smartblock®

EFFECTIVE AND SUSTAINABLE SPROUT CONTROL IN POTATOES

WHAT IS SMARTBLOCK®?

SmartBlock® is a naturally occurring substance that has been found to be extremely effective in controlling sprouts in stored potatoes. SmartBlock has a unique mode of action that actively burns off sprouts and restores dormancy to tubers.

NEW CHEMISTRY

SmartBlock contains 98% pure 3-decen-2-one as the active ingredient. This active ingredient, patented by Washington State University, is part of a wider group of compounds shown to exhibit excellent sprout control activity.* SmartBlock provides the best overall performance among this group.

NATURAL

- **The active ingredient is a naturally occurring molecule commonly found in many foods such as yogurt, fermented soy, ham, tuna, mushrooms and other foods and spices.**
- **It is approved for use as a direct food additive in foods such as beverages and baked goods in many parts of the world including Europe, North America and Japan.**
- **SmartBlock is synthesized but identical to the natural substance.**

EFFECTIVE

- **In extensive tests conducted around the world, SmartBlock has been found to be highly efficacious for providing excellent sprout control on many potato varieties.**
- **Works under varied storage conditions.**
- **Ideal for short- and long-term potato sprout control.**

UNIQUE MODE OF ACTION

- **Acts exclusively on the rapidly growing meristematic sprout tissue.**
- **Soon after treatment, tuber respiration increases, which rapidly metabolizes reducing sugars. SmartBlock restores fry color and dormancy to potatoes.**
- **Within 1 to 4 days post-treatment, small to medium sprouts present a burned-out appearance. Longer sprouts (up to 1 inch) may take 7 to 10 days to fully blacken.**
- **SmartBlock is metabolized into other naturally and widely occurring compounds.**

* Covered by SmartBlock patent numbers 6,855,669, 8,258,081 and 8,999,419.

UNIQUE PROPERTIES

Versatile

Works as an effective rescue treatment, controlling sprouts up to one inch.

Primary breakdown products (2-decanol and 2-decanone) also have very good sprout control activity.*

Exempt from tolerances (no MRL) in the USA, Canada, Israel and pending in Europe.

Broad flexibility for timing of application. Unlike chlorpropham (CIPC), prophylactic applications are not needed.

Apply only when dormancy is broken, effectively leveraging the natural dormancy of potatoes.

Can suppress certain diseases in storage.

High vapor pressure ensures good penetration inside potato piles and boxes. SmartBlock has the highest vapor pressure among all registered sprout suppressants.

Safe to store seed potatoes in storages where SmartBlock was applied the previous season. (Do not use directly on seed potatoes.)

Storages treated with SmartBlock have a distinct smell, which rapidly dissipates and does not taint fresh or processing potatoes.

Well-Suited for Combination Programs

SmartBlock enhances overall activity when mixed with other sprout control agents.

Can be fully integrated with existing sprout control programs with CIPC or maleic hydrazide (MH).

Enhances and maximizes low-rate CIPC sprout control programs.*

Distributes CIPC more evenly throughout the pile with its superior vapor action.

Re-solubilizes CIPC particles inside plenums, fans and ducts for easy post-treatment cleanup.

Enhances Potato Quality

Treated tubers exhibit enhanced turgidity for better storage and reduced pressure bruising.

Improves overall potato quality and pack-out (patent pending).

Does not affect taste.

Has been shown to improve fry color.

Improves shelf life.

Provides an excellent long-term sprout control solution for fresh market and processing potatoes.

USE RATE

Use up to 4.2 fl oz per ton of potatoes. Low-rate mixtures with CIPC can enhance overall efficacy. Please refer to the SmartBlock label for complete rate recommendations.

APPLICATION TIMING

- **Treat when approximately 75% of tubers show first signs of sprouting (peeping) or signs of dormancy break. Ideally, sprouts should be less than 0.25 inch at the time of treatment.**
- **Repeat treatment when re-sprouting occurs.**
- **Maintain a minimum reapplication interval of 7 days.**
- **Do not apply more than 16.8 fl oz/ton of potatoes per storage season.**

Generally, when fresh-pack potatoes are stored at 40–43 °F, one application will be adequate for 6–7 months storage. When tubers are stored at 46 °F or higher, for medium to short dormancy varieties, around 2–3 months of sprout control can be expected.

RESCUE TREATMENT

SmartBlock is the only product that can effectively control large sprouts (up to 1 inch). Use SmartBlock at the rate up to 4.2 fl oz per ton. Do not store beyond 30 days after treatment.

APPLICATION

SmartBlock should be applied only by a qualified applicator. Ensure the ventilation system is working properly to provide uniform distribution of the vapor inside the storage. Do not treat when stores or potatoes are damp with excessive moisture and exhibit visible condensation. Always pre-test on new or sensitive varieties prior to SmartBlock use.

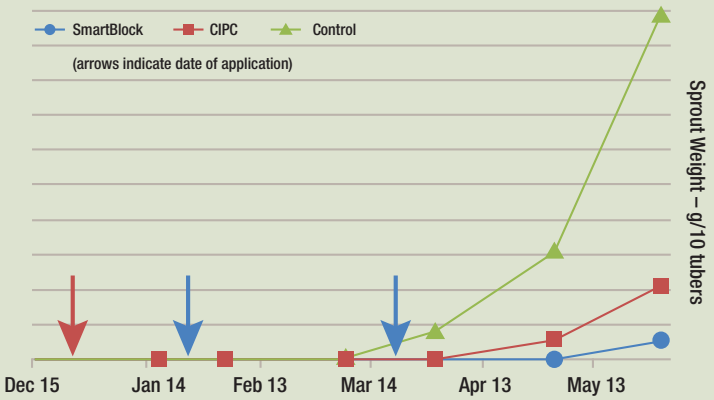
Photo courtesy of Dr. Lisa Knowles, Washington State University

SmartBlock — treated vs. untreated potatoes

SmartBlock vapor coming through potato pile

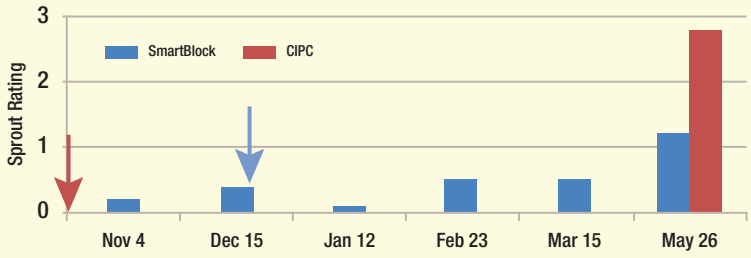
SmartBlock-treated potatoes

EFFICACY OF SMARTBLOCK® AND CIPC FOR SPROUT CONTROL ON RUSSET BURBANK POTATOES



Dr. Barbara Daniels-Lake, Canada 2011. Potatoes were stored at 48.2 °F (9 °C). SmartBlock was applied at 4.2 oz/ton twice and CIPC was applied once at 22 g/ton. Arrows indicate the treatment dates. Trial No. 11-IR-AMV1018-07

LONG-TERM SPROUT CONTROL WITH SMARTBLOCK® AND CIPC ON GOLD RUSH POTATOES



no sprout	peep – 1 mm	1 – 5 mm	> 5 mm
0	1	2	3

Dr. A.J. Bussan, University of Wisconsin 2009. One application of SmartBlock at 4.2 oz/ton and CIPC at 22 g/ton were made as indicated by the arrows. Potatoes were stored at 39.0 °F (3.9 °C). Trial No. 09-WI-AMV1018-06

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