Epidemiology of synchronization programs for breeding management in US dairy herds

A. H. Souza*[1,2], P. A. Carvalho[1], R. D. Shaver[1], M. C. Wiltbank[1], V. Cabrera[1]
Department of Dairy Science, University of Wisconsin-Madison, 53706, USA[1]; Ceva Sante Animale, Libourne, 33500, France[2]

The aim of this study was to evaluate the use of synchronization programs in US dairy herds. Reproductive records from DHIA (AGSource, Agritech, and DRMS) were analysed. The final dataset included artificial insemination records from 2008 to 2012 and restricted to AI-breedings with confirmed pregnancy outcome. Only herds reporting at least 30 breedings in the last 12 months were included. A total of 1,142,821 breeding records from 40 states were available for the 1st analysis. Breeding codes were classified within herd into either AI-to-estrus (EAI) or synchronized-AI (SAI) based on weekly insemination profile for each herd. Within-herd, synchronized breedings were assumed when more than 30% of the breedings happened on the same day of the week, remaining breedings for the same herd were considered non-synchronized. Overall, 29.9% of the breedings happened after the use of synchronization programs, with great variation throughout states. The leading states in terms of proportion of SAI that reported more than 5,000 breedings were SD=56%, WI=46%, IA=43%, OH=40%, MI=32%, NY=29%, PA=27%, MN=24%, VA=23%, and SC=23%. Out of all SAI breedings, 78% happened on Thursdays and Fridays. There were no significant differences in conception results between SAI (32.6%) and EAI (33.4%), with no interactions with breeding month. Herd size information was available for a further dataset from WI herds with 207,506 breedings. Findings in regards to herd size and use of SAI at 1st AI in herds in WI are shown in table below, which indicate that SAI is used in most 1st postpartum AIs and larger herds seem to use more SAI at 1st AI and have lower days to 1st AI without compromising conception outcomes. In summary, these results indicate that most dairy herds in US use synchronization strategically as part of their breeding program. (Supported by Accelerated Genetics).

Herd size	ME305 (kg)	SAI – 1st AI (%)	DIM at 1st AI (d)	P/AI at 1st AI (%)
<300 (n=54,199 AI)	13,104[a]	47.4[a]	80.2[a]	36.5[a]
300-1000 (n=89,336 AI)	14,082[b]	66.4[b]	76.0[ab]	35.5[a]
>1000 (n=63,971 AI)	14,527[c]	75.3[c]	72.0[b]	35.1[a]

KEYWORDS
Dairy farms
Timed AI
Synchronization