Reproscope: The observatory of cattle reproductive performance in France

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The Reproscope observatory challenge's is to provide reproduction benchmarks for breeders, but also for their partners (technicians, veterinarians, scientists ...) who can be involved in issues of reproduction. The Reproscope observatory is a tool whose goal is to facilitate the cattle breeding objectives definition, consistent with the farm context, in line with breeders' expectations. The observatory relies on bovine data regarding birth, movements and insemination from both the National Identification Database (NRD) and the National Genetic Information System (SNIG), and it delivers every year homogeneous, exhaustive, anonymous and up-to-date statistics on all dairy and suckler cattle French farms. For each 12 months period, the observatory relies on more than 7 million calvings, 5 million inseminations and 180,000 herds.

The observatory facilitates the references acquisition on reproductive performances at the national level or from the selection of a specific population. The observatory is accessible from an open web interface (www.reproscope.fr), where the users can choose one or more geographical areas and type of production (dairy or suckler herd) that define the studied population. After choosing the year, the user gets filters to refine his selection. At the animal population level, performances can be compared between breeds. At the farm level, the choice of a group is defined according to main breed, specialization of the farm, herd size and, for dairy herds, milk production level. Finally, different breeding management strategies can be taken into account: calving season, use of artificial insemination and crossbreeding, percentage of primiparous cows and concentration of calvings according to a target age at first calving.

After having refined its selection, the user can see the performance of 20 breeding criteria (fecundity, fertility of cows and heifers, renewal management, insemination and crossbreeding practices, survival of calves or even the absence of calving) described through means and distributions.

For example, the practice of exclusive artificial insemination is carried out in 52% of the 58,635 dairy herds and in 6% of the 75,666 suckler herds for 2016-2017. In these herds, the success rate at first insemination reached 51% in the dairy fieldr and 62% in the suckler field, i.e. + 1% and + 5% respectively compared to the national average.

Reproscope is the result of a collaboration between Institut de l'Élevage, Allice, FCEL and ONIRIS-INRA. This tool gives an overview of French cattle breeding with the differences and similarities of breeding management strategies. Therefore, reproductive performance exploration highlights the existence of a significant variability of the performances whatever the selected population. Depending on the

indicators, this shows, in some situations, that performances are endured by the breeders or, conversely, that there are intentional breeder strategies. Beyond thise new production of references, the observatory provides new perspectives for the reproductive performance studies.