Propolis
Protection of the City

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Bees Make Propolis

Propolis is a complex compound composed of:

- Plant substances collected by bees
- Digestive secretions of bees
- Wax secretions of bees.
Plant Material Sources

Non floral plant parts

Exudates or secretions of trees or shrubs

Leaf bud coatings

Resins or saps from plant injury sites

Waxy or resinous leaf secretions

Selection limited to local flora & micro season

Generally 1 to 1.5 miles

Bee’s selection process of available sources
Processes of Transformation

Plant materials manipulated by many bees

Blended with wax and secretions to create new substance

New research on role of bacteria in honey curing process suggests that the transformation process to propolis may also have as yet unrecognized contributors.
In the Hive - Solid, Liquid, Gas

Propolis is only a discreet solid outside the hive.

At temperatures inside hive it is:

- A viscous liquid covering all surfaces
- A bio active gaseous vapor that suffuses hive
In the Hive Multi-Functionality

Propolis used as architectural material

Space filler and “glue” to bind hive

Shape/restrict entrances

Propolis’ Hygienic role

‘Doormat’ trapping outside contaminants

Sterile containment of other contamination

‘Disinfectant’ preparing brood cells

General hive health
Beekeepers Collect Propolis

By scraping hive of naturally deposited propolis

Or

Recovering propolis from ‘traps’ used to stimulate the deposit of propolis & facilitate collection.
### Major Classes of Components in Propolis

#### Crude Classifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resins/Balsams</td>
<td>45 – 55%</td>
</tr>
<tr>
<td>Waxes and Fatty Acids</td>
<td>25 – 35%</td>
</tr>
<tr>
<td>Essential Oils</td>
<td>10%</td>
</tr>
<tr>
<td>Pollen</td>
<td>5%</td>
</tr>
<tr>
<td>Other Organics &amp; Minerals</td>
<td></td>
</tr>
<tr>
<td>Minerals</td>
<td>5%</td>
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</tbody>
</table>

#### Further Classification

Research is extensive on composition of propolis with
Compositional Diversity — Functional Stability

Propolis from different areas varies considerably in biochemistry.

Bioflavonoids, phenols, and esters, vary in nature and quantity.

Functional medical effect varies much less.

The active properties of propolis vary less than the constituent parts.
Active Ingredients vs Synergistic Complexity
Ancient use of propolis is documented among the Greeks for skin disorders and wound healing.

Ancient Egyptians used propolis in both medicine and mummification.

The earliest ancient Chinese medical text fragments contain references to propolis use.

Often described as a ‘folk’ medicine by the scientists who study it, its use has continued at all levels of sophistication.
Medicinal Forms of Propolis

Principal forms of propolis products

- Alcohol/hydro alcoholic extracts
- Propylene glycol extracts (Often sold as water soluble)
- Powders, tablets and capsules made from powders
- Water liquefied or hydrolyzed whole propolis

Each form has its own characteristics
Standards and Standardization

Prof. Vassya Bankova, Bulgarian Academy of Sciences, has been biggest proponent of various methods of standardization.

Currently, there are no industry standards.

Quality is assured by the user’s knowledge of propolis and of their supplier.
General Principles of Use

- Propolis is a broad spectrum remedy with effective result for an extremely wide range of conditions.

- Propolis is a versatile remedy – it can be used safely in combination with allopathic medications.

- Propolis is a safe remedy.

- Sensitivity to propolis generally expresses itself as a dermatitis which soon resolves when use discontinued.
**Biological Response Modifier**

A substance that helps the body respond to imbalance more effectively

Examples:

Hypo/hyper glycemia and thyroid conditions respond equally well to propolis

Animals given propolis and vaccines produced more antibodies than with vaccines only
Multiplicity of Medical Actions

Propolis may promote health by several simultaneous actions

Example: propolis for cancer may

- Improve the immune response
- Directly attack cancer cells
- Diminish growth rate of cancer cells
- Improve liver function and general health
Immune Response Modifier

Various researches show increased immune system cell production when subjects given propolis.

Increased immune response directly correlated to dosage

Dosage range can be adjusted to response required
Breast cancer patient receiving 30 ml propolis per day during chemotherapy.

Fig. 1–5. Increase of the leukocyte count in a cancer patient taking propolis
Cytotoxic and Anti-Carcinogenic

These qualities of propolis and propolis constituents subject of extensive research

Propolis from a wide range of origins show these qualities on a broad range of cancer cell lines

This topic will be covered more extensively in separate discussion
Propolis is best known as an antibiotic & sometimes known as “Russian Penicillin”

Active against a wide range of bacteria including drug resistant strains

Most effective against bacteria with permeable membranes

Works synergistically with many pharmaceutical antibiotics
Propolis is very effective against gingivitis and periodontal infections through direct application.

Propolis in honey is very effective for ear, eye, and sinus infections applied directly to site of infection.

Propolis has a good success rate with urinary tract infections with moderate internal dosing 3x day.
Propolis has been used traditionally as anti parasitic in tropical area

It is regarded as wide spectrum against microbial and larger parasites.

A moderate dose generally recommended at least two times per day

Has been used with other therapies for Lyme disease
Anti Viral

Propolis, topically applied, can shorten duration of viral cold sores or interrupt onset.

Colds and flus can be shortened with small oral doses every one to two hours.

Duration of shingles outbreaks have reportedly been shortened with topical propolis.
Radioprotective

Animals fed propolis before irradiation had less gene mutation than control subjects.

Propolis taken before extreme UV exposure lessened the effect and accelerated skin repair.

Oral propolis before and during radiation therapy lessens the undesired side effects.

Topical propolis during radiation therapy can minimize or eliminate non cancerous tissue damage.
Traditional use of propolis has often focused on certain organs of the body.

Those treatments sometimes continue to be successful.

The causative effects are not always known.

In others, science has caught up to folk medicine.
Hepatoprotective

The liver is a signature organ for propolis

Positive results have been achieved with

Cirrhosis of the liver

Hepatitis B & C

Liver Atrophy

It would be advisable to take high doses several times per day for these conditions
Fig. 3-13. Differential WBC count

See the footnote to Fig. 1-6 for the subpopulations of leukocytes. This patient showed a decrease in the absolute total WBC count due to impaired bone marrow function. This decrease was reversed after 10 days of oral intake of propolis.

Fig. 1-13. A case of acute hepatitis B in which liver function was normalized rapidly by propolis.
Skin & Tissue

Propolis and wounds/burns will be treated by a separate presentation.

Eczema, psoriasis, & chronic acne often respond to propolis applied with a cream or honey.

Eczema & psoriasis often also require moderate internal dosing several times per day.

Propolis in ointment has reduced hemorrhoids, in some cases quite quickly.
Gastro/Intestinal Organs

- Propolis is a hallmark remedy for gastric ulcers, colitis, and diverticulosis

  - Dosing should occur a half hour or more before meals

  - Use of raw propolis chunks has been reported successful with diverticulosis
The End

Picture from “The King of Heaven Calls Toad ‘Uncle’”