HRO

OUTLINE

Local Independent Administrative Agency Hokkaido Research Organization

Forest Research Department

Forest Products Research Institute

Striving for a Sound Material-Cycle Society Using Wood

～ *Wood Contributes to our Survival* ～

The Forest Products Research Institute was established in 1950 to support Hokkaido's wood industry and has since worked diligently in research and development and prepared extension activities from the results for the efficient use of wood products.

In recent years the focus of research has changed dramatically due to rising environmental concerns and the diversification of social needs concerning forests and forestry. Under these circumstances the institute is encouraging more practical research aimed at developing the wood industry and improving the lives of Hokkaido's residents.

History

1950 Establishment of the Hokkaido Forestry Service Office in Midori-machi, Asahikawa City
1964 Name changed to the Hokkaido Forest Products Research Institute
1986 Relocated to Nishi-kagura, Asahikawa City
1989 Establishment of the Wood and Lifestyle Information Hall
2010 Integrated into the Local Independent Administrative Agency Hokkaido Research Organization as the Forest Research Department's Forest Products Research Institute
2010 60th anniversary

1974

The three mainstays for research

1 Recovery of lost construction wood markets, improvement of production systems and market-research skills

To take back competitive edge again in the Hokkaido Wood Market that was lost by imports and transports, we need to develop higher-level technology. Our research targets the production of high-quality construction using our wood resources. Our research also targets revolutionary wooden products and revolutionary equipment for various uses of wood. Based on the relation between local businesses and the local government, we also have to develop new wooden products and a new sales system that especially suits for local wood resource situation.

2 Safe, comfortable, value-added wood products and wood-based construction

After the big Hanshin-Awaji earthquake, there has been a growing demand for safe, trustworthy wood and wood-based structures on the wood and wooden structure markets. These demands also cause higher demands for quality guaranteed and safety wooden products and for revolutionary wood construction technologies. On the other hand, durability and fire resistance are also required. By developing chemical-free houses and researching intelligent use of wood, we can propose more attractive and more comfortable life with wood and wooden structures than the competition can provide.

3 Comprehensive Use of Wood Resources

By total and higher quality use of wood resources, we promote the prevention of global warming, creating so-called recycling society and re-activating village-side communities. Of course, wood is renewable and its inherent carbon is neutral. We are now developing new technologies for more efficient use of Hokkaido wood resources, such as energy and chemical use. We are also researching revolutionary chemical reform and the development of its recycling system. Mushrooms are another produce of wood resources, and there are great expectations for the role of health- improving ingredients. We are also targeting its functionality as a nutrient, improving its taste and development of medicinal use including other microbes besides mushrooms.

Drying technology of larch

Wooden sash

Oil absorption mat

Large area floor heating system

Mushroom breed development

Research and Development

Recovery of lost construction wood markets, improvement of production systems and market-research skills

Improvement of techniques in the production of huge larch logs for construction wood

To promote the use of huge larch logs, log selection methods based on use, efficient lumbering methods and artificial drying methods, among other subjects, are being researched.

Development of wood products with curved laminated lamber

A device was developed for the efficient manufacturing of small-size curved laminated lamber. Diverse products using curved laminated lamber are proposed.

I-beam made from Hokkaido wood

Combination of Sakhalin fir lumber and Japanese larch plywood from Hokkaido. Received certification as housing structural material from the Minister of Land, Infrastructure, Transport and Tourism.

Safe, comfortable, value-added wood products and wood-based construction

The Hokkaido-type wooden guardrail

Beams of combined laminated larch lumber and angle steel satisfy the standards for snow-proof B-type guardrails. This guadrail also passed the performance test for guardrails on vehicles.

Shelf design: Y. IMAGINE Ltd.
Production collaboration: Kyowa Tategu Ltd.

Colored UZUKURI plywood

Color and surface irregularities create innovative design. This open shelf made from uzukuri plywood (left) was highly rated in international expositions.

Decay diagnostic technique for wood houses

A non-invasive technique was developed to evaluate the level of house wood decay and resulting strength deterioration. This technique is included in a diagnostic manual.

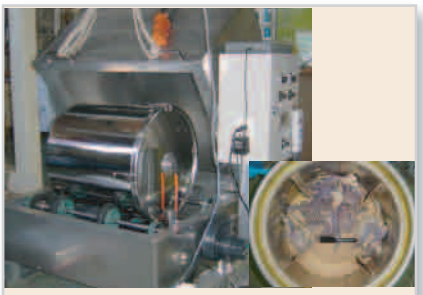
Comprehensive Use of Wood Resources

A Hokkaido type pellet heater and wood pellets

Functional and tasteful FF type pellet heaters for homes in Hokkaido were jointly developed with a private company. These popular heaters have been on the market since 2007.

Wood bio-ethanol

Research is ongoing for the efficient production of ethanol from wood biomass as a substitute for fossil fuel.



Mobile composter

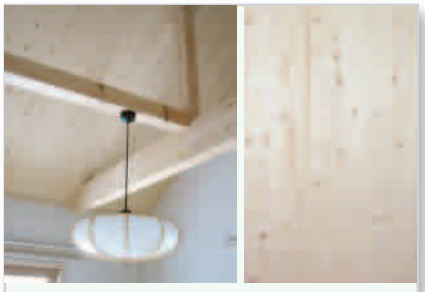
Using wood powder this device rapidly composts marine waste, such as starfish and sea urchin shells, even at low temperatures. It can also process waste from the agricultural, livestock, and food industries.

Research and Development

Recovery of lost construction wood markets, improvement of production systems and market-research skills

Automatic control system for killen dry

This system automatically controls the temperature and humidity of a steam dryer for wood. It is a multifunctional system that also helps to elaborate drying schedules.



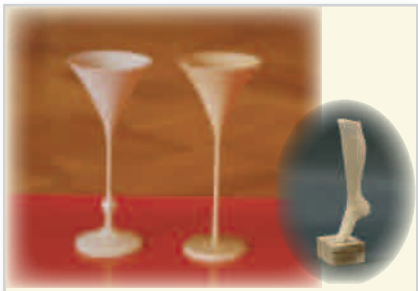
Softwood plywood for interior furnishings

Interior wood furnishings create an atmosphere of warmth and calmness that only wood can offer. Products made of Sakhalin fir from Hokkaido are on the market.

Safe, comfortable, value-added wood products and wood-based construction

Fireproof wood shutter

This shutter is not only designed to beautify the house and garage but is also fireproof. Future certification as a fireproof device is being considered.



3-dimensional wood processing system

Wood can be worked into complex shapes using a computer-controlled woodworking lathe. Time and cost reductions were possible.

Comprehensive Use of Wood Resources

Elm Mushroom 291　Taisetsu Hana No Mai No.1

Registered mushroom varieties

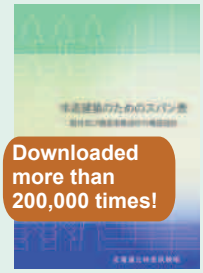
Varieties were developed, such as the high quality Branched Oyster Mushroom (left) suitable for processing and the Hen of the Woods (right), that can be cultivated in substrate containing Japanese larch sawdust.

Technology to increase GABA

This technology can greatly increase the level of the functional amino acid GABA found in mushrooms. The use of functional food ingredients is being developed.

Manuals and Special Features (Only Japanese)

Available at our Website



Span Table for Wood Construction

A table to easily calculate sectional dimensions in wood frame house design and construction.

A big help in wood construction!

Japanese Larch Use Handbook

This handbook introduces basic information about Japanese Larch. It is a comprehensive book of research results and techniques the institute has gathered over the long term.

For Clean Indoor Air

Comprehensive explanation of “sick house syndrome” and the VOCs (volatile organic compounds) that cause the syndrome.

Techniques on Forest Biomass Use

A special feature on wood chipping techniques and wood chip use which are indispensable for forest biomass utilization.

Introduction - CCA Treated Lumber Classification

An introduction on CCA (a preservative containing chromium, copper, and arsenic) treated wood, simple identification methods handy in the demolition field, and identification and classification procedures of treated wood.

Technical assistance

Flexural strength tests of actual-size material

Fire protecting test on wooden sash

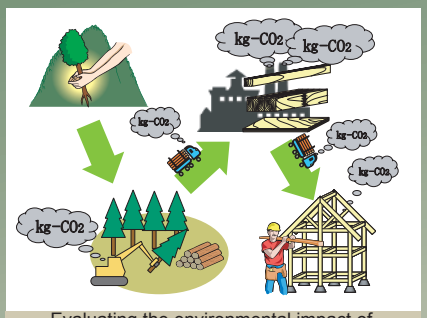
VOC measurement that uses small chamber

Analysis of microscope image of wood

Analysis of wood constituent

New kind development of mushroom

Experiments in artificial drying of wood



Evaluating the environmental impact of wood products

Manufacturing experiment of wood board

Full -scale tests can be conducted with factory scale production tests and a largescale testing machine.

Wood education “moku-iku”

Kids’ room “koropokkuru”

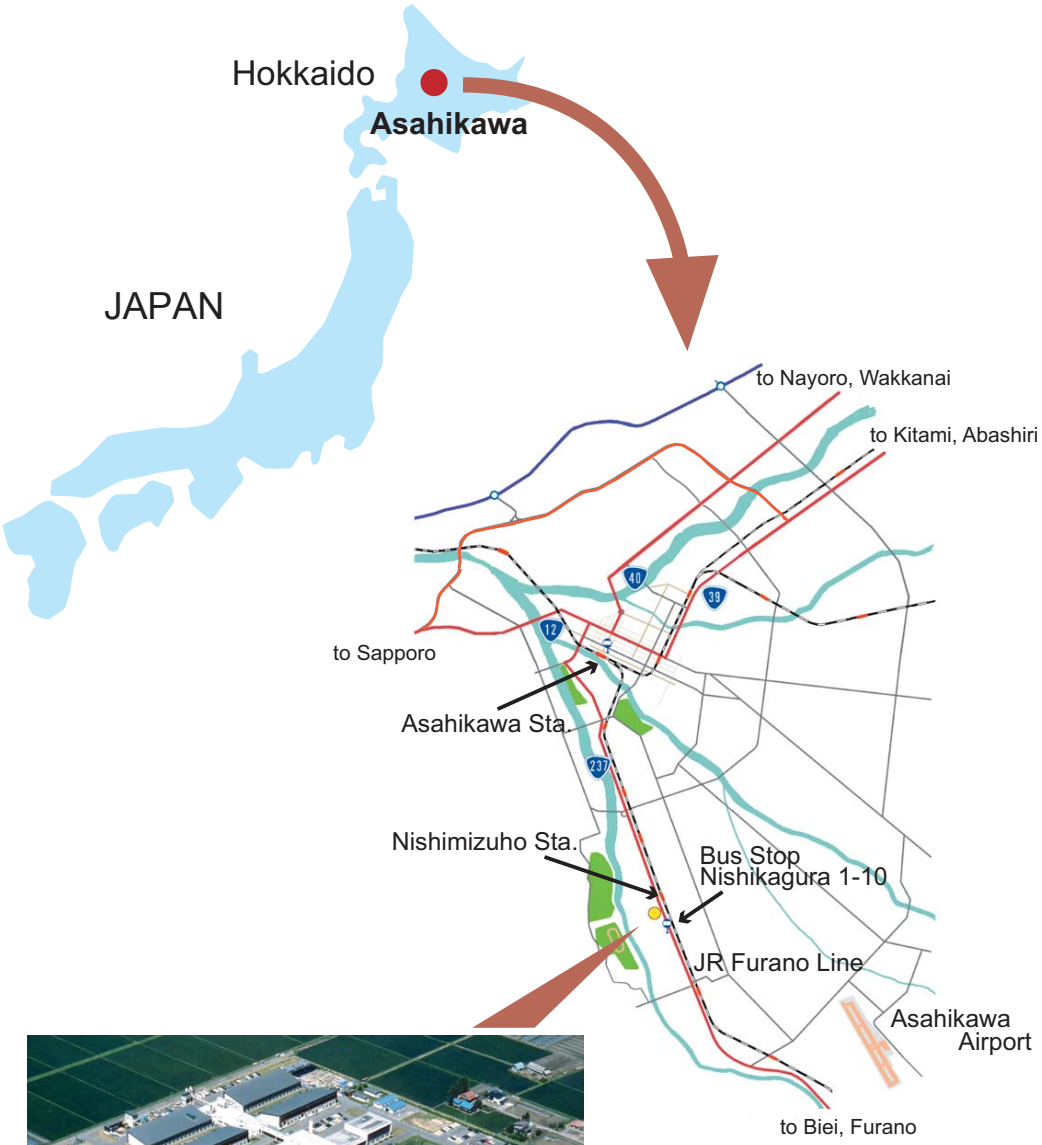
Woodwork experience

Woodcraft contest

HP for school-aged children

Organizational Structure of the Forest Products Research Institute

Director / Deputy Director	General Affairs Director	General Affairs Section	General affairs; financial affairs; commodities; property
	Corporate Supporting Director	Senior Research Manager	Planning & Extension Group	Planning and coordination of research and investigation; publications technical information; intellectual properties; technical consulting.
		Deputy Director	Technology Supporting Group	Planning and coordination of extension activities; technical guidance; technical training; research support.
	Timber Engineering Director	Senior Research Manager	Wood Protection & Timber Construction Group	Development of timber construction and performance evaluation of wooden members and joints; protection of wood against biodeterioration and fire.
		Senior Research Manager	Living Environment Group	Development and performance evaluation of wood-based materials, components and living environment.
	Wood Utilization Director	Senior Research Manager	Material Group	Evaluation of wood quality and environmental impact; development of technology for producing eco-friendly materials.
		Senior Research Manager	Mushroom & Applied Microbiology Group	Breeding of mushroom varieties and development of applied technology by microorganism.
		Senior Research Manager	Biomass Group	Effective use of wood constituent by chemical conversion; energy use of forest biomass by thermal conversion; recycling under the cascade use of woody material.
	Wood Processing Director	Senior Research Manager	Industrial Technology Group	Improvement and development of wood industry and structure of timber process; sawing, drying, cutting and superior engineered wood processing techniques.
		Senior Research Manager	Product Development Group	Development of new product, crushed wood molding techniques, machinery and devices for wood products.



Forest Products Research Institute

WEB SITE URL
http://www.fpri.hro.or.jp

● Outline	Outline, History and Organization
● Contents	Research, Technology and Information Service
● Guide Map	Guide map and rough sketch

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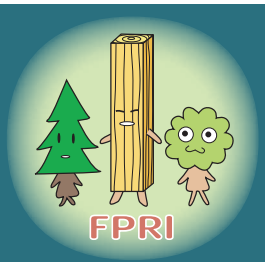

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