

## **MARKED INCREASE OF GLOBULIN-1S IN SEEDS OF THE ITALIAN PURPLE MAIZE (ZEA MAYS) MORADYN VARIETY**

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Maize seed proteins are mainly constituted by the endosperm-located zein prolamins, which are rich in sulfur amino acids but poor in lysine and tryptophan. However, maize embryo accumulates significant amounts of storage globulins, which are usually the major storage proteins in dicotyledons. Prolamins accumulate in endoplasmic reticulum-derived protein bodies, whereas globulins accumulate in storage vacuoles.

Searching for maize varieties with lower content of the allergenic gamma zeins, we have found that Moradyn purple maize has lower content of 27kD gamma-zein and apparently very low content of 50 kD gamma-zein.

In a protein body subcellular fraction from Moradyn seeds, we found unusually high amounts of globulin-1S, which is known as a maize embryo vacuolar storage protein and contains almost 4% lysine. Rebalancing of protein content is known to increase embryo storage proteins in maize lines with lower amounts of zeins, but the co-purification of globulin-1S with protein bodies calls for further investigation on the subcellular destiny of this protein in Moradyn seeds.