A NOTE ON THE DETERMINATION OF ASCARIDOLE IN OIL OF CHENOPODIUM

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IN a previous communication[1] describing results in which specially purified ascaridole[2] was used, it was pointed out that the factor used in the B.P. 1953 for the conversion of volume of titrant into a weight of ascaridole was incorrect, e.g., a sample of Oil of Chenopodium containing 54 per cent. w/w of ascaridole gave a result of 65 per cent. w/w by the B.P. method. Furthermore, because the amount of iodine liberated is not directly proportional to the weight of ascaridole, analysis of samples of low grade oils gave proportionately higher errors in the results than those obtained for high grade oils; an invariant factor is therefore inadequate.

A quadratic expression was proposed, which, when applied to the observed measurements using the B.P. procedure, gave correct figures for the ascaridole content of the oils provided that the volumes of titrant were within a specified range. Unfortunately, the use of the expression is time-consuming.

TABLE I

EQUIVALENT (IN g.) OF $C_{10}H_{16}O_2$ (ASCARIDOLE) FOR VALUES OF "*n*" BETWEEN 20 AND 40 ml. 0·1 N $Na_2S_2O_3$

ml.	0	1	2	3	4	5	6	7	8	9	Mean Differences 1 2 3	4 5 6	7 8 9
20	0·1088	1094	1100	1106	1112	1118	1124	1130	1136	1142	1 1 2	2 3 4	4 5 5
21	0·1148	1154	1160	1166	1172	1178	1184	1191	1197	1203	1 1 2	2 3 4	4 5 5
22	0·1209	1215	1221	1227	1233	1239	1246	1252	1258	1264	1 1 2	2 3 4	4 5 6
23	0·1270	1276	1282	1289	1295	1301	1307	1313	1320	1326	1 1 2	2 3 4	4 5 6
24	0·1332	1338	1344	1351	1357	1363	1369	1376	1382	1388	1 1 2	2 3 4	4 5 6
25	0·1394	1401	1407	1413	1419	1426	1432	1438	1445	1451	1 1 2	3 3 4	4 5 6
26	0·1457	1464	1470	1476	1483	1489	1495	1502	1508	1514	1 1 2	3 3 4	4 5 6
27	0·1521	1527	1534	1540	1546	1553	1559	1565	1572	1578	1 1 2	3 3 4	4 5 6
28	0·1585	1591	1598	1604	1611	1617	1623	1630	1636	1643	1 1 2	3 3 4	5 5 6
29	0·1649	1656	1662	1669	1675	1682	1688	1695	1701	1708	1 1 2	3 3 4	5 5 6
30	0·1714	1721	1728	1734	1741	1747	1754	1760	1767	1774	1 1 2	3 3 4	5 5 6
31	0·1780	1787	1793	1800	1807	1813	1820	1826	1833	1840	1 1 2	3 3 4	5 5 6
32	0·1846	1853	1860	1866	1873	1880	1886	1893	1900	1906	1 1 2	3 3 4	5 5 6
33	0·1913	1920	1927	1933	1940	1947	1953	1960	1967	1974	1 1 2	3 3 4	5 5 6
34	0·1980	1987	1994	2001	2008	2014	2021	2028	2035	2041	1 1 2	3 3 4	5 5 6
35	0·2048	2055	2062	2069	2076	2082	2089	2096	2103	2110	1 1 2	3 3 4	5 5 6
36	0·2117	2124	2131	2137	2144	2151	2158	2165	2172	2179	1 1 2	3 3 4	5 6 6
37	0·2186	2193	2200	2207	2214	2220	2227	2234	2241	2248	1 1 2	3 3 4	5 6 6
38	0·2255	2262	2269	2276	2283	2290	2297	2304	2311	2318	1 1 2	3 4 4	5 6 6
39	0·2325	2332	2339	2346	2354	2361	2368	2375	2382	2389	1 1 2	3 4 4	5 6 6

The statement in a recent review,[3] concerning the lack of a more adequate procedure than the official method for a routine test for the commercial

evaluation of oils of chenopodium, prompts us to present a Table of equivalents obtained by the use of the previously reported quadratic expression.[1] The application of the iodimetric method in conjunction with the Table, gives a correct evaluation of the ascaridole content of chenopodium oils.

Method for the Determination of Ascaridole in Oils of Chenopodium

(1) Perform the determination as described under Chenopodium Oil B.P. 1953.

(2) If the number of ml. (*n*) of 0·1 N sodium thiosulphate required (after deduction of the blank titration) is within the limits 20 to 40, read the equivalent of ascaridole (in g.) from the Table (used similarly to logarithmic tables).

(3) If the titration is outside the stated limits, repeat the determination using more or less than the stated 5 ml. of the acetic acid solution of the oil, to give a titration between 20 and 40 ml. of 0·1 N sodium thiosulphate.

References

1. Beckett and Jolliffe, *J. Pharm. Pharmacol.*, 1953, **5**, 869.
2. Beckett, Donbrow and Jolliffe, *ibid.*, 1955, **7**, 55.
3. Guenther and Langenau, *Analyt. Chem.*, 1955, **27**, 673.