

**Supporting Information**

*Rec. Nat. Prod.* 17:4 (2023) 595-614

**Chemical Compositions of Essential Oils from German, Roman,  
and Chinese Chamomile Flowers and Their Biological Activities  
against Three Economically Important Insect Pests**

**Abbas Ali<sup>1\*</sup>, Nurhayat Tabanca<sup>2</sup>, Vijayasankar Raman<sup>1</sup>,  
Cristina Avonto<sup>1</sup>, Xiangbing Yang<sup>1</sup>, Betul Demirci<sup>3</sup>,  
Amar G. Chittiboyina<sup>1</sup> and Ikhlas A. Khan<sup>1</sup>**

<sup>1</sup>*National Center for Natural Products Research, The University of Mississippi, University, MS 38677,  
USA*

<sup>2</sup>*United States Department of Agriculture, Agricultural Research Service, Subtropical Horticulture  
Research Station, Miami, FL, 33158 USA*

<sup>3</sup>*Department of Pharmacognosy, Faculty of Pharmacy, Anadolu University, 26470 Eskisehir, Türkiye*

---

<b>Table of Contents</b>	<b>Page</b>
<b>Table S1:</b> Factor loads of individual variables	2

---

**Table S1:** Factor loads of individual variables

<b>*</b>	<b>Principal 1</b>	<b>Principal 2</b>	<b>Principal 3</b>	<b>Principal 4</b>	<b>Principal 5</b>	<b>Principal 6</b>	<b>Principal 7</b>
<b>1</b>	-0.27944	0.95508	0.03682	0.04387	-0.04415	0.06713	0.00265
<b>2</b>	-0.27421	0.94602	0.04015	0.06616	0.15393	-0.01301	0.00213
<b>3</b>	-0.27947	0.95547	0.03696	0.04462	-0.03779	0.06460	0.00264
<b>4</b>	-0.26394	0.91644	0.04132	0.07909	0.27974	-0.06515	0.00174
<b>5</b>	-0.27823	0.95571	0.03884	0.05620	0.06295	0.02408	0.00238
<b>6</b>	-0.27594	0.93741	0.03376	0.02835	-0.17141	0.11741	0.00292
<b>7</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>8</b>	-0.27737	0.94377	0.03462	0.03245	-0.13848	0.10449	0.00286
<b>9</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>10</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>11</b>	0.66333	0.71174	0.04663	0.07971	0.20987	-0.02898	0.00248
<b>12</b>	-0.27644	0.95173	0.03958	0.06156	0.11137	0.00440	0.00225
<b>13</b>	-0.27879	0.95078	0.03579	0.03831	-0.09060	0.08559	0.00276
<b>14</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>15</b>	-0.27746	0.94421	0.03469	0.03277	-0.13593	0.10349	0.00285
<b>16</b>	-0.27914	0.95280	0.03622	0.04056	-0.07195	0.07820	0.00271
<b>17</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>18</b>	-0.27864	0.94998	0.03564	0.03753	-0.09710	0.08817	0.00277
<b>19</b>	-0.27790	0.94627	0.03500	0.03432	-0.12337	0.09854	0.00283
<b>20</b>	-0.17296	-0.37090	0.44341	0.77318	-0.13133	-0.14344	0.01668
<b>21</b>	-0.22643	-0.48722	0.44616	0.48626	0.16668	0.49806	-0.00150
<b>22</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>23</b>	-0.27516	0.94853	0.03994	0.06436	0.13713	-0.00612	0.00218
<b>24</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>25</b>	-0.27372	0.92805	0.03265	0.02332	-0.21103	0.13286	0.00300
<b>26</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>27</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>28</b>	-0.18967	0.67909	0.03905	0.11064	0.66028	-0.23049	0.00015
<b>29</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>30</b>	-0.27824	0.94791	0.03527	0.03566	-0.11245	0.09424	0.00280
<b>31</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>32</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>33</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>34</b>	-0.18967	0.67909	0.03905	0.11064	0.66028	-0.23049	0.00015
<b>35</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>36</b>	-0.22332	0.96330	0.03705	0.03879	-0.10344	0.09268	0.00290
<b>37</b>	-0.34784	-0.83512	-0.09831	0.27630	0.13995	0.27358	-0.03361
<b>38</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>39</b>	0.99709	0.05436	0.02340	0.02509	0.01683	0.03725	0.00108
<b>40</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>41</b>	-0.14617	-0.31356	0.42157	0.77743	-0.18044	-0.25605	0.00826
<b>42</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>43</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>44</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>45</b>	-0.18967	0.67909	0.03905	0.11064	0.66028	-0.23049	0.00015
<b>46</b>	-0.25748	0.86480	0.02698	0.00046	-0.38180	0.19828	0.00326

<b>*</b>	<b>Principal 1</b>	<b>Principal 2</b>	<b>Principal 3</b>	<b>Principal 4</b>	<b>Principal 5</b>	<b>Principal 6</b>	<b>Principal 7</b>
<b>47</b>	-0.14617	-0.31356	0.42157	0.77743	-0.18044	-0.25605	0.00826
<b>48</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>49</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>50</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>51</b>	-0.11481	-0.23171	-0.94449	0.19747	-0.00412	-0.04542	-0.00174
<b>52</b>	-0.14680	-0.31712	0.18816	-0.08054	0.36288	0.83903	-0.01853
<b>53</b>	-0.42369	-0.88194	-0.12527	0.08115	0.09876	0.10295	-0.00654
<b>54</b>	-0.40183	-0.83560	-0.31242	0.12033	0.10541	0.12955	0.01770
<b>55</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>56</b>	-0.32670	-0.68028	0.59082	-0.06388	-0.06055	-0.26395	-0.06321
<b>57</b>	-0.41721	-0.87052	0.00871	0.02431	0.14608	0.21423	-0.01516
<b>58</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>59</b>	-0.11481	-0.23171	-0.94449	0.19747	-0.00412	-0.04542	-0.00174
<b>60</b>	-0.33569	-0.70438	0.56498	-0.11215	0.13305	0.20171	-0.03146
<b>61</b>	-0.26057	-0.53355	0.36480	-0.65635	-0.00158	-0.27869	0.07664
<b>62</b>	0.99736	0.06034	0.01971	0.02658	0.00979	0.02097	0.00143
<b>63</b>	-0.39431	-0.82638	0.09346	0.15791	0.15712	0.29369	0.13038
<b>64</b>	-0.36229	-0.75009	0.40245	-0.27931	-0.02248	-0.25606	-0.00700
<b>65</b>	-0.11481	-0.23171	-0.94449	0.19747	-0.00412	-0.04542	-0.00174
<b>66</b>	-0.11481	-0.23171	-0.94449	0.19747	-0.00412	-0.04542	-0.00174

\*Compound numbers **1-66** present in the Table **2** in the main text.