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All cows are worth to be genotyped !

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In dairy cattle, genomic evaluation based on male reference populations has the same accuracy for males and females and a very similar accuracy for all traits. This provides a new opportunity to efficiently implement within herd selection. Much more than before, the farmer can customize his breeding goal due to the larger panel of available bulls and the accurate evaluation of females for all traits. The proportion of genotyped females is very sensitive to the evaluation cost. It is anticipated that, in European conditions, this technology can be generalized to a large proportion of the female population if the cost is below 40€. The genetic interest and the profitability of this choice are highly dependent on the selection intensity which can be applied within herd. With conventional reproduction, most females are needed for replacement and the interest is limited. With sexed semen, a technology expected to strongly develop, the upper half of the herd (based on the breeding objective of the farmer) can be oriented to produce female calves for replacement whereas the remaining part does not contribute to replacement and can be mated for other purposes, especially in crossbreeding. In practice, it is worth to start genotyping at least all young animals during their first year of life, allowing to gradually increase the proportion of genotyped animals in the herd. In addition to selection, genotyping females provides useful information for matings (today genetic defects, tomorrow optimal matings based on inbreeding minimization, QTL pyramiding, non additive effects...). Finally, it should be emphasized that these females will contribute the reference population of the future and there is a strong general interest to increase the proportion of genotyped cows and decrease the genotyping cost.