VOLATILE ESSENTIAL OIL FROM MEXICAN SAGE, ARTEMISIA MEXICANA

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Artemisia mexicana grows wild abundantly along the roadsides in the vicinity of Norman, Oklahoma, and Oklahoma City, Oklahoma. The aromatic nature of the plant is quite noticeable, especially on crushing the tops of the plants at, or a little after, the flowering period. Because of this odor, it was thought advisable to attempt to obtain a volatile essential oil by steam distillation of the tops of the plant, especially since other members of this family are known to yield such oils.

About six inches of the tops of the plants were accordingly collected and steam distilled for yield. In the season of 1940, material was collected in the latter part of September and allowed to air dry for two or three weeks. It is believed that this drying period was too long for best results, as the plant loses its volatile oil content readily and almost completely. Nevertheless, a yield of about 3.2 ml of oil per 100 g of plant parts was obtained. This yield is believed lowered also by loss of the more volatile portion by reason of insufficient condensation, which should have been supplemented by auxiliary reflux condensation. The other source of error, lack of sufficient steam to carry over the heavy ends, is believed not to apply.

The season of 1941 was very rainy, so that material could not be collected during the month of September, when the optimum yield was to have been expected. Material collected October 5 yielded 0.275 ml volatile oil per 100 g fresh herb of the tops; and even after about two weeks drying, and removal of stems by rubbing through a coarse screen, the yield was 1.54 ml of oil per 100 g material, only about half that secured in the previous year, owing, probably, to the great difference in weather conditions. Material gathered earlier than September and later than October afforded much lower yields than that from the September and October harvest.

Constants and properties of the oil—The color of the oil is light yellowish brown to amber. The odor of the oil is terpene-camphoraceous.

	1940 *Crop*	1941 *Crop*	
Density of oil	0.935 (25°C)	0.9396 (20°C/20°C)	(Shead)
Index of refraction, n, (Abbe)	1.4705 (20°C)	1.4735 (20°C)	(Shead)
$(\alpha)_D^{20°C.}$ (100 mm tube)	—18.25°	—17.5°	(Shead)

Work is to continue on the analysis of the oil. The assistance of Mr. John Verlyn Blair is gratefully acknowledged.