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## Plants used by abagusii traditional healers in the treatment of cancer and other inflammatory conditions

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### Abstract

An ethnomedical survey of plants used by Abagusii traditional healers of South West Kenya in the treatment of cancer and other inflammatory conditions was carried out. A number of traditional healers were interviewed about the plants that they used in the treatment of cancer, method of preparation and dosage regimens. Their responses were recorded. Each materia medica entry followed the format; Latin binomial; Common name; Vernacular and taxonomic name; parts used; constituents; indications; safety considerations; preparation and dosage. Five plant species were botanically identified. It was found that in this ethnic group greatly depended on herbal remedies I treatment of cancer and its related ailments This study also revealed that the Abagusii healers have an extensive knowledge of their flora. This study also revealed that there is a rapid degeneration of many indigenous herbal medicinal plants, hence the need for their conservation.

**Keywords:** Cancer, medicinal plants, Asteraceae, adaptogens, abagusii, Kenya

### 1. Introduction

Herbal remedies have a long and honorable history in the treatment of cancer and it may surprise some people to learn that they are still at the core of modern medicine's response to this intransigent disease. Incredible resources go to cancer research some of which are focused on plants. However, the results of this research attention are nowhere near as dramatic as what might be expected. This should not lead us to the conclusion that plants have little or no role in the treatment of cancer. Rather it illuminates the basic failing of orthodox medicine's approach to degenerative diseases in general and cancer in particular. This paper attempts to document some medicinal plants used by Abagusii Traditional Healers of South West Kenya in the treatment of cancer and other inflammatory disease conditions. The paper also outlines the factors involved in a true holistic approach to cancer treatment by the use of *herbs*.

### 2. Background

Cancer is a term applied to malignant diseases that affect many different parts of the body. These diseases are characterized by a rapid and uncontrolled formation of abnormal cells, which may mass together to form a growth or tumor, or proliferate throughout the body initiating abnormal growth at other sites. If the process is not arrested, it may progress until it causes the death of the organism. Cancer is encountered in all higher animals and plants also develop growths that resemble cancer.

Carcinogenicity, the process that leads to cancer is a complex course of an abnormal cell growth and differentiation. At least two stages are recognized: initiation and promotion. In initiation; a normal cell undergoes irreversible changes. During promotion, initiated cells are stimulated to progress to cancer. Chemicals can act as both initiators and promoters of cancerous changes.

Herbal practitioners are often asked to provide treatment for cancer patients. This is often as a complement to conventional treatments. However, in a few cases they are asked to construct completely alternative strategies. In the latter case, especially, the practitioner can be put in a most difficult position. Cancer is undoubtedly one of the most serious and also one of the most complex and diverse diagnoses to receive.

Modern oncology has confirmed that finding and attacking malignant targets remains most difficult and that different types of cancer present very different prospects. Modern treatments,

have, moreover, been powerful, indeed dangerous, assaults on cells that may be more vigorous than their normal neighbors. The efficacy and safety of these treatments depend on being able to focus on their target most selectively.

Alternative approaches are usually derided by orthodox authorities because they apparently lack such potency and reviews tend to reinforce that direct efficacy is lacking (Shishodia *et al.*, 2007)<sup>[10]</sup>.

Herbal clinicians respond that they are trying a different approach: mobilizing the body's own powerful defenses against the proliferation of malignant cells by providing appropriate supportive therapies. They point out that endogenous anticancer defenses are formidable in even modest health. It is statistically likely that a tiny fraction of the body's cells (but this could mean thousands of cells) slip out of normal tissue constraints and become malignant each day.

Through quiet surveillance, the body's defenses normally clean up such vagaries without further harm. Against that background, the actual development of a tumor must present the failure of an impressive protective mechanism. In theory it may be possible to reactivate these defenses at least in conditions that are not too advanced or debilitating. In practice, there is only modest evidence to guide work in this direction, mainly from *in vitro* and *vivo* studies.

On the positive side, the cases of spontaneous remissions from cancer and unexpected delays in deterioration that all healthcare practitioners encounter are evidence that there are powerful defensive forces to be had. To be set against this, however, is the need for evidence for any strategy towards mobilizing these forces. However, there are some pointers at least to the possibility of improving protection against cancer development before it happens and by implication (but only by implication) to guide supportive or adjunctive measures to improve the prospects of spontaneous recovery after the events.

#### a) Plants and cancer prevention

On the basis of *in vitro* and *in vivo* studies as well as epidemiological evidence, the American National Institute (ANI) has identified a range of foods with cancer preventive potential in three categories. Highest anticancer activity, moderate anticancer activity and modest anticancer activity (Cragg, 1996; Craig, 1997)<sup>[6, 5]</sup>.

Some of the most persuasive data on the benefits of plants in at least reducing the incident of cancer has been in epidemiological studies on the association with tea drinking. In addition to the number of studies demonstrating anti-tumor effects, extracts of *Camellia sinensis* (green tea) consumption and cancers of the bowel, stomach and breast there have been epidemiological studies supporting its protective effect in humans and there are early studies underway to investigate its benefits in cancer patients (Briggs, 1997)<sup>[4]</sup>.

#### b) Plants and cancer treatment

The potential of plant remedies directly to correct established malignancies is apparently limited (Zeigler, 2010)<sup>[14]</sup>. Plant isolates from traditional remedies have been identified as having antitumor effects *in vitro* and *in vivo* research programmes (Bolk, 1995)<sup>[3]</sup>. There have been a few studies that suggest that plant preparations may have anticancer effects in experimental conditions (Riggs *et al.*, 1997; Briggs, 1997; Shishodia *et al.*, 2007)<sup>[9, 4, 10]</sup>.

### 3. Materials and methods

A number of traditional healers were interviewed about the plants that they used in the treatment of cancer, method of

preparation and dosage regimens. Their responses were recorded down.

### 4. Results

Each material medica entry follows the format: Latin binomial; Common name; Vernacular and taxonomic name; parts used; constituents; indications; safety considerations; preparation and dosage.

**Parts used:** this entry lists the parts of the herb used medicinally

**Constituents:** the lists provided here represent a combination of relevant phytochemical research on the particular remedy. This is not a comprehensive constituent listing as each plant contains many hundreds of thousands of distinct chemicals both organic and inorganic. Only the most relevant chemicals have been listed. The ubiquitous primary constituents found in all plants are omitted. The information provided here reflects current pharmacological thinking about which chemicals are the primary contributors to the plant's actions. However, this does not necessarily tell us much about the value and benefits of the herb when used in healing. The activity of the whole plant is always more than the sum of its parts.

**Indications:** in this section a brief overview of the clinical indications of the herb are provided.

**Safety considerations:** if there are any concerns about the safe use of the herb, the issues are discussed under this heading, including side effects, contraindications and drug interactions.

**Preparation and dosage:** this section lists dosage ranges for various herbal preparations taken, the healer's details of concentration (weight and volume ratios, expressed as "w/V" and alcohol percentages for tinctures and liquid extracts. For example, a tincture containing 1-part herb to 5 parts solvent in menstruum composed of 45% alcohol is denoted as "1 in 45%).

1. *Zingiber officinale* Roscoe  
Ginger  
Etangausi  
Zingiberaceae

**Parts used:** Rhizome

**Constituent:** volatile oil (1% to 3%, occasionally more) primarily containing the sesquiterpenes, Zingiberene and B-Bisabolene, Oleoresin (4% to 10%, containing gingerols, gingerdiols, gingerdiones, dehydrogingerdiones, shagaols, lipids; 6% to 8% (Blumenthal, 2003)<sup>[2]</sup>.

**Actions:** Stimulant, carminative, rubefacient, diaphoretic, emmenagogue

**Indications:** Motion sickness, peripheral circulation, fever, fibrositis and muscle sprains and antioxidants.

**Safety considerations:** ginger may influence bleeding times and immunological parameters because it inhibits thromboxane synthase and acts as a prostacyclin agonist (Le Bourg, 2009)<sup>[7]</sup>.

**Preparation and dosage:** Tincture dose is 1.5 to 5ml three times a day (1:5 in 40%). To make an infusion in 1 cup of

boiling water is poured over 1 teaspoon of fresh root and infused for 5 minutes, Drink whenever needed. Fluid extract dosage is 0.25ml to 1 ml three times a day (1.1 in 40%).

## 2. *Glycyrrhiza glabra* L.

Licorice  
Ericorisi  
Fabiaceae

**Part used:** Dried root

**Constituents:** Oleanane triterpenes (glycyrrhizin glycyrrhetic acid and is of flavonoids, chalcones, polysaccharides, mainly glucans, volatile oil (containing fenchon, linalool, furfuryl alcohol, benzaldehyde); Miscellaneous: starch, sugars, amino acid (Blumenthal, 2003) [2].

**Actions:** Expectorant, demulcent, anti-inflammatory, antihepatotoxic, antispasmodic, mild laxative.

**Indications:** Chronic hepatitis, cirrhosis, inhibition of the growth of several DNA and RNA viruses and irreversibly inactivates herpes simplex virus particles, bronchial problems and peptic ulcers.

**Safety considerations:** Side effects are minimal if daily intake is less than 10 mg of glycyrrhizin (Panossian and Wickman, 2009) [8].

**Preparation and dosage:** tincture dosage is 1 to 3 ml three times a day (1:5 in 40%). To make a decoction, 1/2, to 1 teaspoon of root is put in 1 cup of water. This is brought to a boil and simmered for 15 minutes. This should be drunk three times a day.

## 3. *Taraxacum officinale* Weber ex wig

Dandelion  
Etandelioni  
Asteraceae

**Parts used:** Root, leaf

**Constituents:** Terpenes, lactones, diterpenes, sterols, carotenoids, flavonoid, polysaccharides, potassium (Bisset, 1994) [1].

**Actions:** diuretic, hepatic, cholagogue antirheumatic, laxative, tonic, bitter

**Indications:** inflammation and congestion of liver and gall bladder. It is a specific for congestive jaundice (Vogel, 1977).

**Safety considerations:** Dandelion may theoretically cause allergic reactions in people sensitive to plants in the Asteraceae family (Bisset, 1994) [1].

**Preparation and dosage:** root tincture dosage is 2.5 ml three times a day (1.5 in 60%); to make a root decoction, 2 to 3 teaspoons of root powder are put into 1 cup of water. This is brought to a boil and gently simmered for 10 to 15 minutes and then drunk three times daily. Leaf tincture dosage is 5 to 10ml, three times a day (1:5 in 40%); to make a leaf infusion, 1 cup of boiling water is poured over 1 to 2 teaspoons of dried leaf powder and infused for 10 to 15 minutes. This should be drunk three times daily. The leaf may also be eaten raw in salads.

## 4. *Trifolium pretense* L

Red clover  
Ekiroba embariri  
Fabaceae

**Parts used:** Flower heads

**Constituents:** Flavones, flavonoids, volatile oil, coumarins (Wren, 1988) [12].

**Actions:** Alterative, expectorant, antispasmodic

**Indications:** skin problems, coughs, bronchitis and antineoplastic action in animals.

**Safety considerations:** Red clover may potentiate the effects of anti-coagulant drugs.

**Preparation and dosage:** Tincture dosage is 2 to 4 ml three times daily (1:5 in 40%). To make an infusion 1 cup of boiling water is poured over 1 to 3 teaspoons of dried herb and infused for 10 to 15 minutes. This should be drunk three times daily.

## 5. *Thuja occidentalis* L

Thuja  
Etucha  
Cupressaceae

**Part used:** Young twig

**Constituents:** volatile oil, flavonoid glycosides, mucilage, tannins.

**Actions:** expectorant, antimicrobial, diuretic, alterative

**Indications:** Thuja's main action is related to its content of stimulating and alterative volatile oil.

Bronchitis, delayed menstruation, ordinary incontinence, psoriasis and rheumatism when used internally. When used externally, it may be effective against warts, ringworm and thrush.

**Safety considerations:** Due to its content of thujone, large doses of thuja may be toxic, used in combination with other thujone containing herbs will cause an addictive effect. Should be avoided during pregnancy.

**Preparation and dosage:** Tincture dosage is 1 to 2 ml three times a day (1:5 in 60%); to make an infusion, 1 cup of boiling water is poured over 1 teaspoon of dried herb and infused for 10 to 15 minutes. This should be drunk three times daily.

## 5. Discussion

According to the traditional healers the treatment of cancer involves the application of herbs with immune stimulant and immune modulating properties in a holistic context. The protocol to be developed should not depend on potentially poisonous plants. According to the healers a true holistic approach to cancer treatment will involve the following;

*A medical approach to destroying the tumor:* This may take the form of improving the body's own immune responses to destroying cancer cells. Herbal immune-stimulants have much to offer here. Allopathic approaches may utilize cytotoxic plants, chemotherapy, surgery and radiation.

*Therapeutics geared to supporting the whole body:* These

take into account the patient's non-cancer issues and may involve the use of tonics and other means of support for the body processes, such as elimination and general homeostatic integration.

*Nutritional re-evaluation:* This may entail identifying foods that either are anti-cancer or play a non-carcinogenic role, but more important, focus should be on ensuring that the body receives appropriate nourishment.

*Bodywork appropriate for the individual:* For example, massage does not cure cancer, but may play a vital role in managing stress, making it an integral part of holistic cancer treatment.

*Emotional and mental support:* While it may sound simple, this is a complex and formidable proposition! Stress management is essential, but so is in depth counselling of some kind. Counselling helps illuminate the reactions and coping mechanisms that come into play in response to cancer. However more exciting are the potentially life-transforming insights that the patient may gain in the process. Within the context of transpersonal psychotherapy, it is possible to see illness as a gift that offers many insights and possibilities for growth and transformation. As a component of a broad holistic treatment approach to cancer, the process can facilitate major emotional, mental and spiritual healing even in the face of terminal bodily disease.

Integrating all these ideas to formulate a holistic treatment programme is a challenge. The phytotherapist has much to offer, but without knowledge, understanding and experiencing the modalities mentioned above, are not enough. Herbs can make a major contribution, but if used in isolation, they are in principle no different from chemotherapy. They may have more to offer in terms of general body health but are less effective cytotoxic agents. The conclusion that can be drawn from all of this is that the holistically oriented herbalist tends to minimize the role of cytotoxic plants when developing an approach to treating cancer.

An argument against the use of herbal medicines becomes relevant here. The usual variation in amounts of constituents in individual plants makes accurate prescribing or ensuring standardized protocols impossible. As phytotherapy is founded upon the use of gentle normalizers, or at, most contain potent constituents this issue is irrelevant in most cases. However, it becomes pertinent when potentially harmful cytotoxic plants are concerned. The mere existence of cytotoxic herbs does not mean that they must be used.

Similarly, the herbalist does not plant poisons, narcotics and purgatives and that the natural world offers. The selection for remedies for cancer must be dictated by the practitioner's interpretation of the individual's needs, which in turn is an expression of the therapeutic philosophy within which they work. The holistic practitioner will consider using such powerful remedies only within the context of a broad holistic approach. We must act on these insights in practice or they become nothing more than hot air and there is enough air pollution already!

In the light of these dosage issues and therapeutic ecology, one conclusion can be drawn; and that is that a practitioner decides that direct cytotoxicity is appropriate chemotherapy may well be safer than cytotoxic plants. This statement may offend the natural medicine purist, but the needs of the patient always outweigh philosophical dogma.

### Holistic approach to the treatment of cancer

So how are herbs most appropriately used in the treatment of cancer?

By applying herbs with immune-stimulants and immune-modulating properties in a holistic context the practitioner may develop a protocol that does not depend on potentially poisonous plants. If the protocol suggested earlier in this paper is applied, then some guidelines become apparent.

*Herbal actions:* Application of the term anti-cancer to herbal action may be misleading. Appropriate herbal actions for cancer may include alterative, lymphatic and toxic. Other actions will be indicated by the symptom picture and issues unique to the type of tumor involved. In addition, the needs of the individual will suggest actions necessary for system support.

*Systemic tonics:* Tonic support for the site of the tumor is essential. Tonics can also be used to address other factors revealed from review of the patient's medical and family history.

*System support:* This will take some form of immune system support, with an emphasis on deep immune stimulation, eliminative support and stress management.

*Specific remedies:* Many plants around the world have a reputation for anticancer activity but unfortunately, they do not work as claimed! Instead, they are largely alterative, lymphatic, hepatic, or diuretic remedies and have much to contribute to the holistic approach suggested in this paper. However, used in isolation, they will not replace such approach. Why are no prescriptions suggested or treatment protocols given in this discussion on cancer? There are two reasons, one theoretical and one personal.

If any conclusion can be drawn from theoretical discussion, then it is that each individual must be treated as just that a unique individual not tumor site. As the holistic approach proposes that cytotoxic remedies must be avoided, the factors to be addressed within the protocol will be fundamentally the same as those for immune support in general, with a possibly greater emphasis on alternative and lymphatic remedies.

However, the main reason I have not suggested and prescriptions here is a personal one. My clinical experience with treating cancer is limited, and so I have concluded that all I can ethically write is a review of a theory presented here. The herbal literature is replete with treatments and cancer cures that have no basis in reality. An exception to this is Herbal medicine, Healing and cancer by Yance, (1999) [13]. His three-stage approach to the treatment of cancer is summarized in Table 1.1.

**Table 1.1:** Three-stages approach to the treatment of cancer

Stage of treatment	Actions required
Stage 1: Tonic therapy	Herbs to strength the individual's constitution and vitality. Tonics, adaptogens and herbal immune enhancers.
Stage 2: Liver and lymph detoxification	Antioxidant, liver detoxifying anti-inflammatory and anti-angiogenic herbs, alternatives and lymphatics.
Stage 3: Cytotoxic therapy	Gene-repairing, enzyme-inhibiting and cytotoxic herbs. Herbs that can alter the action of hormonal receptor type cancers.

## 6. Conclusion

The validity of using phytotherapy for cancer treatment needs to be assessed in terms of risk, benefit cost, effort and empowerment. More studies are needed to understand risk

and benefit, but the most promising area (and least difficult in terms of ethical issues) is the combination with conventional treatment.

### Conflict of interest

“The author(s) declare(s) that there is no conflict of interest.”

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