

# Applications Of Essential Oil's Bi-Product

After examination on the Internet on various Aromatic crops, it was felt Lemongrass is one oil, which gained maximum plantation so far in State followed by Citronella, Palmrosa, Jamrosa and Mentha Arvensis. Since these oils are very common & enough data is known on same, there is hardly anything left for development of New Strains (although same is very important if these crops get well established economically based on past- research). Agronomical practice has to be changed totally from conventional to total organic or wild grown which is demand of world market. It was felt that cost of oil has to brought down at such level so that it can easily make synthetic isolates obsolete on economic front like how it happened in Mentha Arvensis & other Mentha Derivatives. It can be achieved in oils like Lemongrass, Citronella, Palmrosa, Jamrosa also if cropping pattern of these crops can be optimized like Mentha Arvensis & Piperita in Uttar Pradesh & Punjab. Burden of entire expenditure of year for an acre of land should not be left alone to Aromatic crop but shared between 3 to 4 other crops like Kerala, UP & Punjab.

We are sure that with concentrated & focused attention on multi cropping at same place & optimizing wasteland can bring targeted figures in Vision 2007 for these crops.

Utilization of every part of crop is must otherwise wastage of each output without proper understanding of it is crime on mother nature which has given us enough for not only our use but for all living creature on earth. Spent biomass is typical example of it. It has been observed that it is very useful for animal as cattle feed (copy of view given by S. Arctander in 1969 when such cultivation was very common). Apart same spent biomass can be utilized by farmers on distillation site to make vermin compost & use same for increasing yield of crops on field. This will not only increase yield for grasses grown but intercrops, which are even more valuable. Similar success in Uttaranchal in Geranium vermin compost has made higher yield of Apple grown in same orchards. Spent biomass if left surplus can be utilized for making mosquito-repellent incense. Last use is for burning as fuel for distillation where its ash can be utilized as fertilizer for same crop keeping ecological balance of Mother Nature.

Water of distillation is most important product. Unfortunately application & understanding of same has not been developed yet at farmers & researcher's level. This resulted in wastage of this most important product to drain so far. Last couple of years of practical experiment together with commercialization of few distillate water enabled us to come to conclusion that if proper application of same is done than cost realization from same can be enough to cover whole cost plus profit making oil & biomass as bi-product. These example has been commercialized in case of Lavender, Rose, Geranium crops making commercial cultivation of it viable in growing regions like Uttaranchal & Himachal.

This distillate waters are having lot of useful component, which were separated in last 4 years of extensive Research & development at our center in Mumbai. Extensive in depth analysis of extract from same enabled us to come to conclusion that component present in water are more useful than present in oil. This is due to affinity of important oxygenated hydrocarbons with water. Thus oil contains more terpenes & sesquiterpenes, which are having less solubility in water. These terpenes & sesquiterpenes are having very low odor & taste character so not very valuable from order & taste point of view. Application of extract from distillation water can be immense. However distillate water can be utilized itself for many application because of naturalness & purity.

Few application of distillate water are as follows: -

- a) Water base air-fresheners like Mosquito-repellent, cologne :- Nice mosquito repellent spray can be made with Citronella distillate. Lemongrass distillate can be used for making Cologne. Palmrosa/ Jamrosa distillate can be used to make nice Rose water based fresheners. Mentha Arvensis distillate can be used for making cool air fresheners.
- b) Herbal Shampoo :- Nice herbal natural Shampoo can be made with Aromatic distillate water for very low cost. These shampoos can be marketed based on distillate water for various applications. Lemongrass distillate can be used for removing body pains Shampoo. Citronella distillate can be used for Mosquito repellent shampoo. Palmrosa distillate can be used for making Rose Fragrant shampoo for pleasant atmosphere. Mentha distillate based shampoo can be for cold, cough & rheumatic pains.
- c) Herbal Tea :- Lemongrass & Pudina (Mentha) has been used from ancient times for making herbal tea which cures cough & cold. It is also used for solving any stomach problems. If marketed properly in Mineral water bottle, it can become very big market.
- d) Floor Cleaners & Hygienic antibacterial Sprays :- All these Aromatic distillate can be used in place of Phenyl which consists of many harmful synthetic cresols & pyridines which comes from Petrochemical sources. These Aromatic distillate repelles mosquitoes & flies leaving no harmful side effect for mankind. Some of synthetic pyretheroids used for repelling mosquito are more harmful to human than to mosquitoes. Adverse impact of these dangerous pyretheroids are covered/ masked by synthetic fragrances so common people can not understand it.