FLOWER AGGREGATION AND PROCESSING

The dry flowers are taken to various designated collection centres in the various growing areas. On delivery farmers are paid an advance of 100/- per every kg, later final payment is done after determination of pyrethrin content at the factory in Nakuru through ……vouchers'.

Pyrethrum collection centre

There are two extraction plants at the PRA. Currently the plant that is in operation has a capacity of 25MT per day. The new plant, which has capacity of 50MT per day has not been commissioned because of low flower production and deliveries, and some aspects that are not complete. For test run, the plant requires 350MT of flowers and for it to be commissioned it has to run for 30 days at full capacity. The new plant is more efficient and cost effective since it requires only 15 litres of hexane per tonne of flowers down from the current 250 litres per tonne of flowers being experienced with old plant.

To ensure the viability of the processing company it is imperative that sufficient flowers are produced to utilize the installed capacity of the factory. Currently, the country is estimated to produce between 2000-3000 MT per year of dried pyrethrum flower against an estimated potential of 20,000 MT.

Current processing plant in Nakuru

The major problem in processing remains the **inadequate flower deliveries** to ensure optimum operation of the old plant and commissioning of the new one. Whereas the Extraction Efficiency of 87% and Refinery Efficiency of 95% attained are within acceptable range for the plant, the overall processing efficiency of 55% (ratio of Pys in refined extract to that in dry flowers) is very low compared to the recommended minimum of 74%. This is attributed to long storage of dry flowers at the factory while waiting for processing.

The determination of moisture in pyrethrum flowers is carried out by distillation and vacuum methods where the distillation method is superior to the latter because the desiccant used in the latter method absorbed volatile oils as well as the water. The drying temperature also affected the pyrethrin content and varied with clones. Crush the dried pyrethrum flowers to a fine powder in a mortar and pestle or use a blender. For the best results, use the powder immediately after grinding, as the active ingredients deteriorate very quickly.\