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# Anti-Inflammatory and Analgesic Effects of *Trachyspermum ammi* Extracts: A Comparative Study of Aqueous and Ethanolic Extracts

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**SUMMARY.** ***Trachyspermum ammi*** **is one of the most used spices in Asian cuisines, due to its wide uses, it has studied on various grounds has been reported with multiple therapeutic effects. The study focuses on the evaluation of anti-inflammatory and analgesic pharmacological activities of the plant *T. ammi*. The seeds of the *T. ammi* commonly found with name of ajwain in local markets of Karachi, were bought; for evaluation of the anti-inflammatory and analgesic effects the collected seeds were subjected to aqueous and ethanolic plants extraction. The analgesic effects were inspected through tail flicking method while anti-inflammatory effects were evaluated through paw-edema test. The animals were divided in four different groups, (1) control group, (2) Standard group treated with 100 mg/kg of aspirin, (3) treated group, with aqueous extract of *T. ammi* (200 mg/kg), and (4) treated group, with ethanolic extract of *T. ammi* (200mg/kg). All the extracts were given through oral route. It has been observed through the study that both aqueous and ethanolic extract significantly showed increased the resistance in tail flicking in hot water and considerably reduced the carrageenan induced rat paw edema. The evaluated results suggest that both extracts (aqueous and ethanolic extracts) had shown positive effects on relieving pain and reduction in inflammation in treated animals corresponding to the control group. The results revealed that *T. ammi* do possess analgesic and anti-inflammatory properties and may be mediated through decreasing the synthesis of pain and inflammatory mediators like prostaglandins, bradykinins, histamine and serotonin.**

***RESUMEN***. *Trachyspermum ammi* es una de las especias más utilizadas en la cocina asiática, debido a sus amplios usos, se ha estudiado en varios campos y se ha informado de múltiples efectos terapéuticos. El estudio se centra en la evaluación de las actividades farmacológicas antiinflamatorias y analgésicas de la planta *T. ammi*. Se compraron las semillas de *T. ammi*, que se encuentran comúnmente con el nombre de ajwain en los mercados locales de Karachi; para la evaluación de los efectos antiinflamatorios y analgésicos, las semillas recolectadas se sometieron a extracción acuosa y etanólica de las plantas. Los efectos analgésicos se inspeccionaron a través del método de sacudidas de la cola, mientras que los efectos antiinflamatorios se evaluaron a través de la prueba del edema de la pata. Los animales se dividieron en cuatro grupos diferentes, (1) grupo de control, (2) grupo estándar tratado con 100 mg / kg de aspirina, (3) grupo tratado, con extracto acuoso de *T. amm*i (200 mg / kg), y (4) grupo tratado, con extracto etanólico de *T. ammi* (200 mg / kg). Todos los extractos se administraron por vía oral. Se ha observado a través del estudio que tanto el extracto acuoso como el etanólico mostraron un aumento significativo de la resistencia al movimiento de la cola en agua caliente y redujeron considerablemente el edema de la pata de la rata inducido por carragenina. Los resultados evaluados sugieren que ambos extractos (extractos acuoso y etanólico) habían mostrado efectos positivos en el alivio del dolor y la reducción de la inflamación en los animales tratados correspondientes al grupo de control. Los resultados revelaron que *T. ammi* posee propiedades analgésicas y antiinflamatorias y pueden mediarse a través de la disminución de la síntesis de mediadores del dolor y la inflamación como prostaglandinas, bradicininas, histamina y serotonina.

**KEYWORDS:** *Trachyspermum ammi,* Anti-inflammatory, analgesic, tail flicking method, and paw-edema test

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