

Inhibition of Skin Colour Darkening (Skin Clearing and Lightening); Skin Firming; Body Calming and Body Vitalizing Effects of *Vernonia amygdalina* Leaf Extract

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Abstract: Problem statement: Obese human subjects treated with oral *Vernonia amygdalina* (*V. amygdalina*) aqueous leaf extract for one month who experienced the anti-obesity effects of *V. amygdalina* leaf extract reported a lighter; clearer; more glowing and firmer skin as side effects of the treatment (unpublished findings). In this study, oral *Vernonia amygdalina* aqueous leaf extract was taken daily for six months to observe its effects on the external appearance and the firmness of the skin of the treated subject. **Approach:** *Vernonia amygdalina* leaf extract was prepared as a leaf effusion. The extract was taken 4 times daily by the subject who also observed some dietary restrictions. **Results:** The results of the study showed that *V. amygdalina* leaf extract has potent skin clearing; skin firming; skin lightening (inhibition of skin colour darkening); skin texture and lustre restoration; anti-obesity; body calming and body vitality (vigor) effects. These skin colour and form restoration effects of *V. amygdalina* extract coupled to its body metabolism effects to give body calm, vitality and youthful looks to the subject. **Conclusion:** The study concludes that *V. amygdalina* leaf extract has skin colour and formlightening and restoration effects as well as body calming and body vitalizing effects.

Key words: Skin colour darkening, leaf extract, lustre restoration, skin texture, dietary restrictions, body calming, sun flower seed, Nigerian pea, artificial salt, alcoholic drinks, visible effects, obese human

INTRODUCTION

Obese human subjects treated with oral *Vernonia amygdalina* (*V. amygdalina*) leaf extract for one month who experienced the anti-obesity effects of *V. amygdalina* leaf extract reported a lighter; clearer; more glowing and firmer skin and a calming effect on the body as side effects of the treatment (unpublished findings).

V. amygdalina leaf extract has been shown to have anti-oxidant; antibacterial; antifungal; anthelmintic; anti-thrombosis; lipid lowering; anti-diabetic; wound healing and anti-cancer properties (Alkassasbeh *et al.*, 2009; Al-Akhras *et al.*, 2007; Harrison and Bartels, 2006).

Skin lightening and skin tightening effects of *V. amygdalina* extract has not been reported in humans although a study observed skin lightening effects of *V. amygdalina* in rats whose feed was enhanced with ground *V. amygdalina* leaves (Abu-Al-Basal, 2009). This study investigated the externally visible effects of *V. amygdalina* leaf extract on human skin and body energy level.

MATERIALS AND METHODS

An Infusion of fragments of dried wholesome mature red stalked *V. amygdalina* (bitter leaf) leaves was made by putting them in twice their own volume of boiling drinking water in a clean cooking pot. Stirring of the leaf fragments for 10-15 min enhanced complete effusion of the *V. amygdalina* leaf extract into the boiling water.

Treatment: The treatment consisted of the oral intake of the *V. amygdalina* leaf extract and the observation of stipulated eating behavior by the human subject.

The subject took 70 mL of the *V. amygdalina* leaf infusion orally 4 times daily; for six months while observing the following listed dietary restrictions.

Dietary restrictions: The subject abstained from the following foods: lard; vegetable oil; butter/margarine; mayonnaise; grated coconut; bacon; ground nut/peanut butter; nuts like palm nut, coconut, date palm; oil fried foods; oily seeds like *beniseed*, *egusi*, sun flower seed; oily fruits like avocado pea, Nigerian pea; oily soups, stews or gravies; oily cooked or prepared meals like

salads, bean cakes and from pastries or flour foods like dough nuts, burns, cakes, spaghetti/ macaroni, bread; alcohol or alcoholic drinks; beverages; soft drinks (including malt drinks and carbonated drinks); tobacco or tobacco products; garlic and acidic food spices and condiments; artificial food seasoning (artificial salt or salt substitutes including potash).

Permitted diet and eating behavior: The subject's meals consisted of two daily meals which contained their normal daily requirements of proteins, non-acidic fruits; mineral salts and water. Only one third of the carbohydrates meals and one tenth of the fats and oils previously consumed by the researcher was eaten by the researcher. Two thirds of the carbohydrates which the subject previously consumed were replaced by leafy green vegetables.

RESULTS

The treated subject reported that her body felt more calm and relaxed and functioned with a new energy of a more efficient type. The subject also reported being full of new strength and zest and having lost excess body fat. The skin effects reported by the subject included a smoother skin; a skin that was healthier and tighter on the muscles of the flesh; a cleared and shinnier skin and a restored skin color.

Figure 1b shows the subject before the *V. amygdalina* leaf extract treatment. A comparison of the before and after treatment physical looks of the treated subject showed that *V. amygdalina* leaf extract produced the following results observable in the pictures in Fig. 1a and c-e:

- It restored the subject's light skin colour in (Fig. 1a and c-e)
- It cleared the skin blemishes (skin infections and discolorations) (Fig. 1a and c-e). The clearance of the skin by the extract made the skin to look clear and transparent as exemplified by the fingers of the raised left hand in Fig. 1e
- It tightened the skin texture and smoothened the skin surface. The firming and smoothening of the skin by the *V. amygdalina* extract is seen in Fig. 1a and c-e but is best demonstrated on the face in Fig. 1b and on the face and shoulders in Fig. 1c
- It restored the lusture (a reflective shine) and glow of the skin. The bright shining glow of the skin is present in Fig. 1a and c-e and is most visible on the fore heads in the Fig. 1b-e and at the skin covering the clavicle in Fig. 1c



(a)



(b)



(c)



(d)



(e)

Fig. 1a and c-e: Show the effect of oral *Vernonia amygdalina* leaf extract treatment on the subject's skin colour, skin texture, skin smoothness, skin lusture, skin firmness; body calmness and vitality, (b) Shows the subject before the oral *Vernonia amygdalina* leaf extract treatment

A comparison of the external features of the body in Fig. 1a with those in Fig. 1b-e shows that the *V. amygdalina* leaf extract treatment produced a calming effect on the body. The body of the subject was functioning in a more relaxed state or at a lower energy level after the *V. amygdalina* treatment than before it.

DISCUSSION

The skin clearing effects of *V. amygdalina* leaf extract are suggested to be due to the clearing of skin infections and minor skin blemishes through the demonstrated antimicrobial (Krishna *et al.*, 2009) antiparasitic and immune defence and antioxidant properties of *V. amygdalina* leaf extract.

The skin tightening and skin texture and lustre restoration effects of *V. amygdalina* obtained in this study is suggested to be as a result of the excess fat reduction effects (Kim *et al.*, 2006); the immune defence properties; the body organ repair properties (Liu *et al.*, 2005; Nayak, 2006; Sudha *et al.*, 2009; Tong-Un *et al.*, 2010) and the direct skin tightening effects of *V. amygdalina* leaf extract.

The natural skin colour restoration effects of *V. amygdalina* demonstrated in this study is as a result of the inhibition of the darkening of the melanophores of the skin of the subject by infective and other agents.

The skin of Wistar rats fed for 65 days with 25, 50 and 75% (w/w) powdered *V. amygdalina* leaves mixed with standard grower mash demonstrated the natural skin colour restoration effects of *V. amygdalina* leaf extract. At the end of the 65 days treatment, *V. amygdalina* in the reconstituted rat feed "grossly turned the skin of the treated rats lighter than those of the control rats fed the standard grower mash" (Hafidh *et al.*, 2009) Microscopic examinations of the treated rats showed that the various tissues of the rats were of normal architecture with good cellular morphology (Azadi and Farzaneh, 2010).

The α -adrenergic receptor on the melanophores of melanocytes has been shown to be associated with the expression and change of skin colour (Harrison and Bartels, 2006). Skin colour in lizards (*Anolis carolinensis*) and frogs (*Rana pipiens*) is influenced by both Melanocyte-Stimulating (MSH) hormone and catecholamines. MSH-induced darkening of the skin can be inhibited or reversed by drugs with α -adrenoreceptor activity (Alipoor *et al.*, 2009). The α -adrenoreceptor on melanocytes inhibitory to dispersion of granules is the α_2 subtype (Kim *et al.*, 2006) Clonidine mimicked catecholamine action at these α_2 -adrenoreceptors while yohimbine antagonized the effect of clonidine and

prazosin had negligible effect on them (Haziri *et al.*, 2010).

V. amygdalina leaf extract is suggested to have produced its skin lightening and natural skin colour restoration effects in this study through an inhibitory action on the α_2 receptors of the melanophores of skin melanocytes of the subject.

The body calming effects of *V. amygdalina* reported by the subject and inferred visually in the before and after treatment pictures of the subject are suggested to be due to inhibition of energy metabolism of the subject by the *V. amygdalina* extract.

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