Salibro®

Reklemel® active

NEMATICIDE

# Technical Guide for Root and Tuber Vegetables

## What is Salibro® Reklemel® active nematicide?

Salibro is a novel, non-fumigant, chemical nematicide discovered and developed by Corteva Agriscience. It is the first sulfonamide nematicide, a chemical group different to all other commercially available nematicides and provides highly effective Root-knot nematode control in a wide range of crops.

## How does Salibro work?

Salibro has rapid knock down activity on Root-knot nematodes. Within hours of treatment, the co-ordination of nematodes that are exposed to Salibro is impacted and they will show reduced mobility in the soil and have a decreased ability to locate and infect plant roots. Once affected, nematodes do not recover because symptoms are irreversible and nematodes die within 2-3 days.

Salibro does not have ovicidal effects. However, once juveniles hatch, move in soil water in pore spaces and come into contact with Salibro, they are controlled.

Root-knot nematodes hatching from exposed eggs suffer a fitness penalty and are less able to move and infect plant roots.

Salibro is not considered to be systemic, it shows limited plant root uptake and will not control nematode infestations already established in the roots of a plant.

## Soil mobility

Salibro is not prone to leaching through the soil profile regardless of soil type.

## Crop safety

Extensive Australian trials conducted with Salibro since 2013, show that Salibro applied at 2 times the label rate has no negative impact on root and tuber vegetables vigour or establishment.

## IPM and use with beneficial organisms

Salibro has negligible impact on all beneficial soil organisms including fungi, bacteria and free living "good" nematodes. It can be used in conjunction with biological soil additives designed to improve the health of the soil, these includes organisms such as *Pseudomonas* spp, *Bacillus* spp, and *Beauvaria* spp.

This makes Salibro an ideal foundation tool for practicing IPM control strategies for Root-knot nematode.

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## Flexibility of use

Salibro has a number of unique features which give growers flexibility in many of the choices they make to manage nematodes in their crops.

**Crop rotation flexibility** – Salibro treated fields have no re-cropping interval to any following crop.

**No harvest WHP's** – Salibro has no withholding period for any root and tuber vegetable crop when applied according to label directions.

**No grazing WHP's** – Salibro has no animal grazing withholding periods.

It should be noted that not all export destinations will have established MRLs or import tolerances for Salibro. PRIOR to applying Salibro, growers should consult either their exporter or Corteva Agriscience for guidance on their chosen market.

**Low use rate** – Salibro has a low use rate of 4 L/ha per year which means less transport, handling, mixing and storage of product.

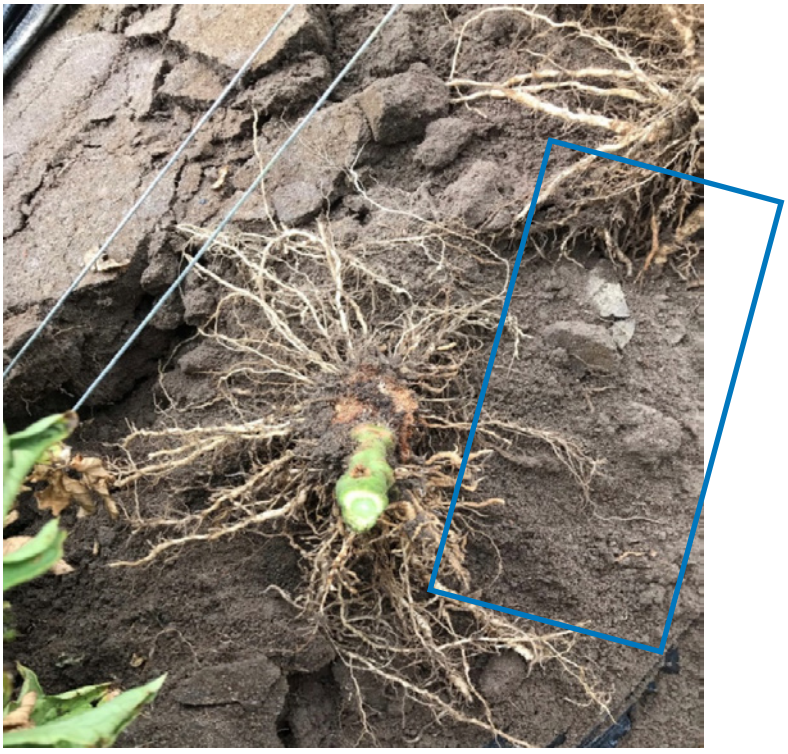
## Application guidance

**Always read the label prior to using Salibro. This technical document does not replace the label.**

Salibro should be applied prior to planting the crop as either a bed spray that is incorporated mechanically or with irrigation. It can also be applied as an in-furrow treatment.

When applied as a bed spray the water rate should be a minimum of 150 L of water per hectare. Salibro can be effectively moved up to 20 cm in the soil with approximately 25 mm or more of irrigation from overhead sprinklers. It is critical that the product is moved to the area of the bed where tubers will develop and need protection from nematode damage. Salibro is not systemic. Best root protection will be achieved if the root width is treated and Salibro is incorporated to depth roots will grow to. If incorporation is not adequate the plant can grow out of the protected soil zone which will result in damaged roots from nematodes.

The below picture of a root system shows how a seedling can grow out of the protected zone where insufficient incorporation through irrigation, or mechanical soil movement has occurred.



### Compatibility

Salibro is physically compatible with a wide range of commonly used agricultural products. Please contact your local Corteva Agriscience representative for more information.

### Tank life, stability and residual activity

Salibro is stable in water and is not broken down by hydrolysis. Salibro mixed in spray water and exposed to sunlight, can result in quick breakdown by photolysis.. The half-life of diluted Salibro in sunlight is 1.6 days. Only mix enough product for the current days use.

Salibro has an average soil half-life in Australian soils of 25-35 days. Local trials showed that soil pH, soil type and organic matter did not impact the length of effective residual control. Knockdown control (or similar) is unaffected by temperature ranges in soil of 4-35 °C. Residual control duration depends on soil moisture and temperature, with longest residual control where soils and cooler and drier, whilst shortest residual control occurs with warm, moist soil. Salibro is broken down by microbial activity in the soil.

| Crop | Pest | Application method | Application timing | Rate | Critical comments |
|---|---|---|---|---|---|
| **Root and Tuber vegetables** including: Arrowroot, Beetroot, Carrot, Cassava, Celeriac, Galangal, Ginseng, Horseradish, Parsnip, Potato, Radish, Swede, Taro, Turnip, Garden, Yams | Root-knot Nematode (*Meloidogyne* spp.) | Pre-plant incorporated or in-furrow soil treatment | Apply up to three (3) days before planting | 4 L/ha | Refer to the *Application* section for detailed instructions. |

## Application

Salibro rates are determined on green treated hectares. Salibro should only be applied to the portion of the field that requires protection from nematode infection.

*For example, if the inter-row accounts for 30% of the area the use rate over the full hectare will be 2 or 4 litres per ha x 70%.*

## Rate calculation

To calculate the treated area measure the length of the bed, by the width. For example, a 200 m long by 1 m wide bed is 200 $m^2$ or 0.02 ha. With an application rate of 2 or 4 L/ha x 0.02 ha either 40 or 80 mL (respectively) will be required to treat the selected area.

Salibro can be incorporated effectively to a depth of 20 cm in the soil by irrigation. It should be applied to control nematodes in the expected root zone at plant maturity, to ensure developing plants do not grow out of the zone of protection.

Best results are achieved with one up front application of 4 L/ha. However, in cooler months when extended control is needed, the split application can be used.

## End user safety directions

Salibro is classified as an S5 product, with Caution signal header. The labelled safety directions state:

*Salibro may irritate the eyes and skin. Avoid contact with the eyes and skin. When preparing the product for use and using the product, wear gauntlet-length PVC gloves. Wash hands after use. After each days use wash gloves.*

**For more information, please contact your local Corteva Agriscience representative on 1800 700 096.**