machinery
Farming practice
Agricultural production system

Sito web
https://www.cipatimperia.it/2021/05/31/soluzioni-meccaniche-e-di-automazione-pe...

Objectives
The main objective of the project consists in the realization of an application to be used on light commercial tracked vehicles designed to assist field work, in this case the pruning and harvesting of olives, working in safe conditions and significantly reducing efforts and the operator fatigue. Consequently the following objectives will be pursued: increase in productivity and profitability of companies, improvement of safety conditions at work, reduction of the underage through a potential recovery of the abandoned territory, support for generational change in olive growing.

Activities
Following the studies carried out in the first phase, the project activities will be dedicated to the realization of a module mountable on a small commercial crawler vehicle, typical of olive grove work, to allow elevation work in olive groves. This module must allow to perform the work carried out in elevation in absolute safety through the creation of solutions able to adapt the stability of the vehicle to the conditions of the ground. The module will also include:
- an apical platform with power outlets at maximum voltage and power suitable for the tools used;
- a rechargeable battery both from the mains and from the tracked vehicle alternato

Context

Project status
ongoing

"Ligurian olive growing is characterized by a very high incidence of labor costs necessary for the execution of the most important cultural operations. The territorial conformation to bands / terraces, combined with the characteristic presence of the stumps close to the walls themselves, has historically prevented appreciable and safe forms of mechanization and obliged the olive growers to carry out manual operations with a high accident risk. The appreciable practice of reducing the height of the hair has not eliminated the need to operate at several meters of height. These operations are often entrusted to specialized third parties and, even when carried out directly by the olive grower, are still very risky and expensive.
It is therefore necessary to seek specific technological solutions for our reality which, on the one hand, increase safety and, on the other, increase the possibility of mechanization, facilitating operations, reducing execution times and positively affecting company budgets.
The project presented here aims to introduce an innovation for field operations aimed at improving the results of some processes (first of all pruning and harvesting). The problem that needs to be solved is the result of a need expressed in the first phase and the solution that we propose to achieve would make up for this need by allowing on the one hand to introduce a slight automation in activities currently done by hand and, anything but negligible, would lead to an increase in safety in the processing phases in the field, in particular those to be carried out ""at height"""

Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	CIPAT - Centro Istruzione Professionale e Assistenza Tecnica della Regione Liguria	Via Tommaso Schiva 48 18100 Imperia IM Italy	0183 291801	im.cipat@cia.it
Partner	Università di Genova - Dipartimento di Ingegneria Meccanica, Energetica, Gestionale e dei Trasporti (DIME)	Via All'Opera Pia, 15 16145 Genova GE Italy	010 20991	amministrazione.dime@unige.it
Partner	Azienda Agricola Valle Ostilia	Via Cascione 20 18010 Villa Faraldi IM Italy		info@valleostilia.it

Role	Azienda	Address	Telephone	E-mail
Partner	Moirano Costruzioni meccaniche S.n.c.	Via Benessea 50 17035 Cisano sul Neva SV Italy		moirano@moirano.com

Pratice abstract

Description
"The project will consist in the realization of a module to be applied to a light commercial motorized wheelbarrow to assist the farmer operators in elevation work carried out in the field, in this case pruning and harvesting of olive fruits. To achieve the goal of the project will therefore be built a module for the motorized wheelbarrowwill be built, equipped with a platform for elevation and / or a telescopic ladder. A stabilization system will be designed and built that will allow to be carried out elevation activities avoiding accidental falls so as to increase the safety of the elevation works. Another peculiarity of the proposed devices is the creation on it of a ""electric feeder"" with an electrical panel that allows the use of electrical and / or pneumatic devices for processing (pruners, shakers, shears, etc.).) in the open field.
The module represents a first step towards the idea of creating an integrated support system for the olive grower conceived as a central unit to which, from time to time, the applications required for the various processes can be connected (scerbatura, chopping, spraying, etc.) with an automation level to be defined."

Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	https://www.cipatimperia.it/2021/05/31/soluzioni-meccaniche-e-di-automazione-pe...	Sito web