

*„The first Skin and Body Care Series with
naturally effective pine heartwood ingredients.“*

Made in Germany.



Healthy Skin.

Foreword

More than pretty and practical.

Many appreciate wood for its beauty, aesthetic appeal and the pleasant, warm atmosphere that it creates. Others see the static and practical properties of wood in the foreground. Few, however, agree on the health properties of wood. In particular the unprecedented and still largely untapped health properties of pine heartwood.



The long-living Bristlecone Pines of California live up to 4,000 years and older. They are older than the pyramids and reach an altitude of 3,300 meters. "Paradoxically, the pines get so old because they continually cope with the adverse growing conditions," said Patti Wells, a botanist with the U.S. Forest Service. Pine wood is very resinous and thus a good protection against fungi and insects. But even insects use this plant's defensive advantage. Swiss researchers found evidence that ants arm themselves with small pieces of resin for protection against bacteria and fungi, greatly increasing their survival rate. Birds and bees also use the resin to seal their nests.

Although the effect of Zirbe pine has been known for centuries, it is rarely used. The Joanneum Research Institute in 2002 studied the positive qualities of the wood and their effects on people. In particular, the proven effect the wood has on sleep. In another hygiene study, the latest research results from the "British Food Journal" confirms that only pine heartwood due to its antibacterial capabilities, kills bacteria faster than other types of wood and also faster than polyethylene!

Development for a healthy living environment

Based on these health effects, various products have recently been developed by the Wilms® company which use the germ- and fungi-killing effect for people. The skin care product Wilms® PineGold, uses the active ingredients and the strength of the wood to care for the skin and to alleviate various skin ailments. The Wilms® Hygienic Wood Bath Mat is anti-fungal and especially good for people who have or are preventing problems with athlete's foot or other foot fungus.

The Bed Mat is a type of mattress made from pine heartwood which has been proven to be antibacterial and germ-free. Especially important however is the mite-reducing effect which helps allergy sufferer and the deeper, restful sleep that is achieved.

Pine heartwood kills bacteria and germs quickly and thoroughly. This phenomenon has existed over millions of years in nature and was perfected to help trees to survive. The Wilms entrepreneurs say that, „The strong germ-reducing properties of the wood have been known for centuries. We should take advantage of these positive qualities!“ ■

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1. **PineGold** Skin and Body Care Series

— pine heartwood skin care —

The Wilms® PineGold care series makes it possible to use the protective properties of pine heartwood for skincare. All PineGold care products use the extraordinary power of pine heartwood for daily health and well-being.

The natural power of pine

Pine heartwood has built its power through hundreds of generations of nature. Because of its unique wood, the trees remain healthy.



Scientists agree that a combination of many ingredients is responsible for the positive effects of pine heartwood. The rule here, like everywhere in nature, is synergy - an ideal combination of ingredients that produces an extraordinary effect through careful, sensitive processing.

The Pine Tree. A classical medicinal plant.

The pine tree has been rated as a very much appreciated medicinal plant at all times. The healing properties of pine resin, shoots and needles have been known and used for a long time. However, the most valuable active substances can be found in the heartwood of the pine. It contains many active substances which have a positive effect on skin and health.

We promise!

All ingredients are compliant with natural cosmetics.

We do not use synthetic scents, colorants or preservatives. Furthermore, we do not use mineral oil based raw materials. ■

1.1 ^{Wilms®} PineGold Facial Toner

— pine heartwood skin care —

Stabilizes sensitive and stressed skin.

PineGold Facial Toner is a purely natural way to use precious pine heartwood ingredients for skincare. Recent studies show that the extract significantly improves the skin.

It leaves the skin calm and balanced and minimizes skin cracks, reddening and tensions.

The Toner soothes stressed skin and strengthens the skin's natural protective barrier.

The light formula is quickly absorbed, refreshes and vitalizes.

- Calms and clarifies skin
- Stabilizes sensitive, stressed skin
- Strengthens the skin's protective barrier



From the Research

Tested and approved

Prof. Dr. Michael Jünger of the Ernst-Moritz-Arndt University of Greifswald, Germany, investigated the effects and tolerability of Wilms® pine heartwood extract on 13 volunteers' hands, for three weeks. The study focused on the effects the extract had on different types of skin problems.

Results of the study:

Pine heartwood extract was shown to give vast improvement to dry, tense, aging and cracked skin. There was a significant improvement in skin moisture reported and a decline in skin redness. It also improved the skin's natural barrier function.

INCI (CTFA): Aqua (Water), Pinus Sylvestris (Scots Pine Heartwood) Extract, Salix Nigra (Black Willow) Bark Extract, Polyglyceryl-10 Laurate, Glyceryl Caprylate.

Application:

Shake before use. Liberally spray onto face and neck, gently massage into skin and allow to dry. No rinsing necessary. Especially suitable for sensitive, impure and oily skin. Due to its aqueous consistency the Toner is also ideal for the care of a stressed scalp and irritated skin areas. Use as pleasant treatment anytime a refreshment is needed.

For external use only. ■



Healthy Skin.

1.2 **PineGold** Nourishing Gel

— pine heartwood skin care —

Refreshing and cooling.

The Nourishing Gel is a unique, refreshing skin care with a high amount of pleasant pine heartwood ingredients.

The extra light and oil-free formula is quickly absorbed and leaves the skin clear and energized.

The fresh scent of pine needles awakens the senses.

- Refreshing and cooling
- Leaves skin clear and energized

INCI (CTFA): Aqua (Water), Pinus Sylvestris (Scots Pine Heartwood) Extract, Citrus Limon (Lemon) Fruit Water*, Parfum, Xanthan Gum, Pinus Sylvestris (Scots Pine) Leaf Oil, Chondrus Crispus (Carrageenan) Powder, Glyceryl Caprylate, Sodium Phytate, Glucose, Limonene**.

* from certified organic agriculture

** from essential oil

Application:

Gently massage into skin and allow to dry. Apply as often as needed. The gel can be used as refreshment for in between or as an additional care for face and body. Suitable for normal to oily and stressed skin. ■



1.3 ^{Wilms®} PineGold — pine heartwood skin care — Vitamin E Skin Gel

Regenerating care with Vitamin E.

The Vitamin E Skin Gel contains next to a high amount of pine heartwood ingredients additional care components such as organic oils from jojoba and apricot kernels.

An extract from arnica flower supports the soothing and beneficial effect of pine ingredients.

This vitalizing formula is enriched with vitamin E, which protects and cares and intensively regenerates the natural protective barrier of the skin.

The gel is quickly absorbed and refreshes and vitalizes.

- Restores and deeply regenerates
- Strengthens the skin's protective barrier

INCI (CTFA): Aqua (Water), Pinus Sylvestris (Scots Pine Heartwood) Extract, Citrus Limon (Lemon) Fruit Water*, Simmondsia Chinensis (Jojoba) Seed Oil*, Parfum, Prunus Armeniaca (Apricot) Kernel Oil*, Tocopherol, Helianthus Annuus (Sunflower) Seed Oil*, Chondrus Crispus (Carrageenan) Powder, Xanthan Gum, Pinus Sylvestris (Scots Pine) Leaf Oil*, Glyceryl Caprylate, Glucose, Sodium Phytate, Vanilla Planifolia (Vanilla) Fruit Oil*, Limonene**.

* from certified organic agriculture

** from natural essential oils

Application:

Gently massage into skin and allow to dry. Apply as often as needed. Suitable for the protection and care of face and body. Especially recommended for dry, demanding and stressed skin. ■

80%
Pine
Heartwood
Extract



Healthy Skin.

1.4 **PineGold** Lip Balm

— pine heartwood skin care —

Intensive care for dry and chapped lips.

In addition to the precious pine heartwood extract, it contains further nourishing ingredients.

Shea butter keeps lips soft and provides a natural UV-protection.

Carrot extract improves the natural skin function and soothes due to Pro-Vitamin A.

Calendula extract promotes the relief of dry lips.

PineGold Lip Balm is a natural prevention and treatment of tingling sensations around and on the lips.

- Moisturizes dry, chapped lips with intensive care
- Prevents tingling sensations
- Provides a smoothing and lasting lip care

INCI (CTFA): Aqua, Pinus Sylvestris (Heartwood) Extract, Ricinus Communis Seed Oil *, Carthamus Tinctorius Seed Oil *, Butyrospermum Parkii Butter, Simmondsia Chinensis Seed Oil *, Glycerin, Polyglyceryl-3 Polyricinoleate, Anthyllis Vulneraria Extract*, Cera Flava *, Glyceryl Oleate, Polyglyceryl-2-Dihydroxystearate, Hydrogenated Castor Oil, Zinc Sulfate, Daucus Carota Extract *, Calendula Officinalis Flower Extract *, Tocopherol, Helianthus Annuus Seed Oil *, Ascorbyl Palmitate, Glyceryl Caprylate, P-Anisic Acid.

* from certified organic agriculture

Application:

Apply to lips as needed. ■



1.5 ^{Wilms®} PineGold Body Lotion

— pine heartwood skin care —

For velvety soft and healthy skin.

Selected oils from jojoba, safflower, almond and shea butter deeply moisturize and comfort normal to dry skin.

The balancing and soothing effect of pine heartwood ingredients is enhanced by sea buckthorn and verbena extracts.

The Body Lotion leaves the skin smooth and soft and the natural aroma pleasantly refreshes.

- Leaves skin silky and smooth
- Supplies the skin with moisture
- Enhances the natural barrier function of the skin

INCI (CTFA): Aqua (Water), Pinus Sylvestris (Scots Pine Heartwood) Extract, Cocos Nucifera (Coconut) Oil*, Simmondsia Chinensis (Jojoba) Seed Oil*, Carthamus Tinctorius (Safflower) Seed Oil*, Lippia Citriodora (Lemon Verbena) Leaf Extract*, Hippophae Rhamnoides (Sea Buckthorn) Fruit Extract*, Butyrospermum Parkii (Sheabutter) Butter*, Betaine, Sodium Cetearyl Sulfate, Parfum, Prunus Amygdalus Dulcis (Sweet Almond) Oil*, Glyceryl Stearate, Tocopherol, Helianthus Annuus (Sunflower) Seed Oil*, Xanthan Gum, Lauryl Glucoside, Ascorbyl Palmitate, Glycerin, Glyceryl Caprylate, Sodium Phytate, Polyglyceryl-2 Dipolyhydroxystearate, Geraniol**, D-Limonene**, Linalool**, Citral**.

* from certified organic agriculture

** from natural essential oils

Application:

Apply all over body as needed – most effective after shower or bath. Massaging it gently into skin improves the blood circulation and makes skin supple and tender. For body and face. Suitable for normal to dry, as well as stressed and irritated skin. ■



60%

Pine
Heartwood
Extract



Healthy Skin.

1.6 **PineGold** Hand Cream

— pine heartwood skin care —

Richly moisturizing.

Due to its precious ingredients, the PineGold Hand Cream is an intensive care for dry and stressed hands.

Next to the naturally effective pine heartwood extract, the cream contributes to a lasting smooth skin due to almond oil and sheabutter.

Sea buckthorn extract soothes the skin and keeps it in a good condition.

- Richly moisturizes dry hands
- For soft and smooth skin

INCI (CTFA): Aqua, Pinus Sylvestris (Heartwood) Extract, Cocos Nucifera Oil*, Simmondsia Chinensis Seed Oil*, Cetearyl Alcohol, Tapioca Starch, Hippophae Rhamnoides Fruit Extract*, Cistus Incanus Flower Leaf/Stem Extract*, Glyceryl Stearate, Betaine, Myristyl Alcohol, Alcohol*, Parfum, Coco Glucoside, Prunus Amygdalus Dulcis Oil*, Butyrospermum Parkii Butter*, Xanthan Gum, Arachidyl Glucoside, Behenyl Alcohol, Glyceryl Caprylate, Pinus Pumilio Branch/Leaf Oil*, Tocopherol, Glycerin, Arachidyl Alcohol, Ascorbyl Palmitate, Helianthus Annuus Seed Oil*, Geraniol**, D-Limonene**, Linalool**, Citral**.

* from certified organic agriculture

** from natural essential oils

Application:

Apply small amount to clean hands and massage it in. Reapply as needed, especially in the evening on clean hands as an intensive overnight treatment.



1.7 ^{Wilms®} PineGold Natural Soap

— pine heartwood skin care —

Cleans and protects – purely natural.

The Wilms® PineGold Natural Soap cleans and cares for the skin in a natural way – gently and thoroughly. The pine heartwood ingredients have a positive effect on the skin - especially dry, cracked skin. The moisturizing mountain pine oil gives a nice sensation and provides long-lasting smooth skin. For daily skincare.

- Gentle, refreshing cleaning
- Pleasant aroma

Wilms® PineGold Natural Soap is a handmade soap made of natural ingredients.

INCI: Sodium Cocoate, Sodium Olivat, Glycerin, Pinus Sylvestris Wood (and) Aqua, Sodium Beeswax, Pinus Pumilio Oil, Limonene*.

* natural content of essential oil

Application:

The PineGold Natural Soap is skin friendly for face, hands and body, especially for sensitive skin. ■



Healthy Skin.

1.8 **PineGold** Shower Gel

— pine heartwood skin care —

Pleasant freshness and gentle cleansing.

Containing 60% pine heartwood extract, PineGold Shower Gel is the first one of its kind that nurtures the skin with the valuable ingredients from the pine tree trunk.

Sea buckthorn and marigold extracts have soothing and regenerating effects, in particular, when the skin is stressed.

Mild tensides derived from coconut and sugar ensure a gentle cleansing without drying out the skin.

- Pleasant freshness
- Gentle cleansing
- Invigorating aroma

INCI: Aqua, Pinus Sylvestris (Heartwood) Extract, Sodium Coco-Sulfate, Lauryl Glucoside, Hippophae Rhamnoides Fruit Extract*, Betaine, Parfum, Disodium Cocoyl Glutamate, Sodium Cocoyl Glutamate, Coco Glucoside, Glyceryl Oleate, Sodium Chloride, Calendula Officinalis Flower Extract*, Glyceryl Caprylate, Lactic Acid, Alcohol*, Sodium Phytate, Limonene**, Geraniol.

* from certified organic agriculture

** from natural essential oils

Application:

When showering, foam up Shower Gel and massage all over the body. Rinse. Ideal for daily use.

All washing-active substances are obtained from plant material and thus ensure good biodegradability. ■



1.9 **PineGold** Natural Shampoo

— pine heartwood skin care —

For shiny hair and healthy scalp.

The Natural Shampoo nurtures and protects hair and scalp in a unique way. The active pine heartwood ingredients provide healthy and supple hair and, moreover, enhance the vitality of the scalp.

The mix of active substances in the pine heartwood extract is completed by natural essences such as chamomile extract, stinging nettle extract and wheat proteins which provide sheen, suppleness and body.

- Provides shiny and supple hair
- Soothes and nurtures the scalp

INCI (CTFA): Aqua (Water), Pinus Sylvestris (Scots Pine Heartwood) Extract, Glycerin, Sodium Coco-Sulfate, Lauryl Glucoside, Urtica Dioica (Nettle) Extract*, Betaine, Parfum, Disodium Cocoyl Glutamate, Sodium Cocoyl Glutamate, Coco Glucoside, Glyceryl Oleate, Sodium Chloride, Hydrolyzed Wheat Protein, Chamomilla Recutita (Chamomilla Vulgaris) Flower Extract*, Glyceryl Caprylate, Stearyl Citrate, Lactic Acid, Sodium Phytate, D-Limonene**.

* from certified organic agriculture

** from natural essential oils

Application:

Massage into wet hair and scalp and allow to take effect for a few minutes. Rinse. For best results, follow with PineGold Conditioner. For the daily care of any type of hair. Also ideal for a dry, itching and scaly scalp. ■



1.10 **PineGold** — pine heartwood skin care — Conditioner

Intensive care for smooth hair and increased manageability.

The unique combination provides full hair and strengthens it.

High quality wheat proteins make the hair soft and increase the overall strength.

Sheabutter moisturizes the hair and nurtures the scalp, sea buckthorn has a regenerative effect.

An extract from birch leaves and pracaxi oil provide additional protection and care.

- **Makes it easier to comb the hair**
- **Provides easy fullness, velvety shine**
- **Care from scalp to the tip of the hair**

INCI: Aqua, Pinus Sylvestris (Heartwood) Extract, Potassium Cocoate, Potassium Oliviate, Glycerin, Citric Acid, Sulfated Castor Oil, Guar Gum, Limonene*.

* natural content of essential oil

Application:

Massage into wet hair after shampooing with PineGold Natural Shampoo and leave it on for a few minutes. Rinse thoroughly. Suitable for all types of hair. In case of dry or stressed hair apply regularly. ■



1.11 **PineGold** Toothpaste

— pine heartwood skin care —

For teeth, gums and oral flora.

Contains pine heartwood extract.

PineGold Toothpaste is the first toothpaste to use the naturally effective ingredients of pine heartwood. Pine heartwood is antibacterial, antifungal and germ-reducing. This toothpaste cleans the teeth thoroughly while also helping to establish and maintain vital gums. The ingredients of the wood also positively effect the overall oral ora.

- Cleans thoroughly with calcium and magnesium oxide
- Delicate to the gums through the ingredient boswellia serrata gum
- Fresh taste of menthol-free spearmint oil
- Homeopathically compatible

From an extract to a toothpaste

Dr. med. Peter Freyer, a dentist in Bünde, Germany, has been recommending use of the pine heartwood extract since 2008 for ailments such as gingival inflammation, bleeding gums and even periodontosis.

Through regular gargling and rinsing with the extract, almost all of his patients reported their pains were alleviated. As a result, Dr. Freyer was interested in cooperatively developing a toothpaste using the extract.

The toothpaste was developed following some important guidelines. It needed to be made of purely natural or mineral ingredients, homeopathically compatible and safe. What emerged is a new, high quality, effective toothpaste with a soothing effect that you will notice – each time you brush.

The toothpaste is homeopathically compatible with a mild, fresh taste.

Without the addition of:

sugar and sweeteners, fluorides, color and preservatives, synthetic flavorings.

INCI (CTFA): Glycerin, Aqua (Water), Pinus Sylvestris (Heartwood) Extract, Calcium Oxide, Magnesium Oxide, Zeolite, Hydrated Silica, Sodium Chloride, Xanthan Gum, Sodium Cocoyl Glutamate, Disodium Cocoyl Glutamate, L-Carvone, Boswellia Serrata (Olibanum) Gum, Commiphora Abyssinica (Myrrh) Resin Extract, Sodium Phytate, Glyceryl Caprylate, Sodium Hydroxide.

Application:

This toothpaste is applied the same as all others. Put PineGold Toothpaste on your toothbrush to clean your teeth and gums as recommended by dentists. ■



20%
Pine
Heartwood
Extract



Healthy Skin.

1.12 Research

1.12.1 Effectiveness of pine heartwood extract against the Herpes Simplex Virus Type 1¹

Objectives

Is Wilms® pine heartwood extract effective against Herpes viruses?

Approach

The pine heartwood extract was diluted and combined with the HSV-type 1 virus. After 24 hours the samples were evaluated.



Result

The pine heartwood liquid extract has disinfectant effects. Maximum effectiveness is reached in an incubation period of one hour. Interestingly, there was a significant effect when anti-herpes viraler incubation temperatures of 37 °C were observed.

Conclusion

The results of this study show a very strong and inhibiting effect of the pine ingredients on the herpes virus.



Implementation

Prof. Dr. med. Joachim Kühn,
Institute for Medical Microbiology - Clinical Virology,
Universitätsklinikum Münster,
Von Stauffenberg-Straße 36, 48151 Münster, 2006

¹ Data: Kühn, Joachim(2006) : Study of the efficacy of watery pine heartwood extract for Herpes Simplex-Virus Type 1

1.12.2 Effectiveness and tolerability of pine heartwood extract as a skin care product²

Objectives

Does Wilms® pine heartwood extract have a positive effect on stressed skin?

Approach

Wilms® pine heartwood extract was used over a period of three weeks by 13 subjects with either red, dry, fissured, eroded, or scaling skin on their hands. Other normal skincare practices by the participants was allowed. Three times a day pine heartwood extract was applied.



Result

Skin moisture improved significantly in subjects and they reported a decline in skin redness. It showed an improvement in skin barrier function.

Even skin symptoms such as dryness, tension and skin cracks showed significant improvements.

Conclusion

...In my view, the results are very promising...

Prof. Dr. M. Jünger, Direktor der Klinik



Implementation

Prof. Dr. Michael Jünger,
Ernst-Moritz-Arndt-University Greifswald
Clinic and Polyclinic for skin diseases,
Fleischmannstr. 42/44, 17489 Greifswald, 2006.

² Data: Jünger, Michael (2005): Clinical efficacy and tolerability test of the pine heartwood extract of Company Wilms as a skin care and stabilization product with healthy test persons and those with a history of atopy



2. Wilms® Hygienic Wood

Wilms® Hygienic Wood uses the power of nature found in the heartwood of pine trees. At the center of the tree is where the antibacterial and germ-free ingredients are located. Through a patented process the Wilms company, reinforces these natural defense properties. **The result: Wilms® Hygienic Wood.**

2.1 Health through wood

Pine trees have been in our forests for 10,000 years. It is a symbol of resurrection, persistence and perseverance.

Pine is an extremely resilient and strong tree. This is reflected by the areas in which they grow. They are often located in places that are difficult for trees to flourish.

They are found in forests but are also seen growing on bare rock. This shows that pine wood needs highly efficient heartwood properties.



Pine as a remedy

Early on pine wood was often used in home remedies. The resin, for example, was used for the softening of ulcers, and the bark of pine was smoked and used for women's diseases. The bark and needles of pine were later used in medicine as ointments or baths. Pine was also used for people with rheumatic and lung diseases. In the 12th Century people used pine for coughing or kidney/bladder ailments.

These early applications over time have been studied and many, scientifically confirmed.

For topical application, pine helps with fatigue, insomnia, nervousness, wounds and skin diseases, rheumatism and circulatory disorders.

The wood itself also rids pathogens. In recent years, numerous studies have confirmed that the wood effectively kills germs, bacteria, viruses and fungi. The studies showed that in particular the core of pine wood has exceptional defense forces.

Wilms® Hygienic Wood is processed pine heartwood. Through a patented process the Wilms company has reinforced this natural defence. This non-chemical process strengthens the absorption of the wood so that bacteria and germs quickly transported into the wood and then killing them. Applications for Wilms® Hygienic Wood are endless: cutting boards, bath and bed mats, keyboard covers, etc. Wilms® Hygienic Wood products can be used in multiple types of situations to improve the living environment of people in a natural way. ■

2.2 Research

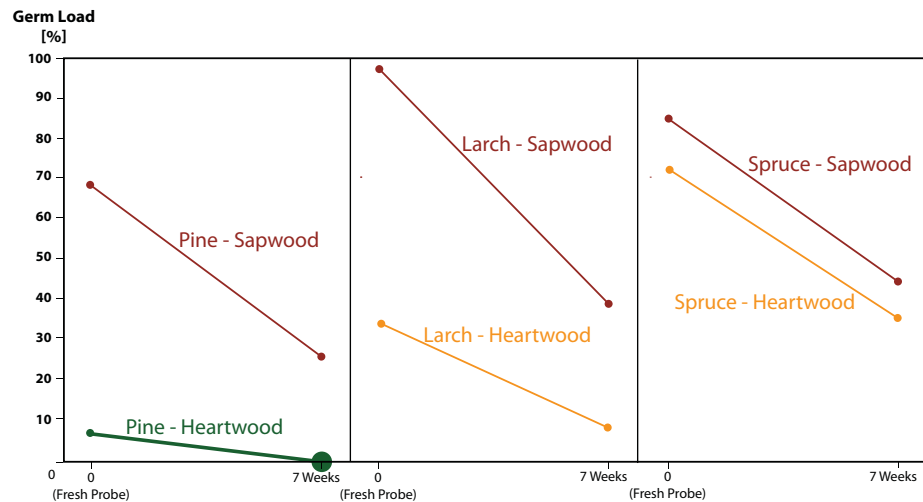
2.2.1 Hygienic and phytosanitary properties of wood and wood products

Objectives

Does wood have antibacterial properties? And if so, does the wood species and different fractions make a difference?

Approach

The test materials were 1×10^6 cfu / cm² (total number of bacteria live per sq. cm) infected with the E.coli bacterium. The development of bacterial populations was during a 7-week storage period, and is seen in the graph shown below.



Germ load on different sapwoods and heartwoods³

Result

The results clearly show that when assessing the germ- and bacteria-killing effects of wood, the differentiation between not only the species of the tree is important, but which section of the tree is also crucial.

Conclusion

Germs are most rapidly decreased and killed on pine heartwood.

Implementation



Annett Schönwälder,
Federal Biological Institute for Agriculture and Forestry,
Messeweg 11/12, 38104 Braunschweig, 2000.

³ Data: Schönwälder, Annett (2000), S. 17; Graphical composition: Fa. Wilms GmbH

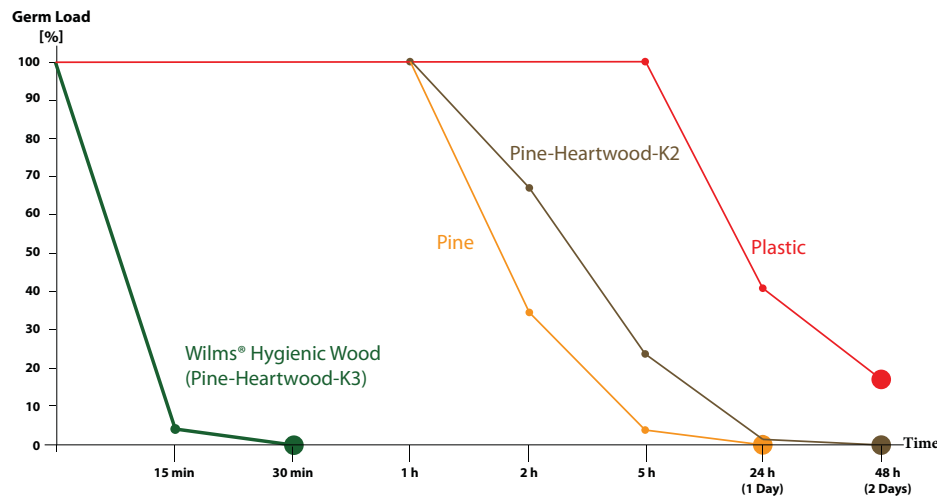


Objectives

Is it possible to increase the hygienic properties of pine heartwood?

Approach

Samples of pine heartwood were processed differently and then each 1×10^6 cfu / cm^2 (total number of bacteria live per sq. cm) were infected E.coli bacterium. The development of bacterial populations was observed during a 48 hour period and is shown in the following diagram.



Germ load on Wilms® Hygienic Wood, Pine-Heartwood-K2, Pine und Plastic ⁴

Result

After a washing and drying procedure „K3“ the pine heartwood killed germs far faster than the other wood. This method improves the hygroscopic properties of the wood so that the wood is able to absorb liquids much faster. Test organisms that are located in the liquids are therefore more in contact with the contents of the wood. This patented procedure (EP-Nr. 1005964) is used for Wilms® Hygienic Wood.

Conclusion

The Wilms® patented washing and drying procedure greatly improved the hygienic properties of pine heartwood.



Implementation

Annett Schönwälder,
Federal Biological Institute for Agriculture and Forestry,
Messeweg 11/12, 38104 Braunschweig, 2000.

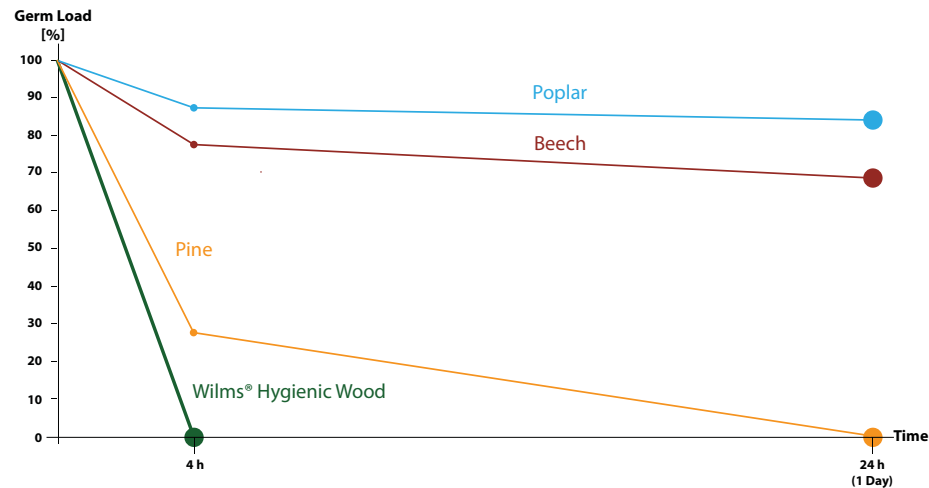
⁴ Data: Schönwälder, Annett (2000), S. 51; Graphical composition: Fa. Wilms GmbH

Objectives

Can germs live inside the wood or will they be reduced/eliminated?

Approach

The test materials were 1×10^6 cfu / cm² (total number of bacteria live per sq. cm) wood infected with the E.coli bacterium. The development of bacterial populations was tested 1mm deep after 4 and also 24 hours. The results are shown in the following diagram.



Germ load inside the wood⁵

⁵ Data: Schönwälder, Annett (2001), S. 62; Graphical composition: Fa. Wilms GmbH

Result

When tested after four hours, the Wilms® Hygienic Wood had no germs left.

Conclusion

Bacteria is soaked into the Wilms® Hygienic Wood, where it is actively fought and killed.



Implementation

Annett Schönwälder,
Federal Biological Institute for Agriculture and Forestry,
Messeweg 11/12, 38104 Braunschweig, 2000.



2.2.2 Germ reduction by Wilms® Hygienic Wood compared to other materials

Objectives

What are the antibacterial properties of Wilms® Hygienic Wood compared to other materials such as glass, stainless steel and plastic?

Approach

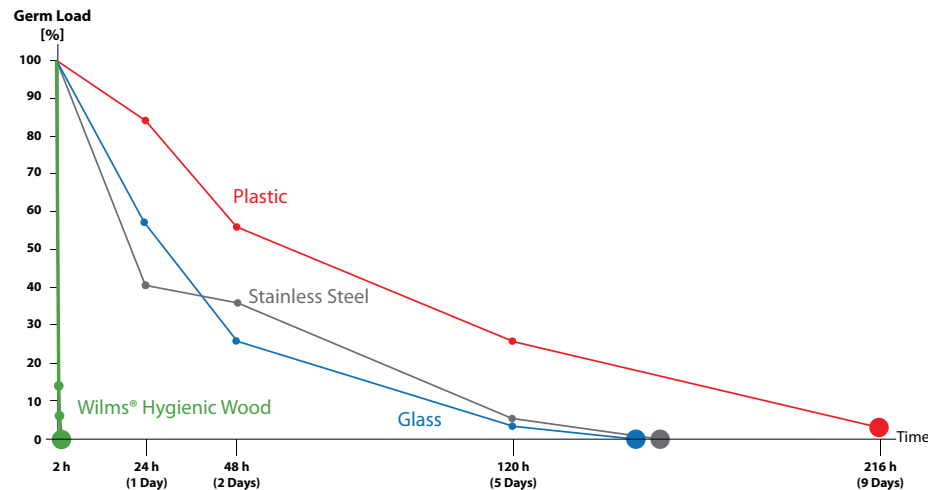
The test materials were each infected with 1×10^6 cfu / cm² (total number of bacteria live per sq. cm) of the E.coli bacterium. The development of bacterial populations was over a period of nine days, and is seen in the following chart.

Result

Particularly significant is the rapid destruction (2 hours) of all micro-organisms by Wilms® Hygienic Wood, while the other materials still had bacteria after 120 hours (polyethylene after 216 hours).

Conclusion

On Wilms® Hygienic Wood bacteria are reduced significantly faster than on glass, stainless steel and plastic.



Germ load on Wilms® Hygienic Wood, glass, stainless steel and plastic⁶



Implementation

Annett Schönwälder,
Federal Biological Institute for Agriculture and Forestry,
Messeweg 11/12, 38104 Braunschweig, 2000.

⁶ Data: Schönwälder, Annett (2001), S. 66; Graphical composition: Fa. Wilms GmbH

2.3 Further Research Institutions



Federal Biological Institute for Agriculture and Forestry



University Hospital Jena



Ernst-Moritz-Arndt-University Greifswald
Clinic and Polyclinic for skin diseases



Institute for Environmental Medicine and Hospital
Epidemiology,
Institute for Plant Virology, Microbiology and Biosafety



Institute for Medical Microbiology - Clinical Virology,
Universitätsklinikum Münster



University Albstadt-Sigmaringen



German Institute of Food Technology



Mikrolab



Hygiene Nord GmbH



University Hospital Freiburg

Read more about our research at: www.pine-healthcare.com



IS Insect Services GmbH



2.4 International Awards

International Invention Fair of the Middle East in Kuwait 2010 - Gold Medal



Geneva Exhibition of Inventions 2010 - Bronze Medal



Geneva Exhibition of Inventions 2008 - Two Gold and Two Silver Medals



Exhibition of Inventions in Nürnberg, Germany 2009 - Silver Medal



Exposition INPEX in Pittsburgh 2010 - Gold Medal



Exhibition of Inventions in Nürnberg, Germany 2010 - Showcase project



3. The Wilms Company

3.1 Our Mission



The goal of the Wilms® company is to improve your living environment in a natural way. We make the positive effects of nature available to you through ideas, development of new products and through continuous research.

3.2 Company Profile

The Wilms® Pine Wood Healthcare Company is an innovative german company under the brand PineGold. For more than ten years now, we have produced healthcare products on the base of pine heartwood. In this context, the main focus is to research the positive antibacterial effects of pine heartwood on our health. We are a



recognized leader in the innovation, product development, research, design and manufacturing of healthcare products made of pine heartwood. Our products are exported worldwide - from Europe to the Middle East.

The Wilms company was created in 1893 as a private firm. Since that time, it has been passed down and still remains run by the Wilms family. The enterprise is an open commercial company under the leadership of Heinrich Wilms and Katharina Wilms. The Wilms company currently employs approximately 120 people at two locations.

3.3 Products Manufactured by our Company

All our natural products are based on pine heartwood. We supply natural healthcare products, such as shampoo, hand & body cream, liquid soap, bar soap, shower gel, tooth paste.

Our Bed Mats help reduce dust-mite allergy symptoms; our germ-reducing Bath Mats are also very popular. In addition, we develop new products for our customers, which use the positive effect of pine heartwood. Our certified products have won numerous awards - and enjoy high name recognition on the European market. →



3.4 Environmental Responsibility

Wilms® Hygienic Wood is committed to maintain a responsible attitude toward the environment.

We strive to protect natural resources and the environment - especially in the processing of natural raw materials such as wood. We are obliged to take care of nature to ensure a healthy environment for future generations and to make certain that we leave the natural habitat intact.

Therefore, we make every effort to make environmentally friendly decisions:

■ Wood from sustainable forestry

Wilms® uses the heartwood of pine trees that come from PEFC certified forests. We obtain wood from companies that operate under sustainable forest regulations. This means that they plant more trees than they cut down.



■ No tree is cut especially for Wilms® Hygienic Wood

We use the core of the wood that is leftover from wood veneer manufacturers since it can only be peeled into strips up to a certain diameter. This inner portion is round with a diameter of about 8cm. This is our valuable raw material. **No trees are cut down for our Hygienic Wood products.**



■ Efficient energy use

Our innovative production guarantee optimally utilizes energy - economically and above all environmentally friendly.

Wood - CO2 Neutral

Products made of wood lead to an important environmental advantage. The extraction and processing of wood requires significantly less energy than other materials. Everywhere wood products can replace those made of other materials that require high energy to be produced, the result is an ecological advantage - especially for example, our wooden cutting boards.

Material of the Future

Our Hygienic Wood is antibacterial and non-chemical. This is definitely the way of the future. With its diverse health-promoting properties, Hygienic Wood plays an important role in the field of natural health. ■

3.5 Contact

For more information, please contact us.

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