

Water base paints for sunburn protection of young fruit trees

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Water-base paints appear capable of preventing sunburn for one season when used properly. Exterior water-base paints last longer than interior, but also may cause more tree injury. Therefore, the interior water-base paints appear to give the greatest margin of safety of any of the commercial paints tested.

TWENTY-ONE materials were evaluated in tests on the use of commercial paints for whitewashing fruit trees during the past two years. Two of these materials were standard (one-package) whitewash mixes, 14 were water-base paints (either interior, exterior, or a combination) and five were oil-base paints. Water-base paints were also tested in several dilutions. Both latex and acrylic types of

water-base paints were used. All treatments were compared with unpainted, check trees.

One-year-old almond, apricot, cherry, peach, pear, prune, and walnut trees were used in the 1964 tests. In 1965, trials were conducted on the same trees, then two years old, and on a new planting of one-year-old peach and prune trees (see table). The factors evaluated were sunburn protection, weathering ability (life of the material on the tree), injury-causing potential of the paint, and delays in leafing out caused by these materials.

Sunburn protection

The closeness of plantings in the nursery row in 1964 resulted in no sunburn on any trees, including unpainted checks. In 1965, several weak, unpainted check trees did sunburn, but none of the painted trees sunburned, regardless of vigor. Some borer damage was also found on sunburned trees.

The commercial paints tested in 1964 outlasted the standard (one-package) whitewash mixes under sprinkler irrigation. Exterior water-base paints outlasted interior paints under furrow irrigation in 1965 (see table). Diluted water-base paints appeared to last as well or slightly better than when undiluted.

Water-base paints usually give adequate sunburn protection for one season. However, on rapidly growing young trees, probably none of the water-base materials will give complete coverage longer than one year because trunk expansion causes these paints to crack and chip.

Injury

Interior water-base paints caused no detectable injury to trunks of the one-year-old trees when applied shortly after planting. Some, but not all, exterior water-base paints caused injury and gum-

ming on trunks of one-year-old trees. Oil-base paints caused the most serious injury to trunks.

To simulate treatment of scions, one-year-old limbs were stubbed back to about 8 inches and these were painted with various materials, as shown in the table. Injury was severe with oil-base paints, moderate with exterior water-base paints, and only slight with interior water-base materials. When water-base paints were applied over buds that had started to grow, injury to or killing of some buds occurred. Applications were made in the summer to current season's growth to further analyze the injury-causing potential of water-base paints. These applications sometimes resulted in discoloration and cracking of bark, gumming of limbs on stone fruit trees, and killing of tender shoots. Exterior water-base paints caused more of these injuries than did interior materials.

All paints caused a delay of about one week in leafing out as compared with unpainted check trees. Trees painted with water-base materials were as large at the end of the season as unpainted check trees. For this reason the delay did not appear serious. Oil-base paints were found undesirable for whitewashing since they caused serious tree injury and appreciably delayed leafing out and tree growth.

Diluting water-base paints for good consistency in application may be desirable; however, some paints are adequately diluted as purchased. This diluting evidently has no adverse effect on weathering or tree injury except that excessive dilution may cause reduced sunburn protection.

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A COMPARISON OF COMMERCIAL PAINTS FOR WHITEWASHING FRUIT TREES, 1965

Materials	Weathering Ability ¹		Trunk Injuries ²		Stubbed Limb Injuries ³
	Prunes	Peaches	Prunes	Peaches	
Water-base paints					
Exterior	1.1	2.0	3/20	2/20	18/70
Interior	1.7	2.5	0/20	0/20	3/69
Combination exterior-interior	1.5	1.9	0/8	0/8	3/28
All water-base	1.4	2.2	3/48	2/48	24/167
Oil-base paints	1.1	1.8	6/17	1/16	44/56
Unpainted check trees	9/19 ⁴	2/15	4/59

¹ Weathering ability rating scale as follows: (1) no cracking, checking or chipping of paint—coverage very good; (2) some cracking, checking or chipping of paint—sunburn protection adequate; (3) much cracking, checking and chipping of paint—paint coming off and sunburn protection minimal; and (4) less than 1/2 of paint left on tree. Ratings taken 5 1/2 months after painting.

² The number of trees or limbs injured/the number treated.

³ Stubbed limbs are 1-year-old shoots cut back to about 8 inches to simulate scions and then painted. Species used were almond, apricot, peach, prune and walnut.

⁴ Primarily sunburn damage.