

**EVALUATION OF FINISHES ON WESTERN JUNIPER  
(*JUNIPERUS OCCIDENTALIS*)  
FOR WOOD SIDING AND DECKING**

**Study Plan**

**1-93-4**

**By**

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**August 5, 1993**

**STUDY INITIATION REPORT**

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**1. Research Work Unit No(s) , Title(s), and Project Leader(s)**

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4707 Wood Surface Chemistry and Preservation, R. S. Williams

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**2. Problem No(s). and Title(s)**

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No. 1. Weathering performance of wood and finished wood products

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**3. Study No(s). and Title(s)**

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1-93-4 Evaluation of finishes on Western juniper (*Juniperus occidentalis*) for wood siding and decking

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**4. Study Objective**

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To study the potential for using Western juniper (*Juniperus occidentalis*) for wood siding and decking

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**5. Author(s)**

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**6. Keywords**

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Wood, Surfaces, Durability, Performance, Finishes, Coatings, Protection, Western juniper

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RWU FS-FPL 4707

Wood Surface Chemistry and Preservation

Problem No. 1: Weathering Performance  
of Wood and Finished  
Wood Products.

STUDY PLAN No. 1-93-4

EVALUATION OF FINISHES ON WESTERN JUNIPER  
(*JUNIPERUS OCCIDENTALIS*)  
FOR WOOD SIDING AND DECKING

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8/6/93 Date

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8-5-93 Date

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8/5/93 Date

APPROVED BY:

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6 Aug 93 Date

## Study 1-93-4

# EVALUATION OF FINISHES ON WESTERN JUNIPER (*JUNIPERUS OCCIDENTALIS*) FOR WOOD SIDING AND DECKING

## Introduction

Western juniper (*Juniperus occidentalis*) is an under used wood species found on the West Coast of the United States. It is very similar to Eastern redcedar (*Juniperus virginiana*) which is used in cedar chests and closet linings. The strong aroma of Western juniper is an indication of high oil and extractives content and it is likely that painted specimens will require a stain-blocking primer to prevent extractive bleed-through. This study will evaluate the performance and durability of finishes applied to Western juniper. The specimens will be exposed vertically to represent siding and horizontally to represent decking. In addition to determining if Western juniper is suitable for siding and/or decks, two surface profiles will be included; A surface roughened with a band saw, and a smooth surface from a jointer.

## Experimental

### Substrates:

We will use the Western juniper dried two ways; 1) Air dried and 2) Kiln dried. The study will use four foot boards with 3 replicates for each finish (2 drying methods x 2 exposure angles x 3 reps = 12 boards). Each board will be divided into two surface types. First the entire surface length will be band sawed to create a rough surface. Then each surface will be jointed with the jointer blades off set so they reach only half the board (Figure 1).

### Substrate Supply Sources:

The Western juniper boards will be supplied by Larry Swan, USFS, Winema NF, Klamath Falls, OR.

**Finishing:**

Each vertically installed board, henceforth called siding, will receive 6 finishes. Each horizontally installed board, henceforth called decking, will receive 4 finishes. Finish application will be by brush. Coverages will be determined by the usual gravimetric method. The coating systems are:

1. Control (no finish)
2. Clear penetrating finish
3. Toned, clear penetrating finish
4. Semitransparent oil-based stain
5. Solid-color latex stain
6. Latex primer / latex topcoat, two-coat paint system

The siding specimens will be finished with coating systems 1 to 6; the decking specimens with coating systems 1 to 4.

**Procedure:**

The boards are about 1" x 8" x 4'. After sawing and planing, the siding boards will be divided into 6, 8" areas and painted in the laboratory. Each area includes both roughsawn and smooth surfaces. The boards will be mounted on studs with 16" centers, facing south at ninety degrees. The deck boards will be divided into 4, 1 foot areas, painted in the laboratory, and mounted on joists 4 feet above the ground.

**Evaluations:**

The finished siding and decking boards will be evaluated after 6 months, 12 months, and at yearly intervals after that. Evaluations and sample designations are shown in the Study Evaluation Form attached.

## Safety

The usual laboratory and field safety practices will be followed. No unusual safety requirements are anticipated.

## Personnel Assignment, Costs and Time of Completion

### Personnel:

NAME	PROFESSION	ESTIMATED TIME, YRS
Mark Knaebe	Chemist	0.05
Peter Sotos	Physical Science Technician	0.02
Tracey Duch	Physical Science Technician	0.05
William Feist	Research Chemist	0.02

Estimated Time of Completion: FY 1998

Estimated Costs: \$300

FIGURE 1 -- TYPICAL EXPOSURE SPECIMEN

