## Factors Influencing the Yield of (Transgenic) Mouse Embryos

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Generation and cryopreservation of transgenic mice are depending on a reliable and continuous production of pre-implantation embryos. However, the outcome of embryos following superovulation and mating varies and is a limiting factor. To suppress circannual and circadian rhythms, laboratory animals are housed under standardized conditions. It remains to be elucidated if the artificial climate can cover all environmental effects. Using the data received together with the cryopreservation of 140.000 mouse embryos, the role of embryo yield limiting and raising factors was analyzed: The humidity in an animal facility is affecting the embryo production. The weather at the location of the facility, especially the temperature, influences the climate within a facility. Weather peaks are not fully covered, even if the air-conditioning supply is powerful. Subsequently, external weather changes interact with the environment within the facility affecting the outcome of mating and resulting in circannual oscillation.

A virus infection was paralleled with dropped yields and environmental noise and/or vibrations as generated by construction works, negatively affect the embryo yield. The mating frequency of males individually interferes with the outcome.

To increase embryo yields pheromonal effects were investigated: The housing of female donors in small groups (Lee-Boot effect) and the exposition to the future males' bedding before mating (Whitten effect) resulted in remarkably higher embryo yields.

Schwab A, Schenkel J (2008) Scand J Lab Anim Sci. 35(4), 283-296 Project WK3-1328-191