

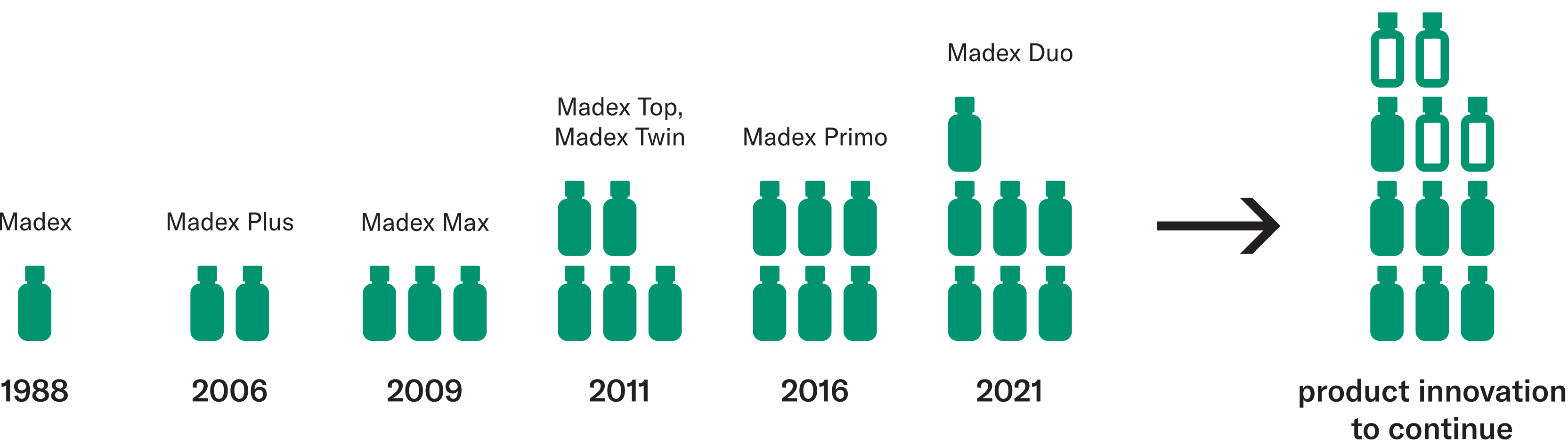


Madex[®] products continue to overcome resistance of *Cydia pomonella* toward *Cydia pomonella* granulovirus

Worldwide pome fruit production relies on baculovirus products based on *Cydia pomonella* granulovirus (CpGV) which enable environmentally friendly control of *Cydia pomonella*.

In 2005 first resistance toward the CpGV-M isolate was detected (Asser-Kaiser et al., 2007)¹. Thanks to extensive research efforts and a deeper understanding of the underlying mechanisms of CpGV resistance, novel isolates have been developed to ensure the continued production of healthy fruit. Through close monitoring of field efficacy, Andermatt Biocontrol Suisse ensures early detection of any challenges with these isolates and the inhouse Research and Development remains dedicated to developing innovative solutions.

Continuously providing solutions for sustainable CpGV use



Worldwide monitoring ensures early detection of new resistance types

- By 2017 three types of CpGV resistance had been described (Sauer et al., 2017)²
- Andermatt Biocontrol Suisse conducts resistance monitoring projects worldwide to detect any new resistance types in *C. pomonella* populations.

Good efficacy of Madex[®] Top, Madex[®] Primo and Madex[®] Duo in field populations

- From 2020–2025 over 30 populations from key markets have been reared and tested for CpGV efficacy in bioassays
- Madex Top, Madex Primo and Madex Duo overcome CpGV resistance in the field

Decreased control can have other causes than resistance



- Bioassays show normal activity of Madex Top from a site with high *C. pomonella* damage
- Low field efficacy can be related to other reasons besides resistance: Timing of application, spray coverage, product storage and tankmix compatibility need to be checked for optimal control

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¹ Asser-Kaiser, S., et al. "Rapid emergence of baculovirus resistance in codling moth due to dominant, sex-linked inheritance." Science, vol. 317, no. 5846, 2007, pp. 1916-1918.

² Sauer, A. J. et al. "A Third Type of Resistance to *Cydia pomonella* Granulovirus in Codling Moths Shows a Mixed Z-Linked and Autosomal Inheritance Pattern." Applied and environmental microbiology vol. 83, 17 e01036-17, 2017.



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