

HIGH CAROTENOID MAIZE

License Status:

Materials available for license

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Description:

Guelph researchers have developed a series of maize inbred lines with high carotenoid content in the kernels. These inbred lines are adapted to short-season environments.

Carotenoids are a large group of yellow-red pigments synthesized by all plants. Animals, unlike plants, are not able to synthesize carotenoids on their own; rather carotenoids are acquired through their diet, primarily through fruits and vegetables. The interest in dietary carotenoids comes from their anti-oxidant properties and the association between carotenoid deficiencies and many chronic human diseases.

Researchers have increased the basal level of two carotenoids - lutein and zeaxanthin. These carotenoids were targeted because of their importance in prevention of age-related macular degeneration (ARMD). ARMD is a condition that affects the center of the field of vision and the ability to see fine detail. Diets rich in lutein and zeaxanthin, are one of the options currently available to delay the onset of ARMD.

Advantages:

- Carotenoid levels 2-3 fold higher than conventional corn lines.
- Higher levels of lutein and zeaxanthin than conventional lines.
- Not transgenic.
- Lines are adapted for use in Ontario and similar climate regions.

Potential Markets:

- Development of high-carotenoid varieties of maize for short-season and other climatic regions.

Status:

- Inbred lines adapted to Ontario are available for licensing for commercial production. These license arrangements can be exclusive.
- Inbred lines are available for breeding and creation of new maize varieties. These licensing arrangements are non-exclusive.