

Review Article

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Field Study on the Beneficial Effects of Fresh Herbals against Warts in Cattle: A Review of Clinical Cases

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ABSTRACT

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A study was conducted to evaluate the clinical effectiveness of a herbal preparation, in crossbreed cattle, affected by warts. The incidence of warts (n=13) was higher in females (92.3%) than males (7.69%) and younger animals were affected more (61.5%). The wart-lesions were found to be more in the teats (30.7%) and neck (23.07%). The time needed for the healing of warts was recorded individually in all the cattle under study, of which six cattle (46.1%) were observed for 4 months. The herbal paste was made freshly of *Euphorbia hirta* latex and leaves, *Allium sativum* bulbs, *Musa paradisiaca* peel, *Acalypha indica* leaves and *Zingiber officinale* rhizomes. All the animals were treated externally twice a day till the warts got completely cleared. Monitored once in ten days for signs of recovery for 60 days. By the end of second week, warts showed signs of healing to the herbal treatment. The overall success rate was achieved in 11 (84.6 %) cattle with a mean recovery period of 28.3 days. This real-time field study, has proved that this herbal remedy was useful in the treatment of warts in cattle, in a stand-alone mode obviating the use of any synthetic chemical(s) and also found to be very economical for the farmer(s).

Introduction

Warts and Papillomatosis is benign in nature and are characterized by small to medium sized growths on skin or mucous membranes. Bovine Papilloma virus (BPV) is a group of DNA viruses of the family *Papillomaviridae* that causes papilloma and warts in cattle. Thirteen types of bovine papilloma viruses have been identified in cattle (Devilliers *et al.*, 2004). Cattle types show site-specificity (Table 1). BPV 1 and BPV 2 comprise the major cutaneous fibropapilloma (Catroxo *et al.*, 2013). Warts develop after the

introduction of an infective virus through the cuts, abrasions; micro trauma of the skin, BPV induces the formation of papilloma or warts by targeting the keratinocytes. Infection of epithelial cells results in hyperplasia with subsequent degeneration and hyperkeratinisation. These benign changes occur usually 4 to 6 weeks after exposure (Campo, 2002). Warts occur due to several factors including inheritance, hormonal disorders and suppressed immune system (Campo *et al.*, 1997). The immunity of animals plays a major role in acquiring the infection (Inayat *et al.*, 1999). The cattle

carrying the virus as reservoir and source of the infection, intermediate sources of infection could be contaminated fences, feeders, ropes etc. (Nasir and Campo, 2008).

Warts have been widely found to affect cattle worldwide. In India Bovine cutaneous warts identified as BPV type 1 and type 2 was reported (Singh *et al.*, 2009). BPV type 10 warts in the teat were recorded by Rai *et al.*, (2011). Campo (2006) reported several economic consequences, in a cow with teat papillomas that cannot be milked and young calves cannot suckle, and often the pedunculated papillomas snap off, the sites become infected and mastitis may ensue with distortion of the milk canals.

A wart is an important disease leading to economic depreciation of animals and leads to deterioration of the quality of leather. The wart may progress to cancer due to the synergistic action of genetic or environmental co-factors (Leal *et al.*, 2003).

Somvanshi and Sharma (1986) have stated that there is no effective allopathic veterinary medicine available for wart(s) management.

According to the World Health Organization (WHO) about 80% of world population depends on traditional medicines, especially herbal medicines for their Primary Health Care needs. Ethno veterinary medicine (EVM) is a branch of science which deals with the study of traditional knowledge, methods, skills and practices used for treating various ailments of livestock (Corkle, 1986). Ethno veterinary medicinal practices are often cheap, safe, and based on local available resources and strengths. EVM can provide useful alternatives to conventional animal health care (Kumar, 2002). In developing countries, low-income category such as farmers, in remote and isolated village(s) use folk medicine for the treatment of common infections. The study was aimed to evaluate

the herbal remedies used in the field in cattle suffering from warts.

Materials and Methods

Study area: The study was conducted in thirteen crossbreed cattle affected with warts presented at the Veterinary dispensary, Kottagudi, Melur (Tk), Madurai (Dist), Tamil Nadu India (2017 to 2019).

Animals: Thirteen crossbreed cattle affected with warts in different seasons and times,. The age of animals ranged from 10 months to 6.5 years, the duration of warts occurred from one month to six months.

Clinical examination: Body temperature and the appetite of the animals were normal. Body condition of heavily affected cattle was generally poor (Constable, P. D *et al.*, 2017). The site, size and diameter of warts were recorded as shown in the table 2.

Ingredients

<i>Euphorbia hirta</i>	-	One handful of fresh leaves with latex
<i>Allium sativum</i> (Garlic)-		3 bulbs
<i>Musa paradisiaca</i>	-	2 peels
<i>Acalypha indica</i>	-	One handful of fresh leaves
<i>Zingiber officinale</i> (ginger)	-	10 grams of fresh rhizome

The above ingredients were enough for a 10cm diameter size warts, the herbal remedies paste was prepared, depending on the size of warts.

Preparation

Garlic and ginger were crushed into a fine paste, after that the inner side of the banana peel was scraped by the blunt side of the knife, and this banana peel paste was taken, then added *Euphorbia hirta* and *Acalypha*

indica leaves and mixed together to a fine paste.

Application

The latex from the *Euphorbia hirta* plant was applied to the root of the warts. Subsequently, the prepared herbal remedies paste was applied over the affected part of the animal body twice in a day till the warts were completely disappeared. All the animals were monitored once in ten days for signs of recovery for up to 60 days. No other therapy was given during the treatment.

Results and Discussion

Warts have recently grown in importance due to its association with cancer and immune suppression conditions (Campo, 2002). Animals can also develop warts extensively in the upper gastrointestinal tract and consequently, present difficulty to feed and breathe, resulting in a debilitated animal that may cause death (Campo, 2002).

In the present study, the incidence rate of warts was significantly higher in females 12 (92.3%) than in males 1(7.69%). Previously (Mohammed *et al.*, 2017) reported similar findings that the incidence was higher in females (79.14%) than males (20.85%). Infection may occur high in female cattle, usually under stress factors, such as gestation, lactation and progression of age. On another hand, male cattle are usually directed to fattening and meat production and are mostly slaughtered at the age of two years or less (Fayez Awadalla Salib *et al.*, 2008).

In the current study out of 13 animals, two animals were less than 1 year of age, six animals were 2 to 3 years of age, and two animals were 4 to 5 years of age and three animals were over 5 years of age. It appears that the younger age-group are more susceptible than the adult as described by Otter and Leonard (2003). They recorded

warts at young ages; it is due to ill-development immune system, alkaline Ph of the skin of young ages, most of the time these animals have been weaned early with less maternal derived antibodies that may facilitate the virus infection.

In the current study warts were found in different parts of the body. The number of cases and percentage of warts lesions regarding the site was recorded as follows: face 2 (15.3%), eye 2 (15.3%), leg 1 (7.6%), teat 4 (30.7%), udder 1 (7.6%) and neck 3 (23.07%). The most commonly affected sites were teat and neck. Devilliers *et al.*, (2004) have reported similar results. Mc Murray *et al.*, (2001) indicated that warts differ in their tissue specificity depending on the genotype of the virus and associated disease.

Size of warts, less than one centimeter diameter warts got completely disappeared at the end of 2nd week of treatment. Warts with two-centimeters to ten- centimeters diameter warts got completely disappeared by the end of the 6th week.. Warts above ten-centimeter diameter took 7^{to} 8 weeks to disappear. Two animals showed no improvement beyond 60 days. The time taken for warts to disappear may be varying on the virus type, location, and size of warts. On the other hand, may be farmers not implementing these herbal remedies properly.

Ethno veterinary practices are generally cheap, safe and based on local resources and strengths. These can provide useful alternative to conventional animal health care (Kumar, 2002).

Basker joshi (2011) reported that local tribes and *vangujjars* of Kashipur (Uttarakhand) used *Euphorbia hirta* milky latex in the treatment of warts. *Euphorbia hirta* plant is used for its anti-bacterial, anti-malarial, anti-inflammatory, anti-fungal anti-oxidant property (Kumar *et al.*, 2010) (Fig. 1–4).

Table.1 Types of bovine papilloma virus

SL.NO	TYPES	LESIONS	REPORTED BY
1	BPV 1, BPV2 and BPV 13	Fibropapillomas are associated with sub epithelial fibroblasts	Jelinek and Tachezy (2005)
2	BPV 3,4,6,9,10,11,12.	Epitheliotropic, inducing the formation of true papilloma without the involvement of fibroblasts	Jarrett <i>et al.</i> , 1984
3	BPV 5 and 8	Potential to induce both fibropapillomas and true papilloma	Bloch <i>et al.</i> , 1994
4	BPV 7	Cutaneous papilloma	Ogawa <i>et al.</i> , 2007

Table.3 Scientific classifications

1.Euphorbia hirta

KINGDOM : Plantae
 FAMILY : Euporbiaceae
 GENUS : Euphorbia
 SPECIES : hirta
 BINOMIAL NAME : *Euphorbia hirta*
 TAMIL NAME : Amman pacharisi



2.Allium sativum

KINGDOM : Plantae
 FAMILY : Amaryllidaceae
 GENUS : Allium
 SPECIES : sativum
 BINOMIAL NAME : *Allium sativum*
 TAMIL NAME : Vellaipoondu



3. Musa paradisiaca

KINGDOM : Plantae
 ORDER : Zingiberales
 FAMILY : Musaceae
 GENUS : Musa
 SPECIES : paradisiaca
 BINOMIAL NAME : *Musa paradisiaca*
 TAMIL NAME : Vaalaipalam



4.Acalypha indica

KINGDOM : Plantae
 FAMILY : Euporbiaceae
 GENUS : Acalypha
 SPECIES : indica
 BINOMIAL NAME : *Acalypha indica*
 TAMIL NAME : Kuppaimeni



5.Zingiber officinale

KINGDOM : Plantae
 FAMILY : Zingiberaceae
 GENUS : Zingiber
 SPECIES : officinale
 BINOMIAL NAME : *Zingiber officinale*
 TAMIL NAME : Inji



Table.2 Baseline characteristics of affected animals

Case no	Age (In months)	Site of warts	Warts appearance	Diameter of warts	Duration of warts (In months)	Response to treatment
1	10	Face	Pea-nut appearance	<1cm	2	Regression started after 1st week and wart disappeared at the end of 2nd week (12 days)
2	24	Eye	Finger-like projection appearance (Multiple warts)	3cm-5cm	3 to 4	Regression started after 2nd week and wart disappeared at the end of 5th week (33 days)
3	36	Leg	Finger-like projection appearance	3cm	2	Not-recovered
4	10	Face	Pea-nut appearance	2cm	2	Regression start after 1st week and wart disappeared at the end of 2nd week (15 days)
5	60	Teat	Pea-nut appearance (Multiple warts)	1cm - 2cm	3 to 4	Regression start after 2nd week and wart disappeared at the end of 5th week (31 days)
6	72	Teat	Granule-like appearance (Multiple warts)	1cm - 2cm	3 to 4	Regression start after 2nd week and wart disappeared at the end of 5th week (35 days)
7	78	Udder	Pea-nut appearance (Multiple warts)	1cm - 2cm	5 to 6	Regression start after 2nd week and wart disappear noticed after the 6th week (39 days)
8	30	Neck	Cluster warts (Bunch of grapes)	>10cm	5 to 6	Regression start after 4th week and wart disappear at the end of 7th week (49 days)
9	24	Neck	Cluster warts (Bunch of grapes)	>10cm	5 to 6	Regression start after 4th week and wart disappear noticed after the 8th week (52 days)
10	30	Eye	Finger-like projection appearance	5cm	5 to 6	Regression start after 2nd week and wart disappeared at the end of 5th week (32 days)
11	36	Neck	Lemon like appearance	6cm	3 to 4	Not-recovered
12	72	Teat	Pea-nut appearance (Multiple warts)	1cm - 2cm	3 to 4	Regression start after 2nd week and wart disappear noticed after the 6th week (38 days)
13	48	Teat	Pea-nut appearance (Multiple warts)	1cm - 2cm	3 to 4	Regression start after 2nd week and wart disappeared at the end of 5th week (32 days)
The overall success rate with mean recovery period						11(85.6%) with 28.3 days

Fig.1 (A) Warts around eye before treatment (B) Complete regression of warts after treatment (33 days)



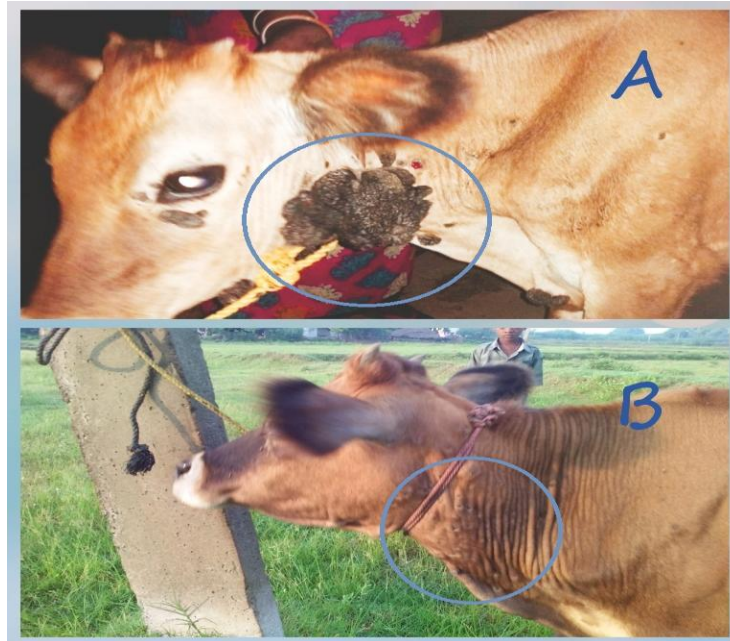
Fig.2 (A) warts in teat of cow - Before treatment. (B) Complete regression of warts- After treatment (35 days)



Fig.3 (A) Warts on the neck of animals- Before treatment B) Complete regression of warts-After treatment (49 days)



Fig.4 (A) Warts on the neck of animal before treatment (B) Wart complete disappeared after (52 days) treatment



Zabra beygom mosavi *et al.*, (2018) reported 69.7% of human warts patients showed complete clearing of the lesions by using garlic. In vitro studies on garlic showed that it can enhance Natural Killer (NK) cells, which are an important part of the immune system in fighting cancers, viruses and certain bacteria (Agarwal 1996). Silverberg NB (2002) reported that garlic was effective on the complete resolution of cutaneous warts.

Sampath kumar *et al.*, (2012) reported anti-fungal, anti-biotic and anti-oxidant activity found in the peel of ripe bananas, and also used to treat the warts and helps to reduce the irritation and inflammation of the skin.

Islam *et al.*, (2015) reported that *Acalypha indica* contains a phytol compound, and they reported phytol compound has anti-microbial, anti-mutagenic, anti-tumoral, cytotoxic and anti-teratogenic.

Awang (1992) recorded that the ginger revealed anti-inflammatory, anti-oxidant, anti-

microbial activities and also utilized to treat warts.

Though there are a lot of remedies available to treat warts such as anthiomaline, autogenous blood, homeopathy remedies etc, with levels of success vary. No published study was found on the usage of herbal remedies to treat warts in the veterinary field. At the moment, our aim was to establish a clinically useful and affordable treatment for curing warts.

In the present study the overall complete clearance was achieved in 11(84.6 %) animals with a mean recovery period of 28.3 days. This report was comparatively higher than the earlier reports of (Kavitha *et al.*, 2014) who achieved a success rate of anthiomaline (81%), local application of thuja ointment (58%), oral treatment of thuja (70%): However this success rate was lower than the other studies of Kavitha *et al.*, (2014) who achieved a 92% success rate by using autogenous blood.

However, Terziev *et al.*, (2015) reported that the autogenous vaccine yielded good results but only for small warts up to 1-2 cm diameter, whereas the outcome in larger growth was not satisfactory, as well as Silva *et al* (2004) reported it was economically viable to repeat the continuous treatment in animals that did not recover after the first therapeutic intervention. In this situation, these herbal remedies can be used to treat the warts because, it cured the above 10cm diameter size warts and very much economical.

Farmers can treat warts on their animals by using this herbals available in and around their home. This result clearly proved that herbal remedies were effective (84%) for the treatment of warts in animals.

The study demonstrated that herbal paste containing *Euphorbia hirta*, *Allium sativum*, *Musa paradisiacal*, *Acalypha indica* and *Zingiber officinale* was potentially better to treat warts in cattle and thus provide a cost effective option to treat warts, even when warts are bigger and diffused.

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