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Association for Breeding Research and Crop Maintenance
Based on Biodynamic Principles

Breeding Biography of a Biodynamic Variety

Updated: 15/02/2017



Sweet Corn

MEZDI

German Plant Variety Registry Code:
MZ 414

Breeder:

**Friedemann EBNER,
Amadeus ZSCHUNKE**

Variety Description:

MEZDI sweet corn is one of the world's first open-pollinated population varieties of "extra-sweet yellow" type. Together with the sister early varieties DAMAUN (early) and TRAMUNT (late), it complements the well-known yellow sweet corn GOLDEN BANTAM as a commercially fit variety for the professional gardener. In contrast to the normal-sweet varieties, whose cobs must be daily fresh harvested and consumed as soon as possible, these new population varieties remain commercially viable for at least 10 days in cool storage like the commercial extra-sweet hybrids. The names of the varieties refer to the Rhaeto Romanic names for morning, midday, and sunset. Sowing these three varieties together from mid-April to mid-July every 10-14 days provides a continuous harvest from mid-July up to the first frosts.

MEZDI'S early growth is fast and vigorous and allows for pronounced hilling and weed maintenance. The stability of the plant is very good. Maturity is reached in about 90-100 days. The harvest period from the first to last harvestable cobs is a few days longer than with hybrids, so it requires an additional harvest. It is therefore less suitable as a single-harvest crop. In sweetness and aroma, these population varieties are at least equal to the hybrids; many consumers consider them superior even. Storage stability, important for marketing, is equivalent to hybrids.

Breeding History:

Only hybrids were available at the time as original breeding stock of this extra-sweet population variety, since the natural mutation "extra-sweet" (genotype sh2) discovered in the USA in 1960 was sold only in the form of hybrids. In the first year of breeding in 2004, 40 varieties of yellow hybrid varieties were bought that were available from European importers as well as US retailers; they were tested to be GMO free, cultivated and selfed. Over the next three years during a period of two weeks all cobs were isolated

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and then pollinated with positively assessed plants (positive mass selection with directed pollination through “artificial” pollen clouds).

In 2008, the many hundred single lines were grouped into three harvest maturity groups. These three groups were then spatially isolated from one another and led to the three, now stable, population varieties with their respective harvest periods. From the emergence up to the end of the cob flowering, negative mass selection was carried out by culling weak, unstable, high-tillered, and from plants with too much, too high, or too low cob insertions. Narrowing of the flowering period was achieved by culling the first 10-20% of early-flowering plants, and then after a week of allowing flowering, the plants that had not yet flowered thereafter were also culled.

Shortly before seed maturity, approximately 1000 cobs at a determined similar height were harvested by hand, husked and after drying, reduced to about 100-200 stock cobs. This harvest provides the stock seed for the next cycle.

During the entire selection process, certain irrelevant features relating to cultivability were deliberately not selected for, such as plant height, leaf width, number, angle, and bending of the tassel feathering, since in inbreeding sensitive species, such selection in a limited crop stand size is always costly for yield. With this variety and the two others, there is now for the first time a choice between hybrid and non-hybrid varieties. The seed is also recognized organically produced and guaranteed to be GMO-free. Breeding took place continuously on the biodynamically stewarded land of Sativa Rheinau.

Registration of MEZDI was formally approved as an “amateur variety” in 2012, since the state trials for approval test for some “compulsory features”, such as the tassel form, lacked uniformity. The cultivability is not affected by these morphological irregularities.

Breeding, maintenance breeding and seed production take place by F. Ebner at Sativa Rheinau (Switzerland). The Bingenheimer Saatgut AG commercializes the seed in Germany, the Sativa Rheinau AG company in Switzerland and France and in Austria by Reinsaat.