



PRESS RELEASE

Forage quality for healthier cows: the European Commission finances the innovation of the RA-Rake double star rake

Tests carried out by the University of Milan confirm the validity of the new patented windrower, thanks to which the manufacturer has obtained significant European funding for Horizon 2020.

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Because of the growing attention to product quality and cost reduction, and the recent changes in the agricultural industry, forage has a serious impact on both the quality level of production (milk and meat) and the income statement of the farm. Indeed, **if forage is weighed down by soil and stones or contaminated with spores** (in particular the dangerous *Clostridium*), **this affects animal health, with serious consequences in terms of medicine requirements, total cost of care and productivity.** The raking, the intermediate stage in the harvesting of hay, is an essential phase for obtaining clean, healthy and high-quality forage with a **low total ash content.**

Ash is the total mineral content of the forage; there are two types of ash: internal (or endogenous) and external (or exogenous). Internal ashes are natural minerals present in plants, some of which have a nutritional value for livestock (calcium, potassium, phosphorus); internal ashes contained in hay, are the "good" ones, because they provide proteins and nourishment to animals. Then there are the outer ashes, which derive from soil contamination and do not provide any nutritional value to the animals. Therefore, **higher ash levels in forage are usually troublesome, as the external ashes (soil, stones, debris) do not provide any nutritional value to the livestock** and can reduce the economic efficiency of hay purchase.

For over a century Repossi Macchine Agricole has been designing and producing swaths with reeds and rotors. The latest addition to the range of rakes is the revolutionary *RA-Rake*, a **double-star rake, thanks to which in 2017 the company obtained a prestigious Horizon 2020 financing**, called by the European Union to promote and support innovation, research and technological development.

The innovation, ingenious yet simple, allows the advantages of the star rakes, but without having to bear the negative consequences on the forage: according to a study by the University of Minnesota, the star rake is the fastest and most economical, but it is also the one that collects the highest amount of stones and dirt. This happens because the single star is mechanically driven by friction with the ground and moves the hay, but at the same time pollutes it with a large amount of ashes. The idea of Gabriele Repossi, inventor of the new machinery, is to **equip it with two stars of different diameters:** the larger one does not touch the forage, but has the only purpose of providing motion to the second smaller star, which moves the forage without polluting it with stones and dirt. **This rake does not need complex and expensive mechanisms to move the smaller star,** so it benefits from **reduced costs** (both for purchase and maintenance) and allows it to operate at **high speed.**

The Department of Agricultural and Environmental Sciences of the University of Milan, in charge of validating with scientific tests the advantages obtainable from *RA-Rake*, has carried out preliminary tests on a rake prototype, which will be on sale from May 2019. The field tests involved 3 types of rakes, aimed at assessing the impact of the different variables (field situation, type of soil and machinery) on the quality of the forage obtained after the swathing phase.

The preliminary tests (which will be followed, according to the grant, by more detailed tests carried out in different parts of Europe) confirm that the new double star technology **determines a lower ash content (- 6.6%) compared to that found in the forage obtained with the rotary swath, the most widespread at the time.**

These results are particularly encouraging, if we consider that the tests were carried out with a *RA-Rake* prototype assembled in a few months, while the rotating rake is based on a technology developed over decades of tests.

For further information, please contact Gabriele Repossi at 02-9056625



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Repossi Macchine Agricole - The company designs and manufactures agricultural machinery, in particular for haymaking (raking) and breeding. Founded in 1898 and now in its fourth generation, it looks to the future thanks to innovative and patented solutions, including the RA-Rake double star rake, which in 2017 received Horizon 2020 funding from the European Commission.

Repossi Macchine Agricole srl - Via Vittorio Emanuele II, 40 - 27022 Casorate Primo (PV)

VAT number 01981040189 - Tel 39 02 9056625 - www.repossi.it www.rarake.eu - email marketing@repossi.it