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**Caractérisation de l'exposition aux champs électriques et magnétiques des vaches et du personnel dans les fermes laitières typiques. (Characterization of bovine and human exposure to EMFs on typical dairy farms)**

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**Abstract**

The objective of the study presented in this report was to characterize the EMF exposure of cattle and workers on typical Québec dairy farms near and far from transmission lines. It complements a study conducted at McGill University's Macdonald Campus farm that dealt with the influence of EMFs on milk production and the health of dairy cattle. Here, EMF exposure was assessed under real conditions.

To begin with, EMF exposure was measured at four typical Québec farms. Of the four farms, two are located near transmission lines and the other two are not. Based on these measurements, the mean exposures were calculated for dairy cattle and farm workers.

A simplified model was then used to calculate the EMF exposure for cattle on the farms near transmission lines. The results of the calculations were compared to the recorded measurements.

In conclusion, the EMF exposure values measured and calculated in the study are lower than the values of 10 kV/m for EFs and 30  $\mu$ T for MFs used in the McGill University Macdonald Campus study [1]. In fact, during the five months when cows were grazing in the pasture under the conductors, the maximum values recorded at the farms studied were 5.3 kV/m for EFs and 5.5  $\mu$ T for MFs.

Note that the International Radiation Protection Association (IRPA) guidelines do not recommend any time restriction for the general public for exposure to MF values of 100  $\mu$ T or less.