CR+ Management Goal: **GREEN LEAVES UNTIL HARVEST** – An integrated management concept for Cercospora control in sugarbeet

79th IIRB Congress, 27-28 February 2024, Brussels (B)
H. Ebmeyer[1], H. Keunecke[1] & E. Neu[1]
[1]KWS SAAT SE & Co. KGaA, Grimsehlstr. 31, 37574 Einbeck

SEEDING THE FUTURE SINCE 1856

Introduction

Facing the spread of fungicide resistance and a decreasing number of available fungicides, strong varieties with resistance traits become the most important element of Cercospora control.

CR+ varieties offer a high level of Cercospora protection combined with high yield performance. Even if the CR+ protection is based on different sources of protection (Fig. 1), it is not immune. Moreover, *Cercospora beticola*, has already shown to reduce the efficacy of fungicides. Therefore, integrated Cercospora management practices are essential for long-term Cercospora control.

Integrated Cercospora Management

The Integrated Cercospora Management (ICM) approach (Fig. 2) aims to combine different measures for comprehensive Cercospora control. The following measures are part of the ICM strategy:

Variety

- Planting varieties with high genetic level of Cercospora protection, e.g. CR+ varieties.
- CR+ protection is based on different sources: the broad genetic base leads to this increased effectiveness of Cercospora protection.

Disease Monitoring

- Monitoring of disease onset and development is essential to ensure timely application of fungicides.
- Thresholds and warning systems support growers in the decision to start (chemical) control measures.

Fungicide Application

- Timely application of fungicide when thresholds are reached.
- Right timing, but also the application practice (weather conditions during application, sufficient water amount, speed and nozzles) can influence the effectiveness of the crop protection measure.
- Combination and rotation of different fungicide active ingredients are important to maintain the effectiveness of fungicides and avoid fungicide resistances.

Cultural Measures

- Crop rotation and soil tillage support the decomposition of infected plant material and are expected to lower the build-up of Cercospora inoculum in the soil.

Inoculum control with CR+

The high level of Cercospora protection of CR+ reduces the initial Cercospora infestation (Fig. 3). Due to that, there is less pressure on the remaining fungicides. The combination of CR+ with timely and proper applied fungicides enables farmers to keep the canopy healthy until harvest.

As a consequence, less infected leaf material remain as Cercospora inoculum in the soil after harvest. The Cercospora inoculum can be the starting point for new infections in following years. A reduction of inoculum load over time is expected to delay adaptation processes within the Cercospora population and thus to protect the remaining fungicides. Likewise, it also helps to support the durability of CR+. Therefore, growers are asked to respect the **CR+ Management Goal: GREEN LEAVES UNTIL HARVEST** which is intended to reduce the Cercospora inoculum level.

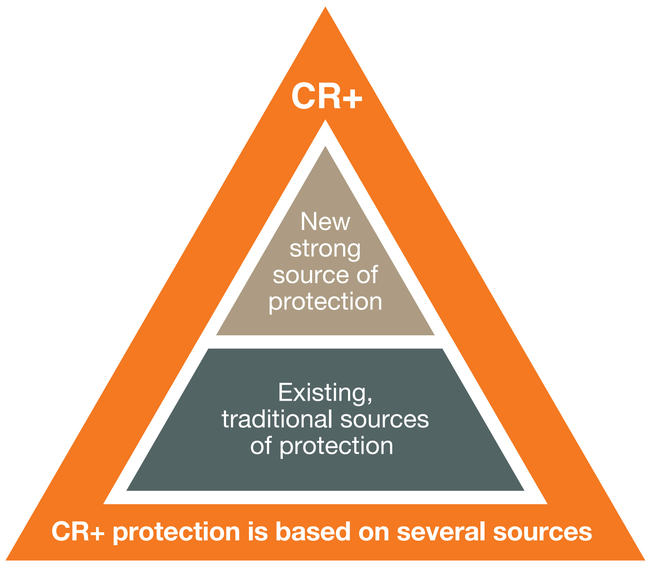

Fig. 1: Composition of the CR+ Trait: Combination of new, strong and traditional sources of protection. This combination of several different sources provides the "CR+ trait" with high Cercospora protection.

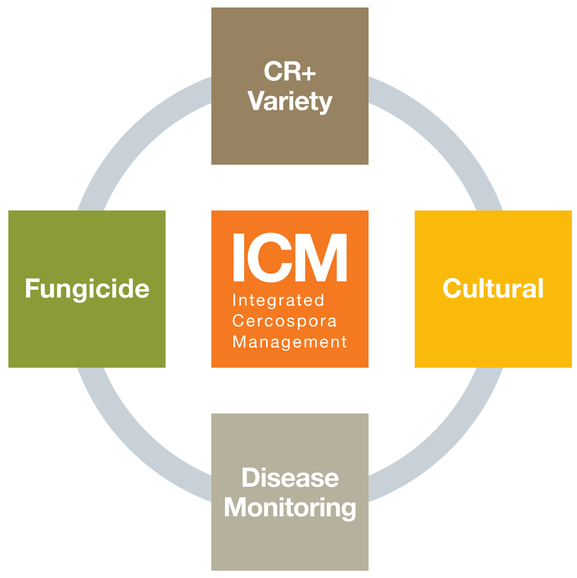

Fig. 2: Elements of Integrated Cercospora Management (ICM)

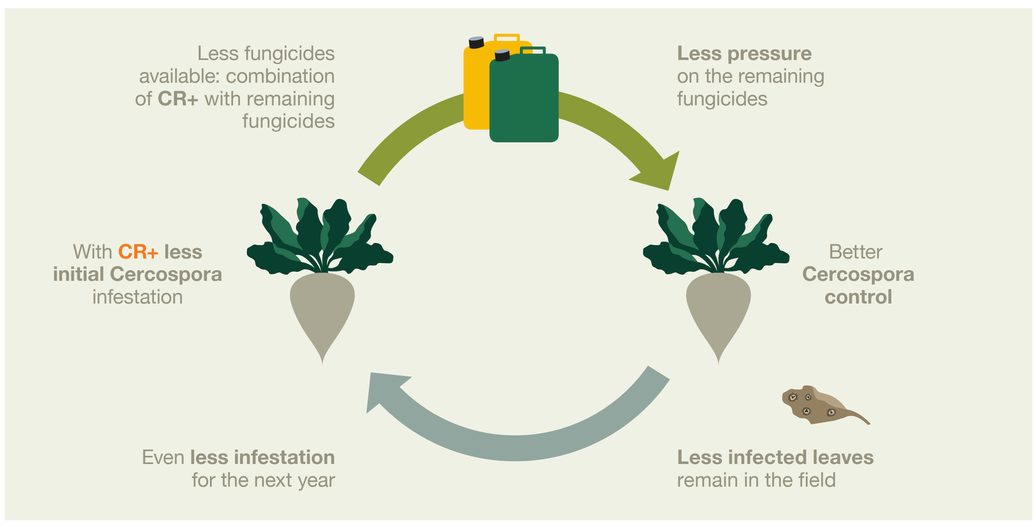

Fig. 3: Cycle of Cercospora inoculum control with a combination of CR+ and fungicide

Conclusion/Outlook

The **CR+ Management Goal: GREEN LEAVES UNTIL HARVEST** means to use all available measures in an Integrated Cercospora Management approach to keep the sugarbeet canopy healthy until harvest. This approach enable maximum productivity of the crop. In the long run it is even more important that this can reduce the build-up of Cercospora inoculum in the soil due to infected leaf material remaining in the field after harvest. A reduction of inoculum load over time is expected to delay adaptation processes within the Cercospora population and thus to protect the remaining fungicides. Likewise, it also helps to support the durability of CR+.

www.kws.com

Dr. Henning Ebmeyer | KWS SAAT SE & Co. KGaA
henning.ebmeyer@kws.com