

## Automation of the feeding for cattle farms in Lombardy

### Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

AUTOFEED

Tematica

Robotica-automazione

Information

Time frame

2019 - 2022

Durata

36 months

Partners (no.)

7

Regione

Lombardia

Comparto

Zootecnia - bovini/bufalini

Localizzazione

ITC47 - Brescia

ITC4A - Cremona

ITC4B - Mantova

Costo totale

€716.945,51

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP007: Italy - Rural Development

Programme (Regional) - Lombardia

Parole chiave

Animal husbandry and welfare

Farming equipment and machinery

Agricultural production system

Sito web

<https://autofeed.crea.gov.it/>

Project status

completed



### Objectives

Carrying out an evaluation of the conditions of use of the Automatic Feeding Systems (AFS) and of partially automated systems for rationing and ration management operations in some dairy and beef cattle farms in Lombardy. The aim is:

- 1) make cheap and convenient the introduction of such systems in farms;
- 2) improve the animal condition to access the delivered feed;
- 3) improve the efficiency of the unifeed rationing system

### Activities

Project activities will be divided into three tasks:

- 1) Preliminary fact-finding survey: analysis of the market, of the available AFS types, of the chosen installation solutions and of the opinion the breeders have on AFS.
- 2) Definition of the housing models equipped with AFS and their comparison with others based on a conventional unifeed wagon.
- 3) Monitoring and analysis of the animal farms already equipped with AFS to highlight the economic, production performance and animal welfare aspects achievable.
- 4) Feasibility study in companies not equipped with AFS to define the technical and economic design elements. Comparison of before and after AFS installation.

### Context

In agriculture, the increase in the use of external labor and the outsourcing of almost all the harvesting jobs to contractors has led agricultural companies towards more entrepreneurial production models. The digitalization of the agro-food sector, the increase in the educational level of agricultural entrepreneurs and the growth of companies run by young "under 35" people favor the development of more efficient and sustainable

production models capable of "producing more with less". Bovine animal husbandry in general adheres to such general framework: the reduction in the number of farms (-28%) and the number of animals raised (-7%) was offset by the increase in the average size of the herds. In dairy farming there are farms with an average size greater than 100 animals/farm. The strong territorial specialization and the peculiarities of the Lombard territory have led to a further increase in the herd up to over 150 heads/farm on average, with a constant search for increasingly efficient production conditions. Meat zootechnics has a valuable share of produced value despite the not always favorable price dynamics and the changes in consumer preferences that reward production models considered more ethical and sustainable. The use of new technologies such as AFS safeguards the valuable aspects of the milk and beef supply chains: in fact, they redistribute the work towards more managerial and supervisory tasks, improve animal welfare (less competition for food, greater freshness of the feed in the manger, greater tranquility of the herd) and reduces the incidence of human errors in the management of the variability of the unifeed ration.

### Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	CREA-ING - Unità di ricerca per l'ingegneria agraria	Via Milano 43 24047 Treviglio BG Italy	0363 49603	
Partner	Fondazione CRPA Studi Ricerche	Viale Timavo 43/2 42121 Reggio Emilia RE Italy	0522- 436999	info@fondazionecrpa.it
Partner	Società Agricola Cervi Ciboldi Ernesto, Maria Cecilia e Maria Paola Società Semplice	Via Maggiore, 17 26028 Sesto ed Uniti CR Italy		
Partner	Dellabona Faustino e C. S.S. Società Agricola	Via Cascina Monticella 25020 Gambara BS Italy		
Partner	Società Agricola Fattoria Ginestra di Bettoni Adonis e Angelo Società Semplice	Via Gorla, 37 22076 Mozzate CO Italy		

Role	Azienda	Address	Telephone	E-mail
Partner	GIOVANNINI GALDINO E PECCHINI DRUSILLA S.S	Via Campione, 2 46031 Bagnolo San Vito MN Italy		
Partner	Società Agricola Pieve di Nodari Gualtiero e C. S.S.	Via Cascina Pieve 25013 Carpenedolo BS Italy		

## Pratiche abstract

### Description

A first expected result of the project will be the identification of useful elements to improve the efficiency of TMR preparation and distribution (e.g. by using optical systems for in line determination of the chopping length). The project activities will result in the collection of the data relating to the variability of the ration which will allow to highlight the causes.

Their identification will allow the issue of guidelines and technical sheets which:

- will identify the best organizational procedures to reduce the heterogeneity of the unifeed fodder ration;
- will provide updated information on the level of food efficiency achievable with unifeed rationing.

### Description

The monitoring carried out in dairy farms that will introduce partial automatic systems (i.e. robotic feed pusher, in-line measurement of forage variability with NIR system, in-line measurement of the TMR chopping length) will result in the drafting of guidelines that will support animal farmers to make the best choices aimed at including these innovations in the barn structure.

### Description

"The data acquired in farms already adopting fully automatic systems (AFS) will be used for the drafting of guidelines on the introduction of such systems in newly designed barns as well as their integration in already existing ones.

More specifically, this document will address the issues relating to:

- the energy efficiency of the system;
- production performance of animals (dairy and meat);
- use of labor;
- design and structural aspects of the barns (both in the case of design from scratch and the renovation of existing shelters)."

## Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	<a href="https://autofeed.crea.gov.it/">https://autofeed.crea.gov.it/</a>	Sito web
Pagina Facebook del progetto	<a href="https://www.facebook.com/ProgettoAutofeed">https://www.facebook.com/ProgettoAutofeed</a>	Link ad altri siti che ospitano informazioni del progetto
Video del convegno finale	<a href="https://autofeed.crea.gov.it/sistemi-automatici-di-alimentazione-nellallevament...">https://autofeed.crea.gov.it/sistemi-automatici-di-alimentazione-nellallevament...</a>	Materiali utili