

'Crossing' across the pond

Californian trial success highlights benefits of cross breeding



Cross-breeding trials in the US have attracted a surprising amount of international attention. We spoke to California-based producer Jack Hoekstra who charts the improvements in, and growth of, his herd following the introduction of the 'three-way' cross.

From tiger skin to an even brown and from the typical Holstein outline to cows with white heads – if you can imagine a colour pattern then you'll find it in William Hoekstra's 1,250-cow dairy herd, which he manages with help from his sons Jack and Curt of Oakdale, California. "We're one of the seven outfits involved in the now internationally known Californian cross breeding trials," says Jack. "You can spot the herds that cross different breeds, not so much by the variation in colour, but mainly by the number of young animals. Thanks to crossing, our replacement rate is down from nearly 40% to 28%. Herds that cross have more young stock than dairy cows because more calves are born alive. We

can increase herd size by 100 cows a year without buying any in."

Good grazers

The herd is run on a 400-hectare farm alongside 150 dry cows and 1,400 youngstock. They grow their own lucerne, grain and grain silage on 300 hectares and the rest is down to pasture.

"This makes good economic sense. Grazing dry cows and yearlings costs \$0.75 per animal per day. If we keep them in stalls and add labour and feed, it costs \$1.65 per animal per day," says Jack. He's a good head for figures. "With feed prices as they are now, feed costs definitely account for 60% of the total cost of milk. That's why we use



Hoekstra Dairy 6356
(B Jurist x Montbliarde x Holstein)

pasture – it's cheap and cross-bred cows are good grazers."

The conversation turns to cross breeding. "Ten years ago, our Holstein herd was one of the top in the region," says William. "We were producing more than 11,000kg of milk per cow, we hadn't bought any cows in since 1971 and we'd grown under our own steam. But to continue growing was becoming difficult, as so many cows failed in terms of fertility, foot problems and udder

health. We are breeding enthusiasts, but we realised we couldn't get ahead fast enough with Holsteins in health terms. So things had to change – something had to happen."

Cross breeding was one idea, but not with the breeds already well known in the US – Jerseys and Brown Swiss. These breeds have the same health problems as Holsteins, according to Jack. "And the variation in animals born from Holstein

Jersey crosses is too large and crossing with Brown Swiss makes for too many difficult calvings."

Secondary characteristics

The Hoekstras decided to cross breed to benefit from combining the heterosis effect and milk yield of Holsteins with the good secondary characteristics of the other breeds. "We started out cautiously with Normandy from France,"

Jack Hoekstra: "Thanks to cross breeding, we can increase herd size by 100 cows a year with our own replacements"

Jack says. "That was because of that breed's good type characteristics, but now we know they tend to put on too much meat."

The breeders only really changed course after they visited a French producer to look at Normandy cattle where

The youngstock and the dry cows have access to loafing areas and pasture

Mike Osmundson: "In 10 years' time, 85% of producers will be cross breeding"



"I'm a real Holstein fan," says Mike Osmundson. That seems strange, coming from the man behind the Creative Genetics Company of Oakdale, which began distributing and selling European dairy cow breeds in the US in 1997. "But the Holstein has run into

the sand on inbreeding and health characteristics. My aim is to help US dairy producers breed profitable cows, so we've been looking for breeds that can give something extra when combined with Holsteins." Mike is a great fan of cross breeding, and when the cross breeding trials became known, demand for semen exploded. Today, Creative Genetics has six people working to ensure that 2,000 doses of semen are shipped across the US every day. "We have a newsletter we send out to more than 10,000 addresses. Interest is increasing, I can imagine 85% of producers will be breeding this way in 10 years' time."

Mike comes in for a lot of criticism. "Too many people think only one breed is

best. We're trying to combine the good things in all breeds. Holstein breeders forget that calving ease, healthy udder and durability bring in money too. The time when more milk per cow automatically meant more profit is past."

Mike advises against grading up, and he's not enthusiastic about using spotted breeds either. "Grading up eliminates the heterosis effect, and spotted breeds have too much muscle. Crossing with spotted breeds gives too much variation. Use breeds consistently in succession and choose the best bulls based on the breeding value of their country of origin. And keep breeding simple and easy – that's also becoming more important."





William Hoekstra's 'colourful' cross-bred herd

the Hoekstras saw Montbeliarde cows. "The Montbeliarde is very much like the Holstein," says Jack. "It's more robust and has better health characteristics, and crossing with Holsteins ensures there will be little variation in the new generation. It's also important when crossing that you try and achieve a uniform herd, as it makes management much easier. To us, the Montbeliarde Holstein cross is the ultimate cross."

He stresses that using good bulls is still important when crossing. "You have to use the top bulls of the breed. We've used the sire Micmac a lot. He passes on good udders, as you can see from our cross-bred cows and heifers."

Jack was one of the first producers in California to start cross breeding with European breeds. He wanted to see numbers supporting the figures so he,

together with six other herds in the region, agreed to keep precise operating results. "Actually, the results were intended for ourselves, but thanks to Les Hansen, a researcher at the University of Minnesota, they've gained attention worldwide," says Jack. "We've come in for a lot of criticism from the Holstein world. On reliability, for example. We may only be seven herds, but we each milk 1,000 cows on average.

"But we're not involved in convincing everyone to start cross breeding. We use the data mainly to manage the business and, on the other hand, we can show the world what the possibilities of cross breeding are."

Three-way cross

The results (see Table 1) showed the Hoekstra's Normandy cross was

disappointing, and that a third breed was necessary to benefit from the heterosis effect. After crossing Holsteins and Montbeliardes, therefore, Jack used Swedish red and white bulls. "Swedish red and whites make for easy calving, fat and protein and healthy udders. We have some great B Jurist descendants and now we're using Peterslund and Orraryd." The first cross-bred cows have already calved five times, and Jack looks up some results on the computer. "Five years ago the calving interval was 15 months and now it's 13.5. The cell count is down from 300,000cells/ml to 200,000cells/ml, and the replacement percentage is less than 30%."

It wasn't long before Jack made the ultimate pairing. "We use three-way crossing consistently, but we've started using Danish Holsteins recently, because the Danes are much more involved in breeding for secondary characteristics."

Jack happily gazes at his colourful herd. Despite being diverse in terms of coat colour, the cows are remarkably uniform in terms of frame size, and their legs look as strong as iron. "Udders are more variable," Jack notes, "but that's getting better as we get rid of the Normandy influence."

Once again, he likes using figures in support of what he is saying. "When we started crossing, we expected to see a fall in milk production. The increase in life expectancy and lower health costs would have to make up for this fall. Ultimately, the fall in yield was only limited - we're producing 10,600kg of milk in 365 days on average, with 3.95% fat and 3.30% protein. These milk constituents are clearly above the average. We get one cent more for our milk on average and we were out to improve the health of the herd, and we see the higher fat and protein and better prices for slaughter animals as a bonus."

Jaap van der Knaap

Latest results from Californian cross-breeding trials

In their second lactation, the Holstein cows in the Californian cross breeding trials produced 800kg of fat and protein in 305 days. That's 12% more than the Normandy crosses, 7% more than the Montbeliarde crosses and 6% more than the Scandinavian red crosses, Les Hansen announced at a presentation at an international conference in Sweden last summer.

Although they're less productive, the crosses are harder (see Table 1) than pure Holstein cows. The survival rate during the first lactation was 83% for Holsteins, 90% for Normandy crosses, 93% for Montbeliarde crosses and 90% for Scandinavian red and white crosses. The figures for stillbirth percentages and the interval between calving and initial insemination were comparable.

Table 1: Data (305 days) for cows in the Californian cross-breeding trials in their second lactation

characteristic	pure Holsteins	Normandy x Holstein	Montbeliarde x Holstein	Scandinavian red & white x Holstein
number	310	217	432	274
kg milk	9891	8595	9202	9309
kg fat	427	375	400	404
kg protein	373	326	342	347
kg fat + protein	800	701	742	751
relative to Holsteins (%)		-12	-7	-6
survival (first lactation)	83	90	93	90
percentage stillbirths	14	9.9	6.2	5.1
calving to 1st insemination time	156	133	137	142