

Brevis™ SC

Global Experiences in Mixtures

Introduction

Since the introduction in the EU in 2015, Brevis™ SC was recommended as a single solution for fruit thinning to be applied under optimal conditions. This is still the approach when the product is launched in the USA in 2025. After some years of experience as a single solution, advisors and growers started tests with Brevis SC in mixtures with commonly used synthetic crop protection products in apples and pears. Based on global practical experiences, this whitepaper will explain what can be mixed with Brevis SC and what is the minimal interval that is required for some mix partners. Most of the results have come from testing the solid SG formulation.

Other fruit thinning compounds and growth regulators

As a bottom line, Brevis SC can do the thinning job on its own. Combining Brevis SC with other fruit thinners includes a risk of overthinning. Below is a list of commonly used chemical thinners and observations from mixture tests.

6BA: In some experiments (BE Conference 2010, 2020, 2021, Braeburn 2019 – RS Fuji 2018), combining the ‘thinning’ rate of 6BA with Brevis SC caused a strong overthinning. When 6BA was applied at half of the rate to improve fruit size, combinations with Brevis SC under practical conditions demonstrated to be safe.

NAA: Another hormone that is not recommended to be mixed with Brevis SC. In the US, three experiments showed this combination was more aggressive (Michigan Gala 2015, 2017, 2019).

NAAm: Extreme phytotoxic response can be the result of a mixture with this hormone (thesis Dr Dirk Kopke Hannover 2005). In practice, this combination does not make sense as the optimal timings for both components are different.

Ethylene: In one experiment (FR Jules Guyot 2013), this combination improved the thinning effect. In practice, there have been several cases of overthinning in pears when Brevis SC was applied some days after ethylene. As this hormone is strongly influenced by temperature, it is a difficult product to combine with Brevis SC in both apples and pears.

Written by: Ton Besseling
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Lime Sulfur: No trials were conducted in combination with Brevis SC. Like NAAM, this mixture does not make sense as the optimal timing of both components are different.

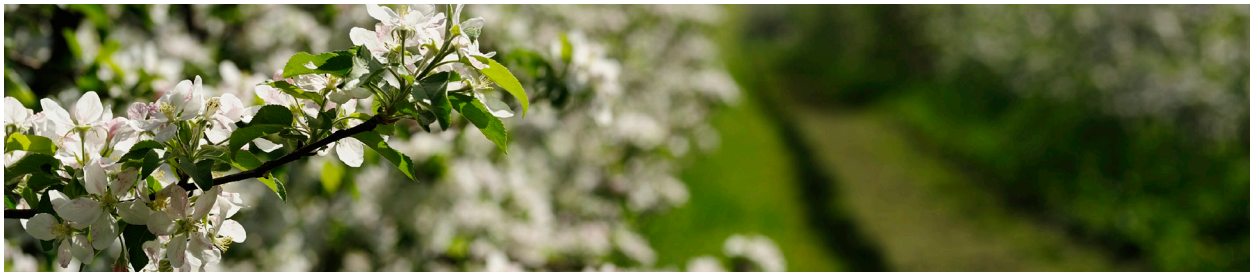
ATS: No trials were conducted in combination with Brevis SC. In general, this mixture combo do not make sense as the optimal application timing of both components is different.

Carbaryl: Brevis SC in combination with carbaryl can cause a strong thinning effect (Wanachee Jonagold 2015, Simcoe 2025). However, in some countries, the future of carbaryl is very uncertain. This makes this product less interesting to use in mixtures or as an alternative.

ACC: This is a new compound and no trials have been conducted in combination with Brevis SC

Prohexadione: A broadly used plant growth regulator in apples and pears. The product is applied during thinning activity, so it's important to know how to use it in relation to Brevis SC. The aim of a PGR is mainly to reduce shoot growth and hormonal production that indirectly reduces carbohydrate production (sink). A lower sugar production in the shoots leads to less competition between shoots and fruits in the cluster. Thinning becomes more difficult. Our advice is to keep an interval of 5 days between applications and not to mix these products. Depending on the rates and number of applications of prohexadione, you may consider increasing the rate of Brevis SC by 25%.

GA4+7: As solo application or in combination with 6BA, early applications can have a positive effect on fruit set, especially in pears. Mixing is not a relevant option as treatments are at different timings. In experiments in pears (NL Conference 2022, 2024), the application of GA4+7 solo or in mix with 6BA stimulated fruit set. This application is conducted when trees have low number of flower clusters (off-year) or after frost. Especially after frost, fruits may have low number or no pits (parthenocarp) and need to be thinned to avoid too many small fruits. In this case a strong thinner like Brevis SC is the best solution.



Brevis in Strategy

A famous strategy is the combination of an early thinner just before or during flowering (NAAM, Lime sulfur, ATS) followed by a fruitlet thinner. An early thinning has a positive effect on flower induction for the following year but in most cases, this early thinning is not good enough to reach the target number of fruits at harvest.

Fruitlet thinning (or secondary thinning) can start when fruits are set, just after petal fall. Fruit size is between 4-6 mm and the two options are carbaryl and Brevis SC. It is also possible to start later when fruit size is between 8-12 mm, with Brevis SC, 6BA (+NAA) as another option. When fruit size is bigger than 14 mm the strongest solution is Brevis SC. Even as a rescue application at 18-20 mm, under optimal conditions, Brevis SC is the best option.

The right strategy is dependent on the history of the orchard and the variety (difficulty of thinning/ level

of alternation). A possible thinning strategy, in a year without risk of early frost, is to start with a flower thinner. In regions like Western US, carbaryl is applied just after petal fall. Growers that want to keep this timing can change to Brevis SC as the best option to replace carbaryl.

In fruit regions where carbaryl is banned, flower thinning can be followed by a hormone like 6BA (+NAA) at 8-10 mm. When daytime temperatures are below 20°C the best option is Brevis SC.

When hormones were first applied at 8-10 mm and fruits are now between 14-18 mm, a Brevis SC application will finish the job. When only Brevis SC was applied at 8-10 mm and stronger thinning is needed, a second application of Brevis SC can be considered.

Brevis SC in Mixture with Fungicides, Insecticides or Fertilizers

Around the thinning period, growers must apply many different products to control pests and diseases. Also, foliar nutrition becomes relevant in the period between flowering and June drop. Mixtures in general are not recommended, but can be considered when using protectants against apple scab.

Most of the experience comes from Brevis SC in a tankmix with **Merpan** (captan), a key product proved to be safe to use. A recent trial from 2025 (NL) in Xenia pears with 2 applications in 2.2 kg/ha with and without captan did not show any difference.

Another important contact fungicide is **folpet**. Closely connected to captan, no problems are to be expected in mixture with Brevis SC.

Brevis SC in mixture with **Merplus** (captan+fosfanate) had no impact on level of thinning in a trial on Braeburn 2018 (DE).

In some lab studies with **EC formulations**, we saw a higher photosynthesis inhibition when combined with Brevis SC. Apply these products at least 2-3 days before or after Brevis SC.

In a trial from 2015 (NZ) on Envy apples, Brevis SC mixtures with **Talendo** (proquinazid)+**Polyram**, **Sercadis** (fluxapyroxad) and **Altacor** (chlorantraniliprole) had no effect on levels of thinning compared to Brevis SC solo.

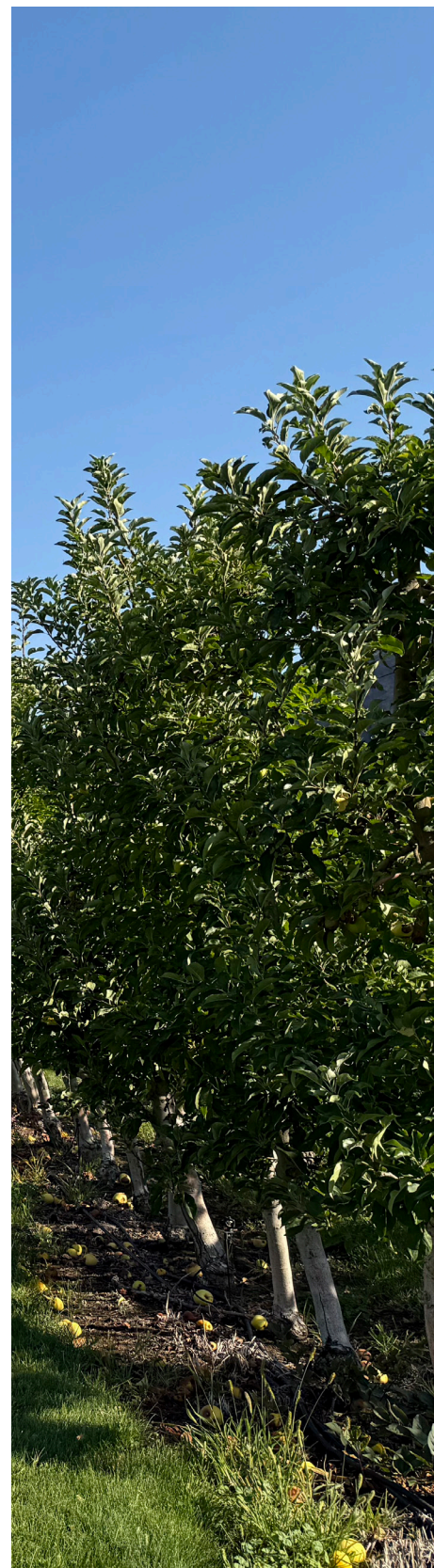
Combinations with **SDHI-based** fungicides could interact and should be avoided, keeping an interval of 1 day.

In a trial on Gala apples in 2017 (AUS), **Vertimec**+oil was applied 4 days before, in the mixture and 4 days after Brevis SC. The first application increased thinning by 16%. The mixture increased thinning by 30%, and the 4 days after by 3%. Keep an interval of minimal 5 days between the products and do not combine.

The same is applicable for products based on oily formulations like **Movento** (spirotetramat) and **Fontelis** (penthiopyrad). The oil in the formulation will improve the uptake and may lead to a more aggressive thinning result. It is advised to keep an interval of 2-3 days between them.

In an experiment on Elstar apples from 2014 (NL), 2 application of Brevis SC in 2.2 kg/ha combined with captan+Urea+MgSO₄ demonstrated 5% less efficacy but still sufficient (42% thinning compared to hand-thinning 40%).

Expertgrow is a product based on seaweed and experiments in 2020 (BR) in Fuji and Gala when Expertgrow (0.5L/ha) was applied 3 times after Brevis SC, had no impact on the final fruit set. Another trial on **Elstar** from 2013 (NL) when those products were mixed showed no effect.



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General Recommendations About Mixtures

Fruit growers are used to combining crop protection products and are aware that some products are just not compatible. The results can be clogging in the tank and blocking of the nozzles. To avoid these issues, it is recommended to test a premix in a bucket to see if the products are compatible. In the previously mentioned experiments with tank mixtures with Brevis SC, no problems occurred.

The sequence of mixing formulations is WP > WDG > SC > EC > fertilizers. Use a bucket to mix the products. Fill the tank of the sprayer 1/3 of the way with clean water. Start the rudder and add the contents of the bucket into the water. Always use a sieve in the tank opening. Fill the tank to the desired water level and keep the rudder working.

Check the nozzles frequently during spraying.



Conclusions

- Combining Brevis SC with other fruit thinners includes a risk of overthinning. This can be avoided by applying Brevis SC alone or in a strategy with other products (alternation).
- Do not combine Brevis SC and oily formulations. Keep a minimal interval of 1-5 days between applications depending on the product (check for the products in this document).
- Brevis SC can be safely mixed with captan.
- Follow the Good Agricultural Practices for mixing crop protection products and fertilizers.



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