

## World congress on CLIMATE CHANGE AND ECOSYSTEM

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**Influence of carbon fixation on the mitigation of greenhouse gas emissions of livestock activities related to sheep and goat farms in Italy aimed at achieving carbon neutrality****Roberto De Vivo<sup>1</sup>, Luigi Zicarelli<sup>2</sup>**<sup>1</sup>University of Napoli "Federico II", Italy<sup>2</sup>Pioneer HI Bred Italia SRL, Italy

In a previous contribution it was pointed out that in Italy the CO<sub>2</sub> fixed by forage crops is about 10% higher than the sum of all emissions attributable to the livestock sector.

We found it interesting to extrapolate the contribution of sheep and goats on the basis that the ruminal methane production of these animals is higher than that of dairy cows, because over 80% is forage.

Sheep and goats derive their forage mainly from poor and uncultivated pastures. Wheat, barley, oats, sainfoin, ryegrass and alfalfa are used for 2-3 months a year before producing seeds. Lactating subjects receive about 0.5 kg of cereals in the milking parlor, almost always of national or company production and therefore not contribute to the CO<sub>2</sub> equivalent due to transoceanic transport. The water requirement is partially met by the water present in the forage, with the exception of that necessary for washing the milking parlors. Furthermore, these structures are not present in all sheep and goat farms.

Due to the characteristics of forage production, which for the most part does not require processing, the balance between CO<sub>2</sub> and q fixed in the forage (Kilotonnes 4921) is equal to 2.2 times that produced by the agro-pastoral system (Kilotonnes 2234). In simpler terms, 54% of each unit of CO<sub>2</sub> eq released into the atmosphere is fixed in the forage used by sheep and goats which are therefore to be considered favorable to the resolution of climate-altering anthropogenic activities.

**Biography**

I graduated at the age of 25 at the University of Naples "Federico II" and then obtained post-graduate specialization at the University of Milan. I am a teacher in a secondary school and I am a zootechnical consultant. I have made two publications, and I have presented studies on the topic of the environmental impact of farms in two conferences, a European conference and a world conference.

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