

Tinospora rumphii* Boerl. (Makabuhay) in the Treatment of Scabies

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ABSTRACT

In a survey conducted at Elsie Gaches Village in March 1986, 106 of 234 (45%) residents examined were clinically diagnosed to have scabies. As a result of current interest in herbal medicine, an attempt was made to document the acaricidal property of *Tinospora rumphii* Boerl., a local vine popularly known as "makabuhay". Lotion was prepared from macerated stem material and refined vegetable oil.

A total of 40 cases were selected at random for treatment as follows: 26, with tinospora lotion (experimental); 9, with sulfur ointment (conventional scabicide); and 5, with refined vegetable oil (placebo). The distribution of lesions among 12 predilection sites was noted and patients were assessed as to degree of infestation i.e., minimal, moderate, and generalized. Patients were treated once a day for 3 to 5 days followed by a 7 to 14 day rest period, when only placebo with no scabicide was applied to affected areas, and then a second cycle of treatment. Criteria for cure were based on complete or partial disappearance of lesions and pruritus. All tinospora-treated patients responded as follows: complete cure in 8 and partial cure in 18; with sulfur, complete cure in 2 and partial cure in 7; no response in the placebo group. Patients with moderate to severe disease were more predisposed to reinfestations and/or recurrence of symptoms than those with minimal lesions.

The study establishes the acaricidal property of tinospora although a concomitant antimicrobial action cannot be ruled out. It provides nonetheless an alternative to costly drugs and potentially toxic chemical pesticides. [*Phil J Microbiol Infect Dis* 1987; 16(1):25-29]

Key Words: *Tinospora rumphii* Boerl., scabies, sulfur ointment, acaricidal

INTRODUCTION

Scabies is an infestation of the epidermis with the mange mite, *Sarcoptes scabiei*, particularly, the female which normally burrows into the skin to lay eggs. Toxins secreted by the mites are probably responsible for the development of vesiculopapular lesions with pruritus.¹ Initial predilection sites occur around finger webs, wrists or elbows, and anterior axillary folds. In untreated individuals, other parts of the body are involved. Pyogenic infections usually ensue from scratching with dirty fingernails^{1,2,3} Chronic infestations present as a generalized dermatitis with excoriation and extensive scaling or crusting. Impetigo contagiosa is a complication among children.¹

The first evidence of parasitization consists of a small erythematous eruption or "watery blister" which can be opened with a sterile needle to reveal a whitish, round mobile female mite no bigger than a speck, hardly visible to the unaided eye. In moderate to severe infestations the mites may be found only after assiduous search of recently parasitized skin underneath the scales. Older abandoned burrows appear as grayish to brown plaques. Itching may persist long after successful treatment.^{1,2,3,4}

Diagnosis of sarcoptic mange depends upon assessment of the location and appearance of lesions (vesicles, papules, tiny linear burrows, or reddish pruritic nodules)^{1,2,3,4} and microscopic identification of mites. The presence of mites in skin biopsy is confirmatory.^{5,6} Susceptibility to scabies is universal. Since the principal mode of transmission is direct transfer of ectoparasites through personal contact, the disease is particularly rampant in overcrowded places without

adequate sanitation. Ninety-eight percent (98%) of parasitic skin infections seen in 1983 at the Out-Patient Clinic of the Dermatology Research and Training Division of the Department of Health were due to scabies (Personal communications). Reinfestations occur despite individual treatments. The incidence of isolated cases among persons who are neither lacking in material provisions nor proper health practices may represent an immunological problem.

The standard treatment for scabies is topical application of 1% gamma benzene hexachloride, crotamiton, 5% tetraethylthiuram monosulfide, benzyl benzoate, and sulfur. Some of these are potentially toxic chemicals. Preventive measures include treatment on a coordinated mass basis, daily cleansing baths, frequent change of clothing, and concurrent disinfection of garments and beddings with hot water.^{1,3,4}

In 1983, Rivera et al reported in the Journal of the Philippine Medical Association a comparison of crotamiton (Eurax) and aqueous extract from *Tinospora rumphii*, a local vine popularly known as "makabuhay" in the treatment of scabies in children. Both modes of medication were found to be equally effective.⁷ In response to current interest in herbal medicine a study was initiated in March 1986 at Elsie Gaches Village, the National Center for the Mentally Retarded to document the acaricidal property of this medicinal plant. The results of that study are presented in this paper. The significance of the study is that it provides an alternative to costly drugs and hazardous pesticides. This is nonetheless in line with the thrust on appropriate technology and the use of indigenous materials in the context of primary health care.

Tinospora rumphii Boerl. (Family Menispermaceae) is a climbing vine, which grows in the wild and can be propagated by stem cuttings. The name "makabuhay" means "that which brings back life". Other names in the vernacular are "badyawan", "manunga," "patina," "pangisuban," "pitawali," "sangaunau" "taganagtagua", and "tulog.tulog"^{8,9} (Figure 1). It is believed to have antimicrobial, parasitical, and hitherto unknown pharmacological actions hence, its widespread use in tropical ulcer, fever, digestive disorders, dermatoses, as an emmenagogue, antimalarial, and carminative.

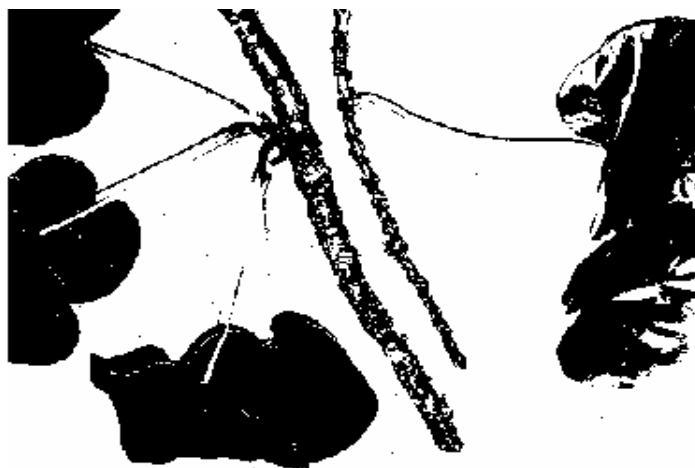


Figure 1. Characteristic appearance of stems and leaves of makabuhay, *Tinospora rumphii* Boerl

MATERIALS AND METHODS

A. Preparation of *Tinospora* lotion

One hundred grams of freshly gathered stem, washed and chopped into 2 cm. pieces, were pounded while adding 50 cc. of hot water to soften the plant tissue. Viscous liquid was expressed from the macerated tissue through a cloth sieve. Lotion was prepared by gradually

adding heated oil to boiled extract with continuous stirring until a homogenate was obtained with a final concentration of 1 part oil to 2 parts plant material. The mixture was poured into labelled sterile bottles (Figure 2).

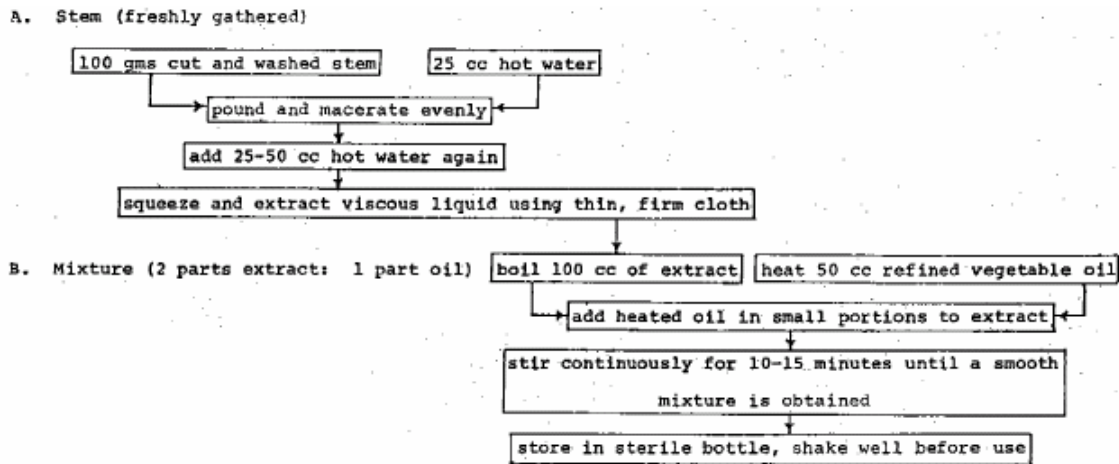


Figure 2. Preparation of *Tinospora* lotion

B. Patient recruitment, clinical application and evaluation

Of 234 client residents examined at Elsie Gaches Village, 106 or 45% were clinically diagnosed to have scabies. Forty of these cases were assessed as to degree of infestation i.e. minimal (with less than 6 sites of predilection), moderate (more than 6), and generalized (wide-spread lesions). Twenty-six individuals were randomly selected for observations following treatment with tinospora lotion; nine with 5% sulfur ointment, and five with oil as placebo. Household contacts were treated with scabicide but were not included in the documentation.

Both acaricides and placebo were applied on affected areas once a day for 3 days, usually each morning after a cleansing bath. Treatment was repeated after a rest period of 7-14 days. After the first round of treatment with "makabuhay" the regimen was changed to 5 days application with 5 days rest. Sulfur treatment was continued on a 37-3 days schedule as a precaution against possible toxic effects.

Complete cure was defined as clearance of all lesions and cessation of pruritus; partial cure, as reduction of lesions with persistence of symptoms at the end of the 2nd treatment cycle or the 33rd-40th day from the start of treatment. Patients were observed for an additional period of 1 week for signs of recurrence. Twelve sites of predilection were systematically examined - head, face, palms, interdigital webs, wrists, arms, axilla, nipple, lower abdomen/periumbilicus, genitalia, thighs, and buttocks.

RESULTS AND DISCUSSIONS

The location of characteristic lesions was documented in 40 clinically diagnosed cases of scabies at Elsie Gaches Village. These were distributed in 12 preferred sites in decreasing frequency i.e., interdigital webs, 97.5%; wrists, 90%; arms, 80%; axilla, 70%; lower abdomen, 65%; buttocks, 62.5%; palms, 60%; face, 32.5%; genitalia, 32.5%; thighs, 30%; nipple, 20%; and head, 17.5%.

The results of treatment are presented in Table 1. All of 26 tinospora patients responded as follows: complete cure in 8 and partial cure in 18 (Figures 3A and 3B). Complete cure was

obtained in 2 and partial cure in 7 out of 9 sulfur patients (Figures 4A and 4B). No improvement was seen in the placebo-treated group (Figures 5A and 5B).

Table 1. Response to treatment with Tinospora lotion and sulfur ointment of 40 patients at Elsie Gaches Village

Treatment Group	Degree of infestation			Response to Treatment			Number of Patients
	Min	Med	Gen	Complete cure	Partial cure	No cure	
Tinospora (Experimental)	13	10	3	8	18	0	26
Sulfur (Conventional scabicide)	3	1	5	2	7	0	9
Oil (Placebo)	0	1	4	0	0	5	5

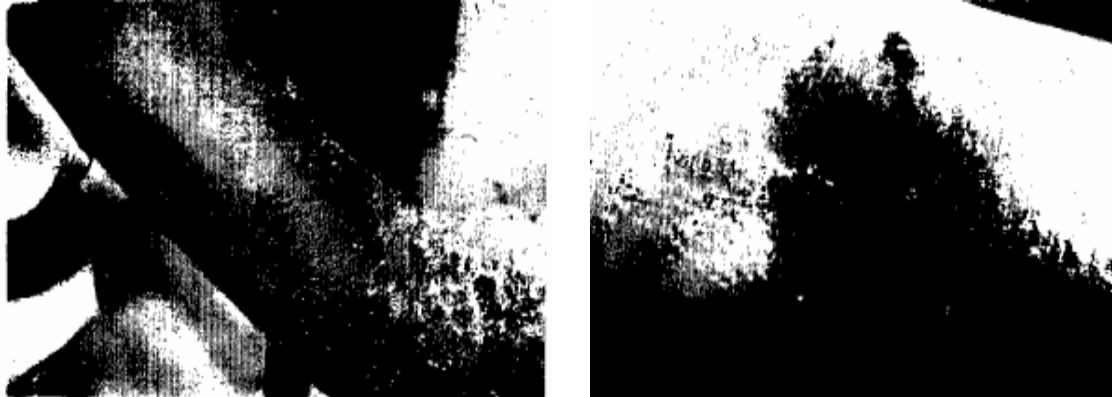


Figure 3. Response to treatment with Tinospora
A. Left elbow of C.A before treatment **B. Left elbow of C.A. after 24 days of treatment**

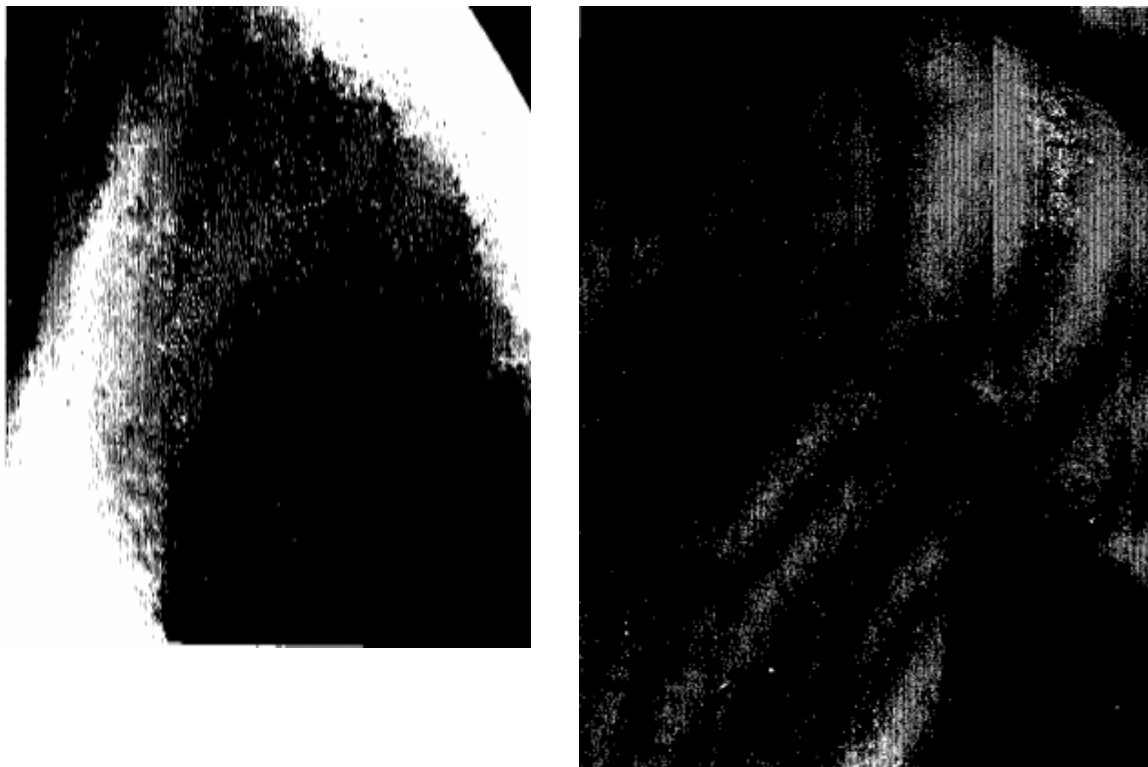


Figure 4. Response to treatment with sulfur.
A. Left axilla of R.P. before treatment **B. Left axilla of R.P. 8 days after treatment**

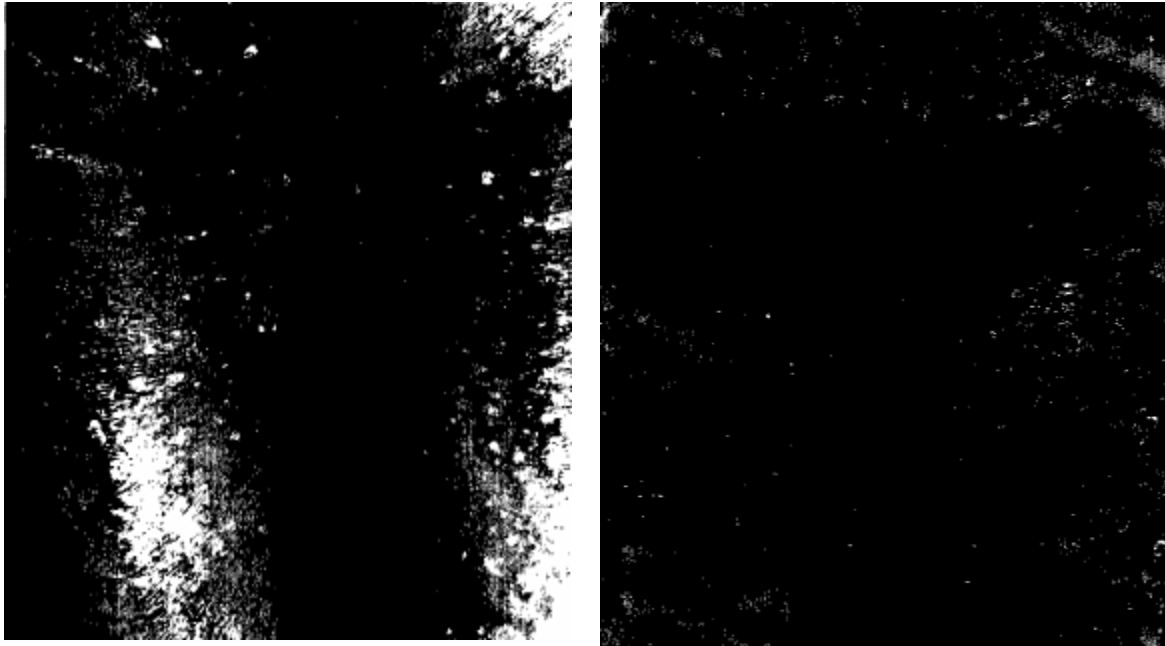


Figure 5. Response to treatment with placebo
A. Buttocks and thighs of G.B. before treatment **B. Buttocks and thighs of G.B. one month after treatment**

The curative effect of *Tinospora* in this study is attributed to its scabicial property although concomitant antimicrobial action can not be ruled out. Furthermore, no toxic reaction was seen in any patient.

Patients with moderate to severe disease were more susceptible to reinfestations than those with minimal lesions (Table 2). It is not clear if these were due to re-invasion with ectoparasites from contacts, although all members of the same household were treated simultaneously, or from hatching of eggs from old lesions.

Refractoriness to treatment of generalized scabies without secondary infection deserves consideration. In persons without previous exposure, an incubation period of 2-6 weeks may precede the onset of itching, whereas symptoms develop earlier, 1-4 days, in subsequent infestations implying anamnesis.³ Recurrence predisposes to allergy thus, hypersensitivity might well be a feature of chronic or widespread ectoparasitism. This serves to explain the persistence of symptoms despite successful attack on the mites.^{1,2,3}

Table 2. Persistent scabies among *Tinospora* treated patients

Degree of Infestation	No. of Patients with Recurring Lesions and Pruritus	Recurrence Rates
Minimal (N = 13)	7	54%
Moderate (N = 10)	6	60%
Generalized (N = 3)	3	100%

CONCLUSIONS AND RECOMMENDATIONS

The scabicial property of crude extracts of *Tinospora rumphii* (makabuhay) is confirmed. The vine is readily obtained in rural areas. The usual practice is to douse the body with the decoction after a cleansing bath (personal communications). As a result of the study, one has the option of using an aqueous preparation from pounded fresh material or an emulsion with coconut oil, refined vegetable oil, mineral oil, or baby lotion. Oil has the advantage of soothing dry itchy skin.

Detrimental side reactions were not seen after 2 cycles of treatment. Better curative effects were observed with longer application and shorter rest. Complete cure might have been achieved had treatment been continued beyond 2 cycles.

Alternative plant scabicides which require further investigations can be prepared from "malunggay" (*Moringa oleifera* Lam.), "kakawati" (*Gliricidia sepium* (Jacq. Steud.), "akapulko" (*Cassia alata* L.), and "kalatsutsi" (*Plumeria acuminata* Ait.)^{8,9} Herbal medicine evolved early in Philippine history and its scientific rationale remains to be established.

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