Crop Growth Promoter (KAMAAL 505) cum pesticide formulation

Innovator: Shri Iswarsingh Kundu

Age: 45 years

Education: 10 Standard + ITI (Draftsman (Civil)

Address: P.O.: Kailram, District: Kaithal, Haryana - 136 117. Ph. No.: 01746-266185

Summary of the innovation: Shri Iswarsingh Kundu after carrying out large number of trails / experiments of various self made formulations prepared by combining wide range of plants / herbs has finally achieved what he calls as a standardized formulation 'KAAMAL 505). He claims the formulation to be highly beneficial for the over all crop growth as it acts as a growth promoter, soil fertility enhancer and plant protect act formulation. An added advantage of this formulation is that it enhances the effectiveness of the urea and chemical crop protectant formulations when mixed with them and also helps in reducing the requirement of the both by nearly 50 per cent. The farmer has been highly successful in demonstrating the same to large number of farmers in the region and the impact is such that today he has 25 big farmers as a permanent customer who, book there requirement to the innovator well in advance.

The method of developing the formulation is also novel. Farmer prepares two different solutions by boiling the ingredients in prescribed quantity viz., **solution A** [comprising of neem (*Azadhirachta indica*) leaves, aak (*Calotropis gigantia*) leaves, dhatura (*Datura metal*) leaves and bhang (*Cannabis indica*) leaves] and **solution B** [comprising of tobacco powder, chiraita (*Swertia chiraita)*, Kutki (*Picrorhiza kurroa*), bawachi (*Psoralea corylifolia*), tamarind pulp, red chilli powder and reetha (*Sapindus trifoliatus*)]. These two solutions are then mixed to a base comprising of neem oil, tobacco powder and reetha.

Farmer markets the final product by the name 'KAMAAL 505' and the cost of the formulation is kept Rs. 150 – 175 / liter.

Non-Patent PAS:

Others such as ***Calotropis gigantea*** and ***Argemone mexicana*** are used to prepare **antifeedant** sprays in the same way as is done with leaves from the famous **neem tree (*Azadirachta indica*).** Still others unfold their potential on the field itself, so that it is difficult to say whether the farmer is using a weed for pest control when all he does is simply leave the plant alone instead of pulling it out.

http://www.farmingsolutions.org/successstories/stories.asp?id=24 (07/08/2006)

Thus ***neem*** retains its unique place among the plant kingdom as the most popular botanical insecticide and repellant used in agriculture of the past and present.

Turmeric, garlic, Vitex negundo, glyricidia, castor, Aristolochia, ginger, Agave Americana, custard apple, Datura, *Calotropis, Ipomoea* and *coriander* are some of the other widely used botanicals to control and repel crop pests.

http://www.hinduonnet.com/thehindu/seta/2002/05/02/stories/2002050200200300.htm (7/08/2006)

Cannabis has been utilized as a pest repellent or pesticide, in a variety of formulations. These formulations include dried plant parts, plant extracts or pure cannabinoids, as well as use of the genus as a "companion plant".

http://mojo.calyx.net/~olsen/HEMP/IHA/jiha4210.html (07/08/2006)

McPartland, John M. 1997. *Cannabis* as repellent and pesticide**.** *Journal of the International Hemp Association* 4(2): 87-92.

Bajpai N. K. and V. K. Sharma, 1992. Possible use of hemp ***(Cannabis sativa* L.)** weeds in integrated control. *Indian Farmers' Digest* 25(12):32, 38.

Dahiya M.S. and G. C. Jain, 1977. Inhibitory effects of cannabidiol and tetrahydrocannabinol against some soil inhabiting fungi. *Indian Drugs* 14(4):76-79.

Jalees S., S. K. Sharma, S. J. Rahman and T. Verghese, 1993. Evaluation of insecticidal properties of an indigenous plant, *Cannabis sativa* L., against mosquito larvae under laboratory conditions. *J. Entomol. Res.* 17:117-120.

SOAP NUT Sapindus Trifoliatis

A washing and cleansing agent that is used for an organic emulsifier with Neem and Karanja. It is also used as a soil drench for helping to control slugs and mealy bugs.

http://www.theveggiepatch.net/pestcontrol.htm (07/08/2006)

US 6,538,027 patent titled 'Compositions comprising ratite oil or active fractions thereof and methods of using these composition as insect repellents' has been granted to Manker , et al. in 2003 at USPTO claims insecticidal or repellecnt properties of neem, ***Sapindus*** and other.

"Known natural oils that repel insects include rotundial (from the leaves of *Vitex rotundifolia*, Watanabe K *et al.* (1995) Biotech Biochem 59(10):1979-1980); citronella oil (e.g. U.S. Pat. No. 5,346,922); eucalyptus oil (Watanabe *et al.* (1993) J. Agric. Food Chem. 41:2164-2166); ***neem oil*** (Sharma V P et al. (1993) J. American Mosquito Control Association 9(3):359-360); and oil of Hedeoma pulgioides, oil of anisum and oil of chrysanthemum (U.S. Pat. No. 5,208,209). Another natural oil that has repellent activity is saponin (Croda from ***Sapindus***). Saponin has been shown to repel lice and also serves to improve the spreading consistency of repellent compositions and reduce greasiness."