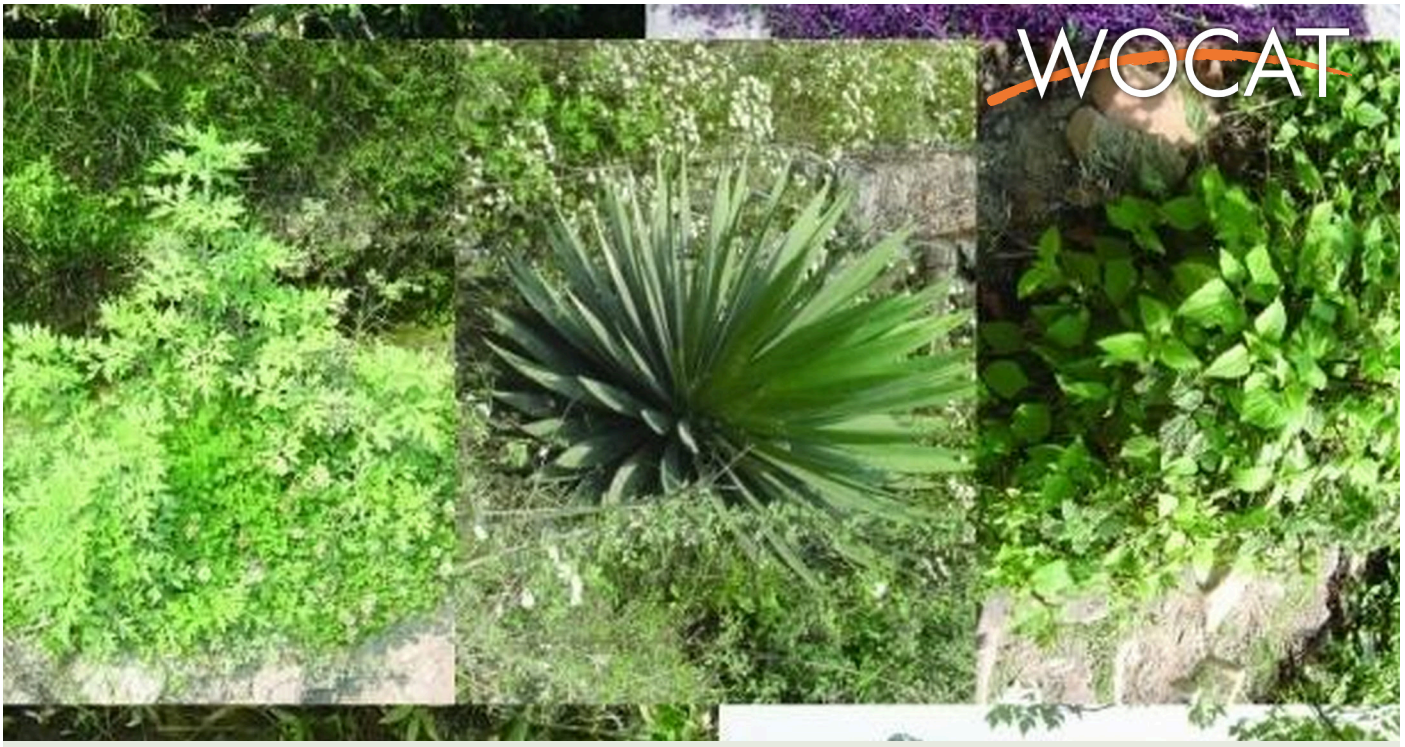


The following plants are amongst many reported to have pesticidal value (from top left corner to lower right corner): - sisnu (Urtica dioica), - timur (Zanthoxylum oxyphyllum), - titepati (Artemisia vulgaris), - ketuke (Agave americana), - banmara (Eupato

Organic pest management (尼泊尔)

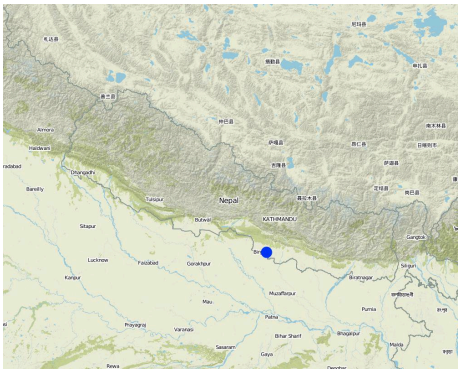
Jaibik rogkira byabasthapan (Nepali)

描

Promotion of botanical pesticides for organic pest management and liquid manure

Production of fresh vegetable is often hampered by pests which may reduce production and badly affect farmers' income. Chemical pesticides are available and are used, sometimes excessively, to combat these pests in parts of Nepal's midhills. Botanical pesticides prepared from a variety of plant ingredients soaked and fermented in cattle urine provide a suitable alternative to chemical pesticides, at least for subsistence and semi-commercial vegetable producers. These pesticides are based on farmer's traditional knowledge and are emerging as alternatives to the application of chemical pesticides.
All the ingredients for these pesticides are available locally; in some cases the plants are considered as weeds. Crofton weed (banmara) grows in abundance along roads and paths, and on forest floors and suppresses the growth of other more valuable species. It is believed to have pesticidal effects and is often used in botanical pesticides. The Nepali names of other plants commonly used in the tonics are asuro (malabara tree), titepati (mugwort), bakaino (Persian lilac), timur (Nepali pepper), patina (field mint), tulsi (sweet basil), neem, sisnu (stinging nettle), ketuke (century plant), and khirro (tallow tree). In general it is said that herbs and plants that are bitter, pungent, or 'hot' or that produce a strong odour are most effective in botanical pesticides.
The botanical pesticide is diluted with water before applying to vegetable crops. The dilution ratio depends on the age and type of the plant being treated with a higher dilution for seedlings in nurseries than for mature plants. While botanical pesticides do not kill all pests, they do combat soft-bodied insects such as aphids and act as a repellent against larger insects like cutworms, various larvae, and red ants. They are not usually effective against plant diseases.
In some places innovative farmers have started to produce and sell botanical pesticides for pest management and as a liquid manure for foliar application.

地



地点: Midhills districts of Nepal, 尼泊尔

分析的技术场所数量:

选定地点的地理参考

- 85.0, 27.0

技术传播: 均匀地分布在一个区域

在永久保护区？:

实施日期:

介绍类型

- 土地使 创新
- 作为传 ≥50 年份
- 在实 / 期
- 外 干

Crop sprayed exclusively with botanical pesticides (Juerg Merz)

技术分

主要目的

- 改 产
- 减少、 、恢复土地 化
- 保护 态
- 合其他技术保护 /下或 区域
- 保持/提 多样性
- 低 害
- 应气候变化/极 天气及其影响
- 减 气候变化及其影响
- 创 有 影响
- 创 有 会影响
- [x] Cheaper pest management

土地利用

农田

- 一年一作: - 其他

供水

- 养
- 合 水
- 充分

土地退化相关的目的

- 止土地 化
- [x] 减少土地 化
- 修复/恢复严 化 土地
- 应土地 化
- 不

解决的退化问题

化学性土壤退化 - Cn 力下 和有机 含 下

SLM组

- 害 合 包括有机农业

SLM措施

管理措施 - M7 其它

技术图

技术规范

技术建 与 护 动、投入和

投入和成本的计算

- 成本为 每个技术区域
- 成本 使 **美元** 币
- 汇 换 为 1 元 元/不
- 劳工 每日平均工 2.00成本

影响成本的最重要因素

不

技术建立活动

1. Different plants with pesticidal properties are collected and chopped into small pieces. Only tenderparts should be used to facilitate decomposition. (时 / None)
2. Other materials like ginger powder, green chilli, ash, and mustard cake are mixed with the chopped plant material (时 / None)
3. The material is placed in a plastic drum or earthen pot and soaked in cattle urine at the rate of about one kilogramme of solid material per 2 litres of cattle urine. (时 / None)
4. The drum is close as air-tight as possible and put in a shady place. (时 / None)

技术建立的投入和成本

对投入进行具体说明	单位	数量	单位成本 (美元)	每项投入的总成本 (美元)	土地使用者承担的成本%
劳动力					
Labour	Persons/day	2.0	2.0	4.0	100.0
设备					
Drum	pieces	1.0	6.0	6.0	100.0
技术建立所需总成本				**10.0**	
技术建□ 总成本□ □ 元				*10.0*	

技术维护活动

1. The botanical pesticide needs to be stirred with a wooden stick about every 15 days. (时□ /□ □ None)
2. The prepared pesticide is normally ready for field application after about 35-40 days of fermentation/preservation. (时□ /□ □ None)
3. The pesticide is diluted with water 1:4 (1 part pesticide solution: 4 parts water) for mature plants and 1:8 for nurseries and applied with a jug, sprayer, or broom. (时□ /□ □ None)

□ □ □ 境

年平均降雨量

- < 250毫□
- 251-500毫□
- 501-750毫□
- 751-1,000毫□
- [x] 1,001-1,500毫□
- [x] 1,501-2,000毫□
- 2,001-3,000毫□
- 3,001-4,000毫□
- > 4,000毫□

农业气候带

- [x] □ □ □
- 半□ □
- 半干旱
- 干旱

关于气候的规范

Annual rainfall: Also 2000-3000 mm
Thermal climate class: subtropics

斜坡

- [x] 水平□ 0-2%□
- [x] □ □ 3-5%□
- 平□ 6-10%□
- □ 坡□ 11-15%□
- 崎岖□ 16-30%□
- □ 峭□ 31-60%□
- □ 常□ 峭□ >60%□

地形

- □ 原□ 平原
- 山□
- [x] 山坡
- [x] 山地斜坡
- □ 坡
- □ 底

海拔

- 0-100 m a.s.l.
- [x] 101-500 m a.s.l.
- [x] 501-1,000 m a.s.l.
- 1,001-1,500 m a.s.l.
- 1,501-2,000 m a.s.l.
- 2,001-2,500 m a.s.l.
- 2,501-3,000 m a.s.l.
- 3,001-4,000 m a.s.l.
- > 4,000 m a.s.l.

.....应用的技术

- 凸形情况
- 凹□ 情况
- 不□ 关

土壤深度

- □ 常□ 0-20厘□ □
- □ □ 21-50厘□ □
- 中□ □ □ 51-80厘□ □
- □ □ 81-120厘□ □
- □ 常□ > 120厘□ □

土壤质地（表土）

- □ □ □ □ □ □
- 中□ □ 壤土、□ 土□
- □ □ □ □ □ 土□

土壤质地（地表以下>20厘米）

- □ □ □ □ □ □
- 中□ □ 壤土、□ 土□
- □ □ □ □ □ 土□

表土有机质含量

- □ >3%□
- 中□ 1-3%□
- 低□ <1%□

地下水位

- □ □ 上
- < 5□
- 5-50□
- > 50□

地表水的可用性

- □ □
- 好
- 中□
- 匮乏/没有

水质（未处理）

- □ 好□ □ 水
- 不□ □ □ 水□ □ □ 处□
- 仅供农业使□ □ □ □ □
- 不可□

盐度是个问题吗？

- 是
- □ 否

洪水发生

- 是
- 否

物种多样性

- □
- 中□
- 低

栖息地多样性

- □
- 中□
- 低

应□ □ 技术□ 土地使□ □ □ □ 征

市场定位

- □ □ □ □ □ □
- [x] □ 合□ □ 商业□
- 商业/市场

非农收入

- 低于全□ 收入□10%
- 收入□ 10-50%
- > 收入□ 50%

相对财富水平

- □ 常□ □
- □ □
- 平均水平
- 丰富
- □ 常丰富

机械化水平

- 手工作业
- □ 力□ 引
- 机械化/□ 动

定栖或游牧

- 定栖□
- 半□ □ □
- □ □ □

个人或集体

- [x] 个人/家庭
- 团体/□ 区
- 合作□
- 员工□ 公司、政府□

性别

- 女人
- □ 人

年龄

- 儿□
- □ 年人
- 中年人
- □ 年人

每户使用面积

规模

土地所有权

土地使用权

< 0.5 公
0.5-1 公
1-2 公
2-5公
5-15公
15-50公
50-100公
100-500公
500-1,000公
1,000-10,000公
> 10,000公

小 模
中 模
大 模

州
公司
村庄
团体
个人 未命名
个人 有命名

入 无
区 有
个人

用水权

入 无
区 有
个人

进入服务和基础设施的通道

影响

社会经济影响

农业投入	增加	低	
工作	增加	低	Labor- intensive preparation of botanical pesticides. Need to be prepared fresh for each crop, therefore demanding labor often at inconvenient times
Pest incedence and destruction of crops	increased	decreased	
Crop health	reduced	improved	due to additional fertilizer
Organicproduction of crops	reduced	improved	

社会文化影响

Social prestige as use shows user to be a progressive farmer	decreased	increased	
Acceptance of the fertilizer	reduced	improved	May not be accepted due to urine in the mixture (especially if human urine is used)

生态影响

Application of agrochemcals	improved	reduced	
Soil biology health	reduced	improved	

场外影响

地下水/河 污染	增加	减少	Reduction of chemical pesticide contamination of water bodies
Dependence on oncostly external inputs	improved	reduced	

成本效 分析

与技术建立成本相比的效益

期回报	常	常	极
期回报	常	常	极

与技术维护成本相比的效益

期回报	常	常	极
期回报	常	常	极

气候变化

-

和 应

采用该技术的地区内土地使用者的百分比

单例/实
1-10%
11-50%
> 50%

在所有采用这种技术的人当中，有多少人在没有获得物质奖励的情况下采用了这种技术?

0-10%
11-50%
51-90%
91-100%

最近是否对该技术进行了修改以适应不断变化的条件？

是
否

什么样的变化条件？

气候变化/极□ 气候
不断变化□ 市场
劳动力可□ 性□ 例如□ □ 于□ □ □

□ □ 和吸取□ 教□

长处: 土地使用者的观点

长处: 编制者或其他关键资源人员的观点

- Organic pest management using botanical pesticides reduce the expense of pest control

  How can they be sustained / enhanced? Further promote the benefits of organic pest management
- Organic pest management reduces the negative impact of chemical pesticides

  How can they be sustained / enhanced? Further promote the benefits of organic pest management

弱点/缺点/风险: 土地使用者的观点如何克服

弱点/缺点/风险: 编制者或其他关键资源人员的观点如何克服

- Labour intensive preparation often at inconvenient times as the botanical pesticide has to be prepared fresh for each crop and can only be stored for a limited amount of time Develop methods that reduce labour requirements and highlight possibilities for bulk production and adequate storage without losing effectiveness
- The reagents that are effective in the botanical pesticides have not been identified Carry out applied research into the different reagents and
  their effect on different pests
- The botanical pesticides are not effective against all pests Carry out applied research into and document the effects of different botanical pesticides on different pests

参□ 文□

编制者
Richard Allen

Editors

审查者
David Streiff
Alexandra Gavilano

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资源人
Richard Allen - SLM专业人员
Director - SLM专业人员
Team Leader - SLM专业人员

WOCAT数据库中的完整描述
https://qcat.wocat.net/zh/wocat/technologies/view/technologies_1755/

链接的SLM数据
Approaches: Farmer field schools on integrated plant nutrient systems https://qcat.wocat.net/zh/wocat/approaches/view/approaches_2351/
Approaches: Farmer-led experimentation https://qcat.wocat.net/zh/wocat/approaches/view/approaches_2559/
Approaches: Farmer-to-farmer diffusion https://qcat.wocat.net/zh/wocat/approaches/view/approaches_2558/

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机构
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- HELVETAS (Swiss Intercooperation)

□ □
- Sustainable Soil Management Programme, Nepal (SSMP)

主要参考文献

- Neupane, F.P. (2056 BS - 1999/2000) Insect Control by Herbs. Kathmandu: Sajha Publications: SSMP
- Several pamphlets on different tonal tonic compositions are available in Nepali from SSMP: SSMP