

## **POISON**

KEEP OUT OF REACH OF CHILDREN  
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

# **Sonic<sup>®</sup> 200EC**

## **Insecticide**

Active constituent: 200 g/L CYPERMETHRIN  
Solvent: 668 g/L LIQUID HYDROCARBONS

**GROUP 3A INSECTICIDE**

A synthetic pyrethroid insecticide for the control of certain insect pests on a range of crops as per the Directions For Use Table.

**ALWAYS READ THE LABEL AND USE ONLY AS DIRECTED**

Nufarm Australia Limited  
ACN 004 377 780  
103-105 Pipe Road  
Laverton North Victoria 3026  
Tel: (03) 9282 1000  
Fax: (03) 9282 1001



## GENERAL INSTRUCTIONS

Before opening, carefully read Directions for Use, Precautionary Statements, Safety Directions and First Aid Instructions.

**NOTICE:** Helicoverpa (=Heliiothis) armigera resistance in Northern New South Wales and Queensland. To help contain pyrethroid resistance in Helicoverpa (=Heliiothis) armigera, the Summer Crop Insecticide strategy as developed by the Queensland Department of Primary Industries and the New South Wales Department of Agriculture should be adhered to. Failure to observe the strategy may result in widespread resistance affecting the future viability of summer cropping.

## INSECT RESISTANCE WARNING GROUP 3A INSECTICIDE

For insecticide resistance management Sonic 200 EC is a Group 3A insecticide. Some naturally occurring insect biotypes resistant to Sonic 200 EC and other Group 3A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Sonic 200 EC or other Group 3A insecticides are used repeatedly. The effectiveness of Sonic 200 EC on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Nufarm Australia Limited accepts no liability for any losses that may result from the failure of Sonic 200 EC to control resistant insects. Sonic 200 EC may be subject to specific resistance management strategies. For further information contact your local supplier, Nufarm representative or local agricultural department agronomist.

## TIMING

Sonic 200EC is a contact and residual insecticide. For best results it should be applied as a protective treatment at regular intervals. Best results will be obtained by spraying at egg-hatch. See 'Critical Comments' of recommendations table for details of each crop.

## CROP CHECKING

Frequent and thorough checking of whole plants, seed head, flower or fruiting body as required, should be made over a random sample of plants representative of the whole crop area. Inspect crops after spraying to ensure a thorough kill has been obtained, however, note that maximum kill may not be achieved until 48 hours after treatment. Then check at frequent intervals, not more than 2 days apart when insect pressure is heavy. Apply the recommended treatment as soon as a crop check indicates spraying is necessary.

## MIXING

Sonic 200EC mixes readily with hard or soft water. Add the required quantity of product to water whilst under agitation to ensure thorough mixing. Agitate while spraying. It is not advisable to allow the mixed solution to stand for longer than 24 hours before use. In extremely alkaline water (pH9), spray immediately after mixing.

## APPLICATION

Good coverage is essential to ensure adequate control. The material may be applied by ground rig or aircraft. For ground rigs the volume of liquid applied should be 30-100 litres per ha for all crops except Sweetcorn and Tomatoes. For Sweetcorn use 150-450 litres of water per ha. For tomatoes refer Directions for Use. Drop arms should be on the ground rig booms when crops are taller than 30cm.

Aerial application should be under conditions normally suitable for water-based emulsifiable concentrate insecticides. Apply in at least 10-20 litres of water per ha for Cotton and Tomatoes and 20-30 litres of water per ha for other crops for aerial application. Do not apply if rain is expected within 6 hours.

Acceptable "threshold" values for eggs, larval, nymphal or adult numbers may vary according to the stage of crop development, the pest complex present and the pest management programme undertaken. Alternative higher thresholds may be acceptable under certain circumstances.

## PROTECTION OR LIVESTOCK

Dangerous to bees. DO NOT spray any plants in flower while bees are foraging.

## PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

## STORAGE AND DISPOSAL

Store in the closed, original container in a cool, dry well-ventilated area. DO NOT store for prolonged periods in direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point.

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

*Refillable Containers:* Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

## SAFETY DIRECTIONS

Product is poisonous if swallowed. Will irritate the eyes and skin. Facial skin contact may cause temporary facial numbness. Sensitive workers should use protective clothing. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray wear cotton overalls buttoned to the neck and wrist and washable hat, elbow-length PVC gloves, and face shield or goggles. After use and before eating, drinking or smoking wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

**FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre (13 11 26). If swallowed, and if more than 15 minutes from a hospital induce vomiting, preferably using Ipecac Syrup APF. For further information refer to the Material Safety Data Sheet (MSDS).

**CONDITIONS OF SALE**

"Nufarm Australia Limited" ('Nufarm') shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on Nufarm's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of Nufarm has any authority to add to or alter these conditions. 10/97

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**In case of emergency: Phone 1800 033 498**

Ask for shift supervisor. Toll free 24 hours.

NRA Approval No.: 46088/0700

**DIRECTION FOR USE****RESTRAINT:** Do not apply if rain is expected within 6 hours.

Crop	Pest Controlled	State	Rate	Withholding Period	Critical Comments
<b>Cabbages</b> <b>Cauliflowers</b> <b>Brussels sprouts</b> <b>Broccoli</b> <b>Kale</b> <b>Kohlrabi</b> <b>Chinese cabbage</b> <b>Turnips</b>	Helicoverpa spp Cabbage white butterfly <i>(Pieris rapae)</i> Cabbage Moth <i>(Plutella xylostella)</i>	All States	LOW VOLUME 400mL/ha	1 day harvest	Apply when pest populations indicate. When reinfestation is continuous, treatment every 7 or 10 days may be required. Add Chemwet 600 at 5-15mL per 100 litres of spray mixtures. <b>LOW VOLUME:</b> When applying by ground equipment, use a fine spray with droplet size of 100 to 200 microns. Apply in 100 to 600L water per hectare. For aerial application, apply in 20 to 60L water/ha with a droplet size of 100 to 150 microns. <b>HIGH VOLUME:</b> Use a medium spray with droplet size of 200 to 400 microns. Apply 600L spray mixture per hectare just after transplanting and increase gradually to 1000L/ha toward maturity.
	Cluster Caterpillar <i>(Spodoptera litura)</i>	NSW, Vic, SA, WA, Tas only	HIGH VOLUME 50mL/100L		
<b>Canola</b>	Redlegged earth mite <i>(Halotydeus destructor)</i>	NSW, ACT, Vic, SA, Tas, WA only	50-75 mL/ha	14 days grazing	Apply by ground rig only. Thorough spray coverage is essential. Inspect fields and crop regularly. Spray post-seedling emergence (1-6 leaf stage). DO NOT apply as bare earth treatment. Spray as pests appear in large numbers. Avoid spraying if rain is imminent or when pests are sheltering. Use higher rate for heavy infestations. Repeat application after 10-14 days if necessary.
	Native Budworm <i>(Helicoverpa punctigera)</i>		200-250 mL/ha	21 days harvest and grazing	
<b>Winter Cereals</b> (for harvest including wheat, barley, triticale)	Redlegged earth mite ( <i>Halotydeus destructor</i> ), Blue oat mite ( <i>Penthalens major</i> )	NSW, ACT, Vic, Tas, SA, WA only	50-75 mL/ha	21 days grazing	Apply by ground rig only. Thorough spray coverage is essential. Inspect fields and crop regularly. Spray post-seedling emergence (1-5 leaf stage). DO NOT apply as bare earth treatment. Autumn/Winter cereals: to prevent seedling damage apply at first sign of economically damaged mite populations usually 3-6 weeks after autumn rains and as indicated by field inspections. Typical mite damage to seedlings is indicated by distorted and twisted leaves or scarring of crop. Avoid spraying if rain is imminent or when pests are sheltering. Use higher rate for heavy infestations. Repeat application after 10-14 days if necessary.
	Webworm	WA only	75 mL/ha		
	Cutworm ( <i>Agrotis</i> spp.)	NSW, ACT, WA only	75mL/ha		
Continued over					Pre-planting: The product may be applied with knockdown herbicides prior to planting. Apply from the last week in May when the larvae have emerged. Use high water volumes, e.g 100L/ha. Post crop emergence: Inspect crop regularly from emergence and spray at first sign of pest activity.
					Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on the seedlings. Spray in the late afternoon or evening. In NSW DO NOT apply before May or after August.

Crop	Pest Controlled	State	Rate	Withholding Period	Critical Comments
<b>Winter Cereals</b> (for harvest including wheat, barley, triticale) Continued	Cutworm (Agrotis spp.)	Qld only	75 or 150mL/ha	21 days grazing	In Qld, use the higher rate when the infestation is severe, or when there are larvae longer than 10mm, or when longer residual activity is required.
	Common army worm (Mythimna convecta), Southern Armyworm (Persectania ewingii)	NSW, ACT, Vic, Tas, WA only	170 mL/ha	21 days harvest 35 days grazing	Apply when pest is first seen. Apply before "head lopping" occurs and when there are 2 or more larvae per square metre. Spray in the cool of the day (usually late afternoon) when larvae are most active. Ensure the spray penetrates the crop. This rate is effective on larvae up to 20 mm in length.
<b>Chickpeas</b>	Native budworm (Helicoverpa punstigera)	NSW, Vic, Tas, Sa, WA only	200-250 mL/ha	21 days harvest 35 days grazing	Thorough coverage is essential. Time application to coincide with egg hatch and closely monitor pest populations. Use lower rate on eggs and small larvae, and light to moderate infestations. Use higher rate on large larvae (2-3 cm long) and heavier infestations. Apply maximum two applications per crop with a 14 day spray interval.
<b>Cotton</b>	Native Budworm Cotton Bollworm	Qld, NSW, WA, NT only	375 or 500mL/ha	14 days (Harvest)	Apply when egg laying reaches a "threshold" of 25 eggs or 12 newly hatched larvae per 100 terminals.
			500 or 625mL/ha		Use higher rate when egg laying is continuous and/or larvae larger than 1cm are present.  On occasion, when other methods have failed to control Helicoverpa spp., two applications at the higher rates and a short interval may be required prior to using lower rates as recommended.
	Cotton Loopers		375 or 625mL/ha		Apply as pest populations indicate.
	Rough Bollworm		375 or 500mL/ha		Apply when an average of 2 or more larvae are present per 100 bolls. It is essential to detect and treat infestations in early stages. Application may be marginally effective on an established or concealed infestation in bolls deep in the canopy of a mature crop.
<b>Faba beans</b>	Native Budworm	SA, WA only	200mL/ha	4 weeks (Harvest)	Apply when the majority of caterpillars are less than 20mm long.
			250mL/ha		Apply when the majority of caterpillars are 20mm long. If caterpillars are larger than 20mm long it is too late to spray.
<b>Field peas</b>	Pea Weevil	SA, WA, Vic & NSW only	160 or 200mL/ha	4 weeks (Harvest)	Monitor crops with a sweep net, when the first pods are formed, and thereafter at least at weekly intervals. Monitor crops on warm (20°C or higher) days. Spray when one or more adult beetles per 25 sweeps are found.
	Native Budworm	SA, WA, Vic & NSW only	200 or 250mL/ha	4 weeks (Harvest)	Monitor crops as for Pea Weevil. Spray when average numbers exceed one per sweep. Use lower rate if caterpillars are less than 1cm long. (Often this will coincide with the weevil treatment). Use higher rate if caterpillars are 1cm or greater in length.
<b>Lupins</b>	Cutworm (Agrostis spp.)	ACT & WA only	75mL/ha	4 weeks (Harvest)	Inspect crop regularly from emergence and spray at first sign of activity.
	Native Budworm (Heliothis punctigera)	NSW, ACT, Vic & SA only	200 or 300mL/ha		Apply at first sign of infestation. Use higher rate under cooler conditions and where larvae are present.
		WA only	120 mL/ha		Apply when damaging pest numbers are present on the crop or with the first visible sign of damage to pods. Often spraying will coincide with the end of flowering and pod development. Use highest rate if caterpillars are larger than 2cm long.

Crop	Pest Controlled	State	Rate	Withholding Period	Critical Comments
<b>Maize</b>	Corn Earworm	NSW, Vic, WA, Qld, ACT & NT only	300 or 400mL/ha	7 days (Harvest)	Cob damage tolerated is variable according to market requirements. For fresh market corn, spray at tassle emergence then at intervals of 5-8 days until silks wither. For processing corn and maize apply at early silking. Use the higher rate if larvae larger than 1cm are present.
	Native budworm (Heliothis punctigera)	Vic, WA only	300 or 500mL/ha		
<b>Sorghum</b>	Corn Earworm	NSW, WA & Qld only	300 or 500mL/ha	14 days (Harvest)	Apply when larval numbers reach 2 per head. Use the higher rate if larvae larger than 1cm are present.
	Sorghum Midge		190 or 380mL/ha		Apply when midge numbers reach 1-2 per head across the whole field from head emergence to completion of flowering. Use the higher rate for increased residual protection.
<b>Soybeans, Navy and Mung Beans</b>	Native Budworm, Cotton Bollworm	NSW, Qld, NT & WA only	300 or 400mL/ha	7 days (Harvest)	Apply when flower or pod feeding larval numbers reach 2 per metre of row in soy beans, 1-2 per metre of row in navy beans, 1 per metre of row in mung beans. Use higher rate when larvae larger than 1cm are present or when canopy is dense.
	Soybean Looper		375 or 500mL/ha		Apply as pest populations indicate. Use high rate when larvae larger than 15mm are present.
<b>Sunflowers</b>	Native Budworm Cotton Bollworm (both <i>Heliothis</i> spp.)	Qld, NSW, Vic, SA, WA only	380 to 500mL/ha	21 days (Harvest)	Apply when larvae are damaging to plants. Use highest rate for better knockdown when larvae larger than 1cm are present.
	Grey Cluster Bug (not VIC) Rutherglen Bug				Apply when numbers reach 10-15 adults per plant at budding in dry land crops or 20-25 in irrigated crops. After flowering, apply when there are 20-25 adults on the face of the heads. General Comments: If flowering has started, application should be deferred until after flowering is complete but before the heads turn down. If treatment is unavoidable during flowering and bees are actively foraging in the crop, spraying must take place in the very early morning or very late afternoon.
<b>Sweetcorn</b>	Corn Earworm	All States	380 or 500mL/ha	7 days (Harvest)	Cob damage tolerated is variable according to market requirements. For fresh market corn, spray at tassle emergence then at intervals of 5-8 days until silks wither. For processing corn and maize apply at early silking.  Use the higher rate if larvae larger than 1cm are present.
	Native Budworm	SA only			
	Native Budworm, Southern Armyworm	Tas, WA only			
	Common Armyworm	All States			
<b>Tobacco</b>	Native Budworm, Tobacco Budworm	Qld, Vic, WA & NSW only	38 or 50mL per 100L in 1000L/ha	7 days (Harvest)	Apply as pest populations indicate. Good spray coverage is essential. Use the higher rate when larvae larger than 1cm are present. Increase spray volume per hectare from 200-1000L as necessary to achieve good coverage as the crop grows.
<b>Tomatoes - Bush and Trellis</b>	Native Budworm	All States	Programme Application: LOW VOLUME: 150 to 300mL/ha	1 day (Harvest)	The use of wetting agent on tomatoes is not necessary. DO NOT apply to trellis tomatoes by air.  Field Crops: Programme Application: Apply as pest populations indicate - a 7 to 10 day interval may be required. Use the higher rate when large larvae are present and when reinfestation (egg laying) is intense.
	Tomato Grub Cluster Caterpillars	Qld, NSW, Tas & WA only			

Crop	Pest Controlled	State	Rate	Withholding Period	Critical Comments
Tomatoes - Bush and Trellis cont	Cluster Caterpillars	SA only	HIGH VOLUME: 20 or 40mL/100L  Established Infestations: LOW VOLUME: 400mL/ha HIGH VOLUME: 50mL/100L	1 day (Harvest)	LOW VOLUME: When applying by ground equipment, use a fine spray and preferably cone nozzles. Apply in 100 to 400L water per hectare.  HIGH VOLUME: Use a medium or fine spray and preferably cone nozzles. Apply 200L of spray mixture per hectare just after transplanting and increase gradually to 1000L/ha at maturity.  Established infestations: (as Escape Situations) LOW VOLUME: Use 400mL/ha or 50mL/100L if large larvae (up to 3cm) are present.  HIGH VOLUME: Crops under glass: DO NOT apply using LV/ULV atomisers at strengths greater than 1 part of product per 50 parts of water. Rates and critical comments are as for field crops.  AERIAL APPLICATION: Apply a minimum of 10L water per ha with a droplet size of 50 microns or less.
	Plague Thrips	All States	LOW VOLUME: 130mL/ha HIGH VOLUME: 18mL/100L		

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**WITHHOLDING PERIOD:**

**TOMATOES, CABBAGE, CAULIFLOWERS, BRUSSEL SPROUTS, BROCCOLI, KALE, KOHIRABI, CHINESE CABBAGE, TURNIPS: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.**

**SWEETCORN, MAIZE, SOYBEANS, MUNG BEANS, NAVY BEANS, TOBACCO: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.**

**SUNFLOWERS: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION.**

**LUPINS, FIELD PEAS, FABA BEANS: DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION.**

**CHICKPEAS: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 35 DAYS AFTER APPLICATION.**

**CANOLA: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR 21 DAYS AFTER APPLICATION (UNLESS OTHERWISE STATED IN DIRECTIONS FOR USE TABLE)**

**WHEAT, BARLEY, TRITICALE: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 35 DAYS AFTER APPLICATION (UNLESS OTHERWISE STATED IN DIRECTIONS FOR USE TABLE).**

**SORGHUM, COTTON: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.**