



CENTAUR® WDG TECHNICAL BULLETIN

CENTAUR IS A CONTACT FOLIAR INSECTICIDE that controls the early growth stages of pear psylla, San Jose scale, and mealybugs. Centaur fits into spray programs easily, without disrupting predators and other beneficial insects. It is most effective when used as a pre-bloom spray. Centaur complements pear insecticide programs by providing:

- 15-21 day residual control that keeps pear psylla populations in check
- An alternative mode-of-action to organophosphates for controlling San Jose scale
- Superior mealybug control that prevents crawlers from damaging the fruit

IDEAL APPLICATION TIMINGS FOR CENTAUR



Delayed dormant



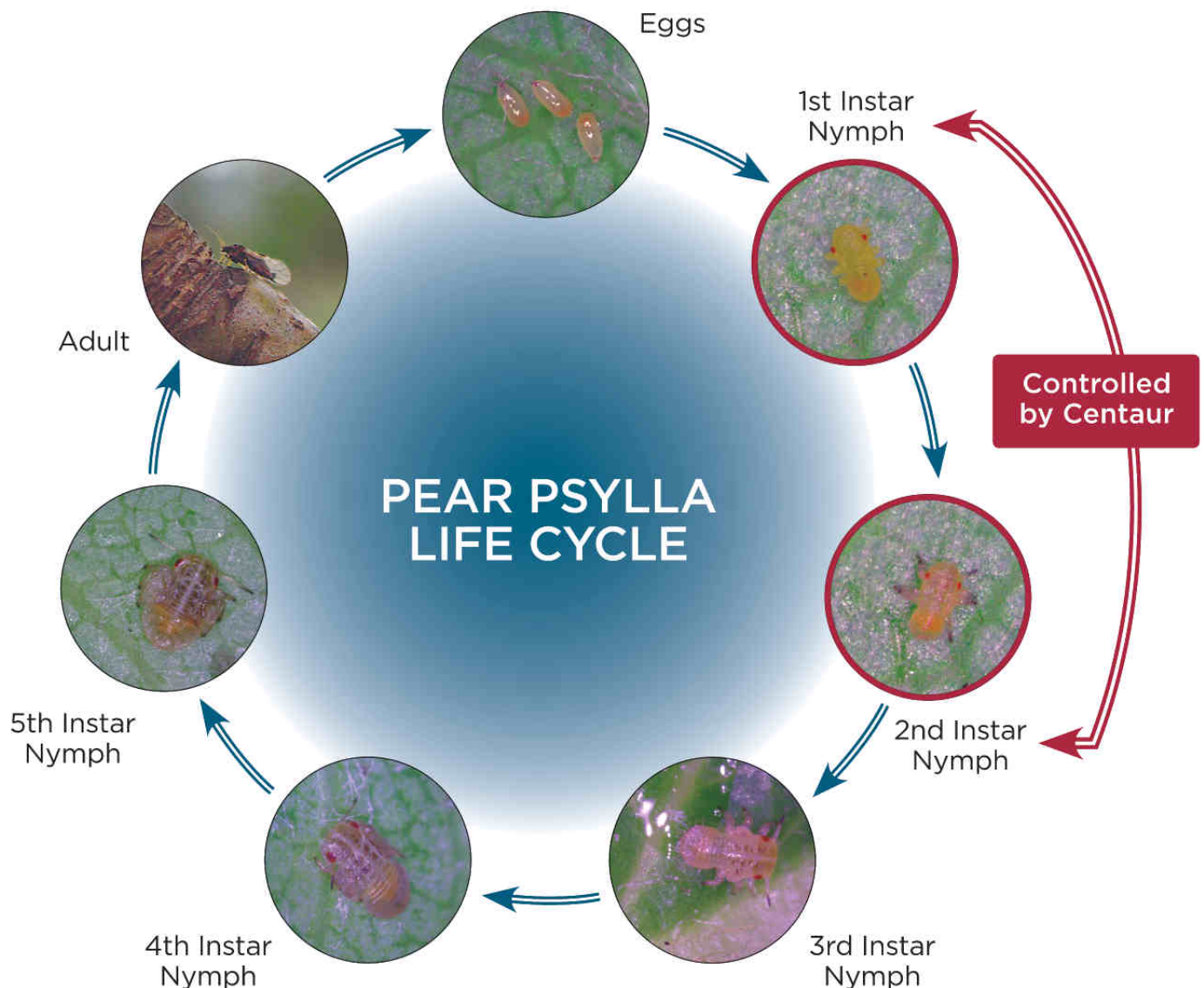
Tight cluster



Cluster bud



Popcorn



MODE OF ACTION

Centaur is an insect growth regulator that differs from all other insecticides by being the only chemistry in IRAC Group 16 (inhibitors of chitin biosynthesis, type 1). Although IRAC Group 15 insecticides also inhibit chitin biosynthesis (type 0), there is no known case of insect cross-resistance between these chemistries and buprofezin, the active ingredient in Centaur. The inhibition of chitin biosynthesis prevents molting of juvenile stages of susceptible pests, resulting in insect mortality. Although this effect is not observed against adults, exposure results in reduction of oviposition, and oviposition of eggs that are not viable.

RESISTANCE MANAGEMENT

The product's unique mode of action is a tool for growers who want to prevent the build-up of pest resistance by rotating products. Centaur can be alternated with other mode-of-action insecticides for San Jose scale control, and added to pear psylla programs to help preserve the long-term effectiveness of new chemistries.

INSECT STAGES CONTROLLED – WHAT TO EXPECT

- Centaur controls 1st and 2nd instar pear psylla nymphs.
- Centaur controls the immature stages of San Jose scale (“black cap” stage and 1st crawler stage).
- Centaur controls the immature stages of mealybugs (nymphs and 1st crawler stage).
- Centaur does not provide knockdown of pear psylla adults. Centaur can be tank mixed with an adulticide to add adult knockdown.
- Centaur is not an ovicide.

RECOMMENDED APPLICATION TIMINGS

Best results are achieved by applying Centaur to insect populations that are predominantly composed of early stage juveniles. Centaur applications should be timed based on expected or early timing of pest emergence. For pear psylla, apply pre-bloom or at petal fall. For control of San Jose scale or mealybugs, apply pre-bloom or at 1st crawler emergence.

IS CENTAUR RECOMMENDED FOR IN-SEASON USE?

If applications of Centaur are made in-season to mixed generations of target pests, the time required for control is increased. Centaur is a contact insecticide and coverage is critical for optimal performance. A higher water gallonage (minimum 200 gpa) is recommended for adequate canopy coverage. For best results as a cover spray, tank mix with an adulticide.

ACTIVITY ON PEAR PSYLLA WITH CENTAUR



*1st Instar
Untreated*



*1st Instar
Treated with Centaur*



*2nd Instar
Untreated*



*2nd Instar
Treated with Centaur*

RECOMMENDED WATER VOLUMES/RATE PER ACRE

- Optimal water volume is 200 gallons per acre (gpa) with Centaur at 34.5 oz/acre
- When 100 gpa is used, the optimal Centaur rate is 46 oz/acre.
- Maximum of 69 oz/acre per year

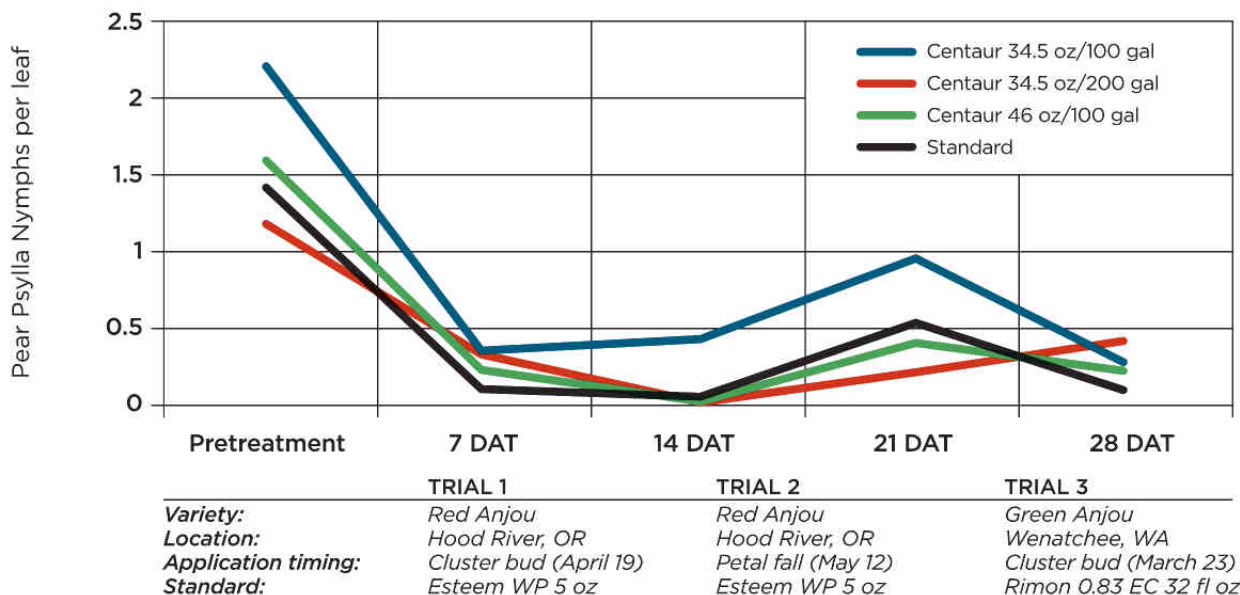
MIXING GUIDELINES

Lack of an emulsifier in some oils can cause combination issues when tank mixed with a dry product like Centaur. Centaur tank mixes well with all other products. Oil mixing issues can be eliminated by adding no oil, or minimized by:

- Using 200 gpa
- Pre-mixing in a bucket with water until completely dissolved
- Adding an anti-foaming agent
- Using Saf-T-Side Oil

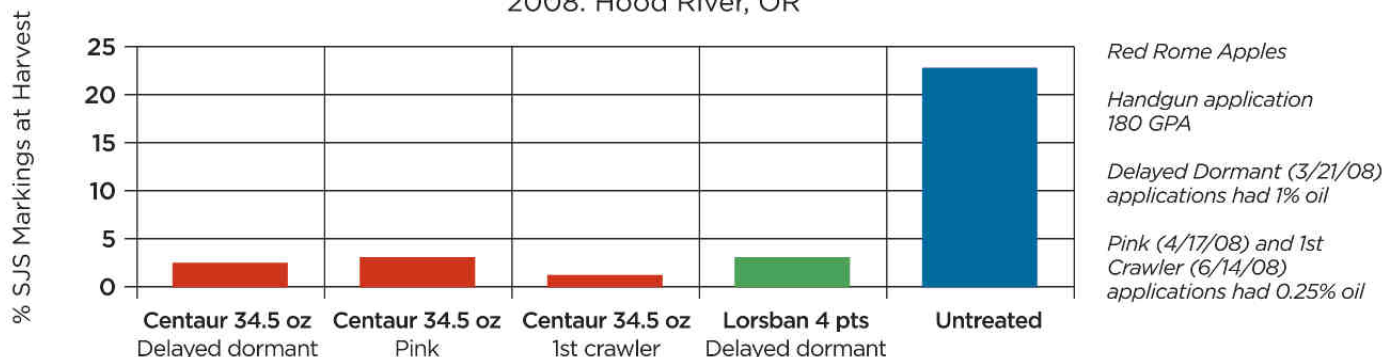
EARLY SEASON CONTROL OF PEAR PSYLLA WITH CENTAUR

Spring 2010: Average of 3 Trials



APPLE SAN JOSE SCALE CONTROL WITH CENTAUR

2008: Hood River, OR



SOFT ON BENEFICIALS

Centaur fits into IPM programs without disrupting predators. Two of the most important pear psylla predators, *Trechmites insidiosus*, a parasitic wasp and *Deraeocoris brevis*, a predaceous Mirid are not harmed by applications of Centaur.

WORKER SAFETY

Centaur provides good worker safety with a "Caution" label. Minimal Personal Protective Equipment (PPE) is required: Coveralls over long-sleeved shirt and long pants, waterproof gloves and shoes plus socks.

LABEL INFORMATION

Formulation: 70WDG • Active Ingredient: buprofezin • IRAC Group 16 (inhibitors of chitin biosynthesis, type 1) • Re-Entry Interval (REI): 12 hours • Pre-Harvest Interval (PHI): 14 days.



NICHINO
AMERICA