

## **ENTERIC METHANE EMISSIONS FROM SHEEP: ESTIMATION OF NATIONAL EMISSION FACTORS**

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The objective of this study was to estimate sheep methane emission in Uruguay. National records and research results, were reviewed to collect information of total animals, agroecological distribution, categories and number of animals within category and region, animal productivity, and diet quality. The Tier 2 characterisation methodology was applied, and prediction equations recommended by IPCC were used to estimate net energy requirements, gross energy intake, and methane emission factors (EF). Four of a total of seven agroecological regions were selected, in these regions sheep represented 88% of the national flock (9.547.779 sheep), and pastures dry matter digestibility ranged from 53 to 62%. Within each region, eight categories were identified. For regions 1, 2, 3 and 4, sheep distribution (% national flock) and methane emission ( $\text{Gg year}^{-1}$ ) were, respectively, 45, 13, 19 and 11, and 25, 15, 10, and 8. Estimated daily methane productions were within the range of values (19 a 35  $\text{g sheep}^{-1} \text{ day}^{-1}$ ) reported in experiments using the sulphur hexafluoride tracer technique with growing and adult grazing sheep. Estimated EF's ( $\text{kg CH}_4 \text{ sheep}^{-1} \text{ day}^{-1}$ ) were closer to default values for developed (8) than for developing countries (5). For regions 2, 3 and 4, EF's were similar (8), and higher than for region 1 (7). Difference in breeds and animal productivity between region 1, and regions 2, 3 and 4 may explain these results. To obtain more accurate predictions, representative sample studies must be performed to generate more accurate data on live-weights and animal productivity for each agroecological region and category, and more research in characterization of pastures grazed by sheep is needed.