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Effects of Drying on Quality of Rosemary and Thyme Plants
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SUMMARY

In 1999, rosemary (*Rosmarinus officinalis* L.) and thyme (*Thymus vulgaris* L.) were introduced to the Royal Project station in the North of Thailand alongside with other new herb varieties. The main aim is supplying the domestic market with foreign herbs. The herbal product range includes fresh and dried herbs and a new range of aromatherapy products. However, at present there is a lack of effective quality control system for the herb products. Additionally, there is an increased demand for dried herbs and a need to find sustainable alternatives to supplement the present drying methods.

Therefore, an objective has been set to evaluate the performance of three different solar dryers available at the Chiang Mai University regarding the end product quality. The quality parameters were selected on the basis of internationally recognized standards for dried spices and medicinal plants and include colour assessment, ash content, essential oil and oleoresin content and composition with regard to the two most important active components, 1,8 cineole in rosemary and thymol in thyme.

The colour preservation of dried rosemary and thyme was best achieved with the solar tray dryer. The two solar tunnel dryers also had good performance, particularly when the samples were dried with additional black cover and in the afternoon hours. The essential oil content was highest for rosemary and thyme samples harvested at flowering. Additionally, thyme samples harvested at noon had higher essential oil content. No significant difference in reduction could be observed between the various drying treatments. However, in order to confirm these additional repetitions are required. The content of 1,8 cineole and thymol was best preserved with the samples dried by the STD UH. Drying air temperature significantly influenced the 1,8 cineole and thymol content, leading to 66 % loss of 1,8 cineole and more than 90 % loss of thymol at 60 °C. Temperature range between 50 – 55 °C can be recommended for maintaining the optimum quality of dried rosemary and thyme.

Regarding the drying efficiency the tunnel dryers had better performance (shorter drying times for reaching market moisture content). Regarding the product quality all three dryers showed good performance and can be utilised as a supplement to the present drying practices at the Royal Project.