

# The Israeli Breeding Program

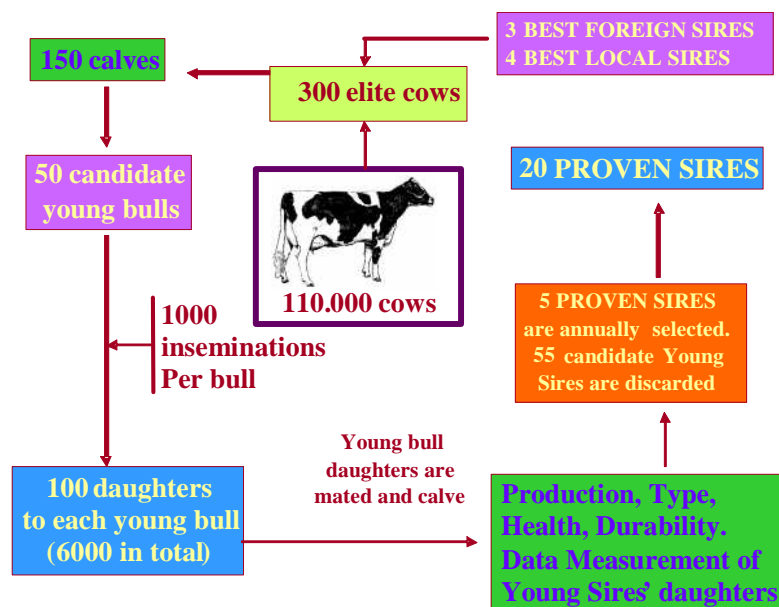
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The Sion A.I. company was founded in 2001 by the merging of On and Hasherut A.I. cooperatives. "Sion" currently keeps 240 bulls located in three different sites. Approximately 50 young bulls are tested every year. Semen from approximately 20 proven bulls is available to the Israeli dairy farmers for general service. Most are proven bulls with evaluations based on daughter production records, and the rest are high pedigree index young bulls.

Genetic evaluations are performed bi-annually. Bulls and cows are ranked by the Israeli Selection Index PD07.

## Diagram of the The Israeli Breeding Program



Each year, approximately 350,000 inseminations are performed in Israel, 92.5% with local semen of the Israeli-Holstein breed. "Sion" employs 36 insemination technicians. The 1,100 dairy farms are divided into 30 insemination districts, and the remaining six technicians work as substitutes. Currently, 88% of dairy herds are involved in the DHI system. Insemination information is recorded by the technicians on hand-held computer terminals. This system allows for error-free transfer of data to the central Israel Cows Breeders Association - ICBA computer, and prevents mating of closely related animals. The technician first enters the details of the proposed mating. The proposal is rejected if inbreeding coefficient is greater than 3.125% (calculated 3 generations).

The bulls are housed at three different sites: Young bulls are located in two locations in the north of Israel, active and waiting bulls are kept at the central A.I. center, south of Tel Aviv. Insemination of elite dams is programmed by the "Meytal" mating program, which tracks expected matings and calving dates.

The elite dams, which are owned by the dairy farmers and kept at the farms, are inseminated by "Sion" with some of the highest ranked bulls in the world based on Interbull evaluations, or with the best local bulls. Male calves born from those inseminations are bought by "Sion" at the age of one week.

Semen collection starts when bulls are 14 months old. When bulls are 16 months old, their semen is used to inseminate approximately 1,000 first-parity cows in DHI herds. This process is generally completed within three months. Semen from the young bulls is collected bi-weekly during a period of 18 months, and stored in the semen bank. This system assures a large semen bank for each bull, that can be used immediately after the bull is approved for general use at the age of five years, even if the bull is unable to produce semen at a later age.

Genetic evaluations are computed bi-annually, and the status of the bulls and cows are reevaluated after each new genetic evaluation.

The Israeli breeding program encourages the extensive use of young bulls with outstanding genetic value based on pedigree. These bulls are used for general service and perform 3-5 times more inseminations than the regular young bulls. Extensive use of these bulls increases the mean breeding value of the national population. In addition, the evaluations of these bulls at the age of five years will have higher reliability due to the greater number of daughter records.

The Israeli dairy cattle population has the highest mean milk and milk solid production in the world, even though dairy production conditions are sub optimal due to heat stress in most areas during most of the year. Israeli bulls transmit outstanding genetic ability for milk yield and components and excel in fertility, longevity and udder health traits. This impressive achievement is the outcome of the long-term cooperation among farmers, Sion A.I. company, the Israeli Cattle Breeders Association, the Agricultural Research Organization, and the Ministry of Agriculture Extension Service (Sha'ham).