

**Introduction to the visit of Saatzucht Hans Lembke, Malchow/Poel,
on 9/10 April 1997, by participants of the GCIRC Technical Meeting-Göttingen,
on the occasion of the centenary of the
Lembke Plant Breeding Company**

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We have arrived in the German federal state of Mecklenburg and are guests of the "Saatzucht Hans Lembke, Malchow" (acronym SLM). This breeding station today is a branch of the "Norddeutsche Pflanzenzucht Hans-Georg Lembke KG" (acronym NPZ), Hohenlieth, located in Schleswig-Holstein in another federal state of Germany, in bee-line 100 km west from here. Both sites are marked by the name Lembke and during the day to come you will often hear this name and see Lembkes footprints everywhere.

Tomorrow morning Mr. Heinrich Baudis will show you the person, who by his father Johann Lembke was called Hans, when born on May 28, 1877, here in Malchow on the Mecklenburgian isle of Poel, which in those days was still fully surrounded by the waters of the Baltic Sea and could only be reached by a ferry-boat, while today it is connected to the mainland by a dam.

Mr. Dietmar Brauer, the great grandson of Hans Lembke and now manager of SLM, Dr. Martin Frauen, director of breeding of NPZ and their coworkers will guide you around through the station and fields, where in 1897 Hans Lembke started with plant breeding. These activities he carried on through more than 60 years of his life and they were maintained in a remarkably durable manner through all the hundred years, irrespective of a lot of blow-backs caused by historical constellations.

You will learn a bit of the economical history and actual topics of the Lembke family company from Mr. Dietrich Brauer, the grandson in law of Hans Lembke, who is the managing director of NPZ and unlimited shareholder of NPZ since 1973.

What is left for me at this point of time, is to give you a first idea of the local spirit and of the unique atmosphere, which I was personally privileged to experience in professional cooperations and as a guest and later friend of the Lembke family since now 30 years, and which definitely had its origin in Malchow and with Hans Lembke, whom I had never the chance to meet in person, but whose heritage has always been evident for me in this family and company wherever I look. My introductory contribution to our present visit to Malchow for the next 15 minutes may be entitled: Materials and Methods of Lembkes plant breeding.

Materials in plant breeding are essentially bound to its place of origin. The island of Poel contains areas with relatively good and uniform soils, well suited for crop plant production. But the climate can often be harsh and the winters cold, and the growing season not rarely includes periods of drought, posing stress to the developing crop. The native farmers, who know the local conditions, can well react by careful tilling, early enough sowing and diligent cropping, and yields have been high on Poel in the family farms, which since the 17th/18th centuries averaged in size between 30 and 100 hectares.

The Lembke family can be traced back on Poel in a document to 1357. But the farmstead in Malchow is mentioned as such only in 1627, when Asmus Lembke took it in hereditary possession. It was the most stately of the five farms existing in Malchow in those days and owned about 50 ha of fertile soils. The farm held 10-12 horses, but had only 4 milking cows, since

there was only little meadow grass on Poel and most of the fields carried cereals, which exhausted the soil receiving only little dung. For such reason, peas and cabbage, and later also rapeseed, clover and forage grasses had an important position as break crops in the rotation.

Asmus Lembke farmed the peasant estate from 1627 to 1674 for almost 50 years, from the outgoing 30 years religious war on, when Poel became Swedish. Most probably it was he, who contributed a lot that the farmers on Poel remained free and escaped serfdom, while most Mecklenburgian peasants fell in bondage. Later, although the island lay off the major roads, war, conquests and foreign rules were no rare happenings and seldom was life on Poel idyllic in those ages.

The succession of the Lembke family on their farm in Malchow is well recorded in the parish register and Hans Lembke was the tenth after his ancestor Asmus, to receive the property from his father Johann in 1905, after he had begun farming on it already 8 years earlier.

After elementary and secondary school education and an agricultural apprenticeship on several larger farms on the mainland, Hans Lembke because of serious illness returned home in 1897. His heartfelt desire had been a university education in natural sciences, to receive fundamental training for his beloved pursuit in plant and animal biology. From the early days of his youth, when he had accompanied his father over the fields of their farm, detailed observations of natural events and processes had caught his utmost interest. Later his science teacher in Wismar had further promoted this eagerness of the talented schoolboy. But the family tradition, to take over his fathers farm, had precedence over such personal preferences.

So being back home Hans Lembke, now being 20 years old, started farming his fathers farm. But besides he engaged himself in his earlier hobby and started to test out observations made as a boy, that individual plants differed greatly in development and performance, although they grew side by side under essentially the same conditions. For such purpose, rapeseed had been his particular love and remained to be so all through his life. In 1897 he began selecting vigorous, healthy plants with well filled siliques. These in the first years were sown in bulked plots and since this initial material had been derived from the genetically diverse landrace of his home isle Poel, in a few cycles of selection not only considerable progress was made in average yields, but also because of the favourable conditions of selection under the climatic stresses at this island site, his selection soon turned out to ideally combine productivity with climatic stress tolerance. In particular, during the rough winter of 1908/09 a great deal of the rape and turnip crop in Malchow had been killed by frost. Lembke transplanted the remained plants into his nursery and after careful observation during the coming season he harvested the best 50 plants and finally identified the best 19 for sowing as A-lines in unrepeatd 64 m² plots in the fall. With this procedure, Lembke changed over to the pedigree breeding schedule, which soon confirmed that one of the 19 plants selected in 1910 was superior to all the others. At the very end, he was left with offsprings from only this one plant No. 46, which entered in the official cultivar register (DLG) as "Lembkes Winterraps" in 1917. By continued single plant selection after most intensive field observation, this cultivar could be steadily further improved during the years. Its yields soon surpassed the original landvariety from Poel by almost 30 % and all the other German rape cultivars by 20 %. It became the prototype of Central European winter-rape and remained in cultivation until 1960, i.e. more than half a century. Last but not least it had been the dominating cross parent for a great many other cultivars in this crop species.

As may be expected, Hans Lembke did not restrict his breeding activities to rapeseed. He dealt with turnip rape and with similar success also with red clover, perennial ryegrass and other forage grasses, with wheat, oats and potatoes, as well. What is most remarkable from a theoretical point of view is the way, how he exploited the genetic resources of his region. Like in

winterrape, his selection in turnip rape started from 16 single plants of the domestic landrace of Poel, and when the "Lembkes Winterrübsen" was registered in the official cultivar list, this cultivar population was derived from only one initial plant. In red clover as well as in perennial ryegrass the origins again were 3 clones only and in all cases annually continued single plant selection and pedigree testing served for a constantly high, if not even improving yield performance of these Lembke-varieties.

For financing his breeding hobby, Lembke had thought to gain the necessary money from the production of seed potatoes. But it soon turned out that from the basic materials, which he bought for propagation, only diseased cultures grew up full with virus. In imitation of his procedures with the other crops, Lembke started single clone selection and by his typical highly attentive observations of the growing plants in the field and removing the diseased individuals, he soon reached most healthy seed potatoes, for example from the famous clone cultivar "Industrie". Soon, indeed, the sales of these clone selections, such as "Lembkes Industrie", were able to support his breeding of the other crops, such as rapeseed in times of low demands, when foreign tropical plant oils flooded the domestic markets.

The fact of Lembkes potato selections reminds me that although very modest in the extent and expenses of his breeding programmes and most traditional in his methods, Lembke was highly aware of every progress ongoing in his days in scientific knowledge and modern techniques, which he applied diligently and consequent, if this appeared advantageous to him. For example, in starting with cross breeding of potato, he as one of the first, who applied cancer resistant parents, and later he extensively utilized wild potato materials available from the Biologische Reichsanstalt in Berlin to develop virus resistant clone cultivars. And again, although using the necessary analytical screening methods, his prime success resulted from his absolute accuracy in the agronomical handling of his nurseries and the meticulous attentiveness and precision of his observations on the growing breeding materials in the nurseries during the season.

Hans Lembke was exemplary not only in his breeding. After he had obtained from his father the full responsibility for the family estate in 1905, he set out to develop the same into a model seed farm, which by stepwise land acquisition from neighbouring peasants finally arrived at a size of 332 ha. In 1922 he took lease of the state farm Christinenfeld comprising 540 ha, which allowed him above all to locally separate breeding programs of species easily outcrossing with each other. In 1935 for his seed potato production, he in addition bought an estate with 260 ha in Neubuslar, in Eastern Pomerania, this region being known for its low aphid infestation and thus low virus contamination.

After World War II all propriety of Hans Lembke was expropriated without compensation. But his high professional expertise and his earlier political independence had not remained unknown to the new authorities and since the economic situation at those days was disastrous and every competent man urgently needed, Lembke was asked by the Soviet administration to retain the command over his former propriety now in an employee status. So he at an age of 68 was put in charge of the "People's owned seed farm" in Malchow, the management of which he continued for another 14 years with utmost personal engagement and a remarkable economic success. You can imagine that such service to his former employees and to his beloved suffering people received general recognition and high public attention. Visits to Malchow and field demonstrations by Hans Lembke belong to the most memorable impressions, which in particular crowds of young folks and students experienced during the fifties, until Lembke retired in 1959 eighty two years old.

To the Lembke family the loss of all propriety in 1945 at first glance meant the obvious end of the breeding tradition. But when the eldest son of Hans Lembke, named Hans Georg, was dismissed from war service, he turned into the Western Occupation Zone, where some bree-

ding materials of Lembke was still held by certain stations and farms for tests and multiplications. With these and additional seed accessions smuggled through the boarderline from Malchow, Hans Georg started seed propagation of his fathers rapeseed, grass and potato cultivars on leased fields. Already in 1946, he founded the Norddeutsche Pflanzenzucht in Kiel. But only after endless troubles and repeated set-backs he and his wife, Mrs. Helene Lembke, finally succeeded in 1952 to buy the farm Hohenlieth, where they could establish new breeding activities and seed business on own grounds. However, further economic misfortune in the following years corroded the health of Hans Georg Lembke, so that he passed away in 1965, when only 53 years old. He left his widow Helene alone with 6 children and it was she who now had to decide on continuation or ending of this company. Alike Hans Lembke, her vote was in favour of the family tradition and she accepted full responsibility for the enterprise and continuation of the breeding programs. By her unusual personal readiness and with the loyal assistance of Dr. Benno Leitzke as her managing breeder and her son in law, Dietrich Brauer, the NPZ slowly recovered from its depression and steadily grew up with the rising rapeseed season into the status, which it now has 50 years after its foundation.

In Malchow, after the retirement of Hans Lembke in 1959 and his change of dwelling to Rostock and after a short interim period, his former coworker Heinrich Baudis took over the management of the farm estate and the continuation of the breeding programs. Under the competent and prudent leadership of Baudis, the breeding station developed most successfully into a research "Institute of Oil- and Forage Crops", and it was Baudis to insist against the authorities on adding the name "Hans Lembke" as a conotation to the Institute's designation. Since 1970, this institute conducted most intensive breeding research with at the end a total of 300 coworkers and Professor Werner Schweiger as its scientific director. A new laboratory building was built, which you will have recognized when incoming right of the estate entrance. But the practical breeding work remained in the hands of Heinz Baudis and a great number of the former Lembkes coworkers, like Mr. Winkelmann, the couple Drs. Gaue and others. More than 30 cultivars of the various treated crop species were licenced during this period as the result of selection work conducted much in the mode and tradition of Hans Lembke.

With the end of the German Democratic Republic and the reunification of Germany, a new chapter in the history of Lembke breeding was opened, which finally allowed the family to reestablish activities at their ancestral seat. Already in 1988 the NPZ and the Malchow institute had agreed upon details of joint research and development in hybrid breeding of winterrape and corresponding work was started in 1989. On this basis, already in 1990 a treaty of cooperation in economic and breeding matters could be signed between Hohenlieth and Malchow. But the further quick changes and the following rearrangement of public agricultural research in the reunified Germany did not secure the continuation of a scientific institute in Malchow. The NPZ, on the other hand, had filed an application to the responsible trust authority at the earliest date proclaimed for the repurchase of the breeding enterprise, which formerly had belonged to Hans Lembke. This document finally could be signed on January 10, 1992. With it a selected and particularly qualified group out of the former staff of the Malchow institute was recruited, who guaranteed for the continuity of the breeding materials and programs into the new NPZ branch station. Notably, this change was supported by the extremely sensitive and most conducive advice of Mr. Baudis, the former director of the institute, who, indeed, thereby proved the unbroken heritage of the noble spirit of Hans Lembke maintained at his place in Malchow.

At last, also the farmstead Malchow with 330 ha could be purchased by the NPZ mainly for purposes of propagation of early breeding lines and basic seed materials. Altogether, the footprints of history have not been extinguished, thereby, in the 100 years of Lembke breeding. But the recent developments have opened the door into a new century, in which the Lembke heri-

tage can be freely maintained according to the motives and standards of Lembke and by his descendants and coworkers, to everyone of whom the attitude of his personality is inevitably imprinted by the dominating Lembke atmosphere.

Hospitality has been one typical component of this Lembke tradition and I think, no one can quantify the number of guests, who were received and accommodated in these very rooms first by Hans Lembke. Let us join in with all these visitors by thanking for this invitation, by congratulation to the centennial of the NPZ in the delight of today and with our most sincere wishes for further successful breeding work and a fortunate future of the Lembke family and the Lembke company.