

Kop-Coat Inc.

Technology in Sapstain and Mold Chemicals

April 2014



Leaders in specialty chemical programs to protect building materials, forest products, and farm products from biological and weathering damage.

Serving the Global Forest Industry with Total Wood Protection Solutions



Primary Products

- Lumber
- Fencing
- Panels (New)
- Ties (New)



Secondary Products

- Windows
- Doors
- Weatherboards
- Decks (New)



Building Components

- Home Frames
- Walls and Floors
- Engineered Wood (New)
- "Whole House" (New)



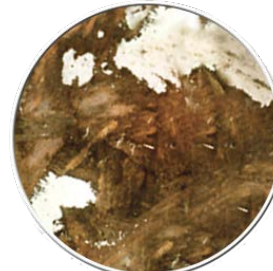
Mildew



Mold



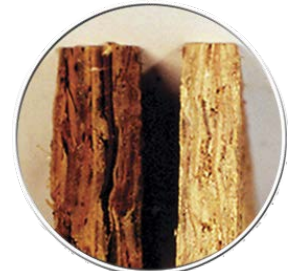
Stain fungi



Rot



Termites



Weather

Farm & Forest Protection Products

KOP-COAT
Wood Protection Products

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Farm Plants

- Pastures
- Crops
- Vineyards
- Horticulture (New)
- Orchards (New)



Farm Animals

- Cattle
- Sheep
- Deer
- Dairy (New)



Forests

- Nursery
- Initiation
- Release
- Maintenance



Weeds



Wilt

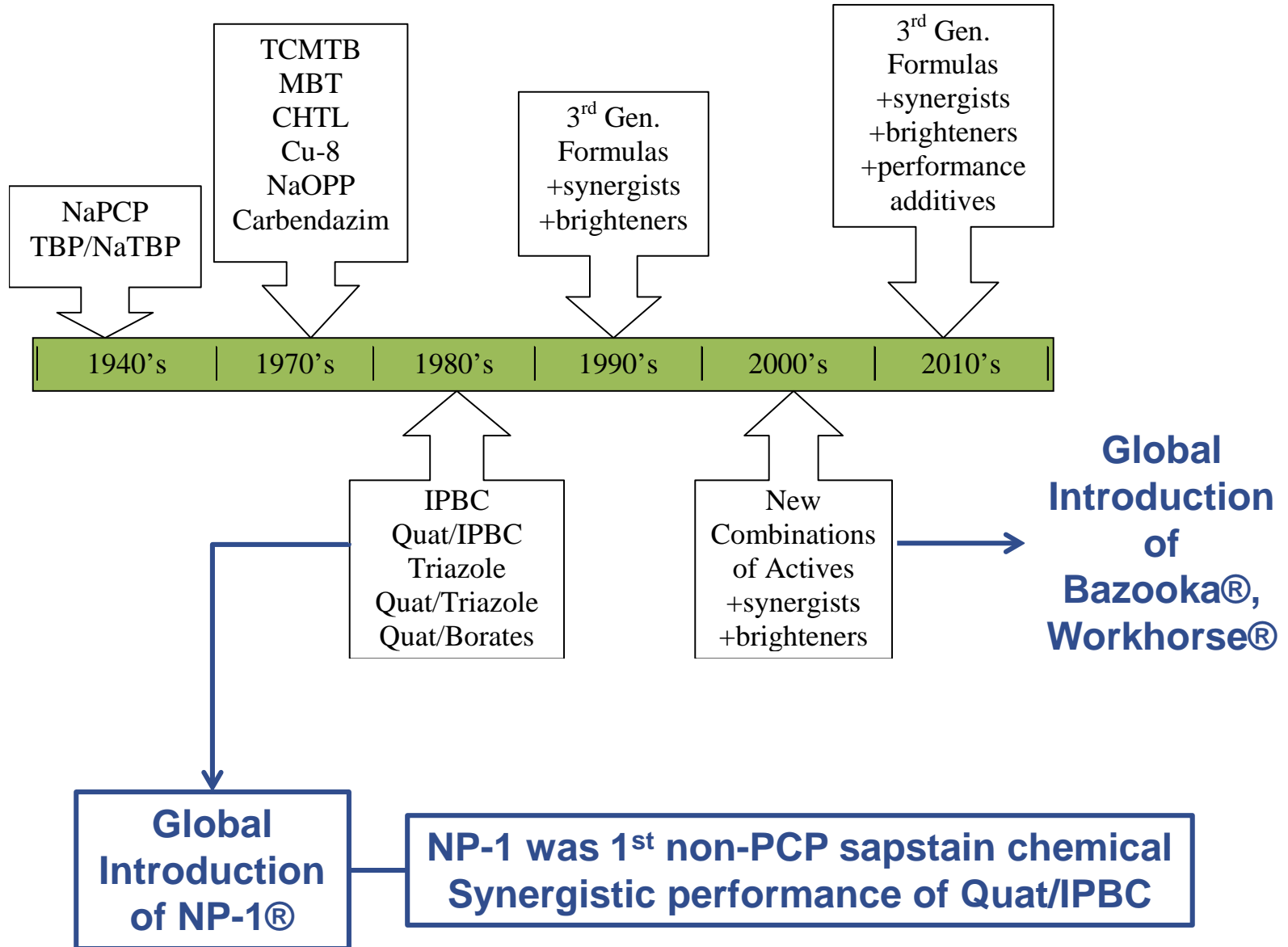


Waste



Worms

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What is the current state of technology in sapstain chemicals?

- Kop-Coat Inc. remains the only wood preservation chemical that has patented, globally utilized, and 3rd party performance validated technology based products.
- Commodity chemicals rely on simply putting on more chemicals
- Kop-Coat Inc.'s technology products are based on adjuvants
 - Adjuvants make the pesticides work better
 - You can RESPONSIBLY add less pesticides with the same or better performance

What are adjuvants?
Why adjuvants?

Adjuvants

- Inert, benign chemicals that make high performance chemicals work better
- Historically, adjuvants utilized in agricultural industry to make herbicides work better
 - Wetters
 - Stickers/Spreaders
 - Penetration Adjuvants
- Kop-Coat pioneered the use in the wood preservation market & will continue to do so!

Why?

The pesticidal chemicals available to the Wood Preservation Market is drying up.

ALL pesticide manufacturers SHOULD be looking for ways to make the current formulas work better

	Non-Crop Fungicide Market	US Wood Preservative Market	Agricultural Adjuvant Market
2012	\$11,144,932,291.52	\$5,512,000,000.00	\$2,170,000,000.00
2013	\$12,294,464,745.20	\$5,594,680,000.00	\$2,278,500,000.00
2014	\$13,562,564,528.62	\$5,678,600,200.00	\$2,392,425,000.00
2015	\$14,961,461,145.75	\$5,763,779,203.00	\$2,512,046,250.00
2016	\$16,504,645,500.00	\$5,850,235,891.05	\$2,637,648,562.50
2017	\$18,207,000,000.00	\$5,937,989,429.41	\$2,769,530,990.63
2018	\$19,390,455,000.00	\$5,939,177,027.30	\$2,960,000,000.00
2019	\$20,650,834,575.00	\$5,940,364,862.70	\$3,108,000,000.00
2020	\$21,993,138,822.37	\$5,941,552,935.67	\$3,574,200,000.00
2021	\$23,422,692,845.82	\$5,942,741,246.26	\$4,110,330,000.00
2022	\$24,945,167,880.80	\$5,943,929,794.51	\$4,726,879,500.00
2023	\$26,566,603,793.06	\$5,945,118,580.47	\$5,435,911,425.00
2024	\$28,293,433,039.61	\$5,946,307,604.19	\$6,251,298,138.75
2025	\$30,132,506,187.18	\$5,947,496,865.71	\$7,188,992,859.56

- TGA1 manufacturers are not doing new product synthesis
- New R&D is being focused on the herbicide industry.....not wood.
- The cost to register an existing active under a new use pattern has ↑ ↑ ↑ ↑ ↑ ↑ ↑

- ❖ All of these technologies are Patented
- ❖ Lab, field and commercial demonstrated success
- ❖ Does not require biocide additive(s) designed to be added at the tank

Bazooka

- EPA registered, Fit-for-purpose for sapstain/mold on green/dry lumber
- Synergistic combination of 3 actives
- TANO® adjuvant

Workhorse

- EPA registered, Fit-for-purpose for sapstain/mold on green/dry lumber
- Synergistic combination of 3 actives
- TANO® adjuvant

Moldshield

- EPA registered, Fit-for-purpose for sapstain/mold on dry Pine lumber
- Synergistic combination of 3 actives
- TANO® adjuvant

The REAL Performance of Adjuvants

Serving the Global Forest Industry with Total Wood Protection Solutions

- Kop-Coat Inc.'s K200 Laboratory Bioassay Test
 - Validated in Field Mini Bundle Tests & a decade of commercial success

			Day 7	Day 14	Day 21	Day 28	Day 35	
	RTU ppm Actives	RTU ppm Adjuvants	% Surface Protection	% Surface Protection	% Surface Protection	% Surface Protection	% Surface Protection	
Workhorse®*	490	2310	120	104	95	89	80	←
Workhorse® (w/o TANO)	490	0	80	51	44	30	19	
Bazooka®*	1099	3680	123	111	103	99	89	←
Bazooka® (w/o TANO®)	1099	0	87	54	43	34	24	
TANO® (10% aqueous)			4	0	0	0	0	
Woodtreat™ XP	5940	n/a	99	92	70	42	23	} Commodity Chemicals
Woodtreat™ XL	5045	n/a	86	26	18	3	0	
Woodtreat™ P	7611	n/a	42	18	5	0	0	
+ Bazooka® Control		25:1	150	145	133	133	133	
- Untreated Control			0	0	0	0	0	

K-200 Greenwood Bioassay using red pine as the sample and a Deuteromycete, Ophiostoma, Cladosporium, Aspergillus, Fusarium, etc., fungal blend as the inoculum. Each red pine disc was dipped for 3-5 seconds in varied dilutions of test solutions and allowed to dry 1-2 hours. The positive control was Bazooka at 25:1 and the negative control was untreated. Ten replicates were used for each test dilution. Evaluations were done 7,14,21,28 & 35 days incubation at 30°C and 90% relative humidity.

100% Surface protection = no growth on wood disc
>100 % protection = zone of inhibition around wood disc
<100 % protection= % of disc covered growth

*Workhorse & Bazooka are patented products only available through Kop-Coat

- ❖ All of these technologies are compatible with anti-sapstain/mold products

Brighteners

- Iron Fix™ Family
- Enact™
 - Developed for the SYP and white wood markets for POWERFUL brightening

Breathable Resin Based Coatings

- Proprietary S.O.T.A resin
- Restrict the exudation of mobile food sources/moisture to the surface
- Demonstrated competitive success by the leading Canadian Forest Product Lab
 - WRS™
 - DRIWRAP™
 - Endshield™

Penetrator

- Designed for heavily pre-infected lumber
- Allows anti-sapstain chemicals to penetrate further into wood
 - Take the battle to the organism, rather than at surface
 - MASSIVELY increases protection time frame

St. Louis

- Main Manufacture Facility
 - 5 million gallon capability
- QA/QC lab
 - ISO lab protocols
 - HPLC/XRF/Full Wet Chemistry
 - Tank Balancing
 - Field Test Kits



Harmar Global R&D Laboratories

- Full Analytical Lab
 - Wet Chemistry-Standard & Environmental
 - ICP
 - Triple Quad GCMS/MS
 - HPLC
- Field Test Kit Development (Lab to Field)
- Microscopy Division
- Microbiology
- Engineering
- Full Pressure Treating Pilot Facility



Kop-Coat Total Quality Management System

Serving the Global Forest Industry with Total Wood Protection Solutions

- Our QA/QC Program ensures the highest Quality Assurance at EACH & EVERY step of the process.
- **Highest value added to the lumber through consistent analytical verification**
- **NO COST TO THE CUSTOMER**

Manufacturing/QC:

Finished goods prepared by certified Master Blenders. Actives and performance additives analytically verified for each batch

Harmar QC Lab:

KC Field rep submits random samples for analytical validation of field test kit

Purchasing/QC:

Raw Materials purchased with stringent spec. reqt's. All materials tested.

KC Tech Rep/ Customer Employee :

Concentrates and dilutions verified volumetrically and chemically (Field test kits).

Harmar QC Lab/ 3rd Party Lab:

Wood Punch samples submitted to verify proper retention of chemicals

**Customer
Success
&
Marketplace
Control**