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PENGARUH BUAH KURMA AJWA (*PHOENIX DACTYLIFERA L.*) TERHADAP KUANTITAS DAN KUALITAS OVUM

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Abstract

Background: Ajwa dates (Phoenix dactylifera L.) have great potential as a natural ingredient that has an effect on ovum quality and quantity. This fruit is rich in bioactive compounds such as phytoestrogens, flavonoids, and phenolics that function as antioxidants and have protective effects on female reproductive function. Objective: This study aims to evaluate the effect of Ajwa Date consumption on increasing ovum quantity and quality. The method used is a literature review by reviewing various relevant previous studies. The results show that consumption of Ajwa dates can increase reproductive hormones such as estrogen and progesterone, increase the number and quality of ovarian follicles, and delay the decline in ovarian reserve in perimenopausal women. In Conclusion, Ajwa dates have significant benefits in improving women's reproductive health and have the potential to be used as a natural supplement to support fertility.

Keywords*: Ajwa Dates, Phoenix Dactylifera L., Ovum Quality, Ovum Quantity, Phytoestrogens*

Abstrak

Latar Belakang: Kurma ajwa (Phoenix dactylifera L.) mempunyai potensi besar sebagai bahan alami yang berpengaruh terhadap kualitas dan kuantitas sel telur. Buah ini kaya akan senyawa bioaktif seperti fitoestrogen, flavonoid, dan fenolik yang berfungsi sebagai antioksidan dan memiliki efek perlindungan terhadap fungsi reproduksi wanita. Tujuan: Penelitian ini bertujuan untuk mengevaluasi pengaruh konsumsi Kurma Ajwa terhadap peningkatan kuantitas dan kualitas ovum. Metode yang digunakan adalah tinjauan pustaka dengan meninjau berbagai penelitian terdahulu yang relevan. Hasil penelitian menunjukkan bahwa konsumsi kurma ajwa dapat meningkatkan hormon reproduksi seperti estrogen dan progesteron, meningkatkan jumlah dan kualitas folikel ovarium, serta menunda penurunan cadangan ovarium pada wanita perimenopause. Kesimpulannya, kurma ajwa mempunyai manfaat yang signifikan dalam meningkatkan kesehatan reproduksi wanita dan berpotensi untuk dijadikan suplemen alami untuk menunjang kesuburan.

Kata Kunci : Kurma Ajwa, Phoenix Dactylifera L., Kualitas Ovum, Kuantitas Ovum, Fitoestrogen

INTRODUCTION

Ajwa dates (Phoenix dactylifera L.), often called "Prophet's Dates," are a significant commodity cultivated in arid regions such as Saudi Arabia and Egypt. These dates are well-known for their sweet taste and numerous health benefits. Rich in bioactive compounds such as phytoestrogens, flavonoids, and phenolics, Ajwa dates serve as potent antioxidants that help protect against oxidative stress and enhance reproductive health (Rahmani et al., 2014). Historically, they have been utilized in traditional medicine for improving fertility and supporting hormonal balance in women (Faradina, 2018).

Ovarian health is a crucial factor in female fertility, and the gradual decline in the quantity and quality of ovum significantly impacts reproductive capabilities. Oxidative stress has been identified as one of the major contributors to ovarian aging, leading to a decrease in ovarian reserves and the quality of oocytes (Mulyadi, 2022). Ajwa dates, with their antioxidant and anti-inflammatory properties, have been shown to counter oxidative stress, making them an effective natural intervention for supporting ovarian health (Otify et al., 2020).

Several studies have demonstrated that the phytoestrogens in Ajwa dates can mimic estrogen, binding to estrogen receptors and stimulating ovarian function. This leads to increased production of reproductive hormones such as estrogen and progesterone, which are essential for ovulation and maintaining healthy ovarian follicles (Herlambang et al., 2020). Additionally, regular consumption of Ajwa dates has been associated with improved Anti-Müllerian Hormone (AMH) levels, an important marker of ovarian reserve and fertility in women (Mulyadi, 2022).

In perimenopausal women, the consumption of Ajwa dates has shown promising results in delaying ovarian aging and reducing symptoms associated with hormonal decline. Research highlights their ability to maintain ovarian reserve, improve the size and function of ovarian follicles, and positively affect clinical symptoms such as mood and sleep disturbances (Sirajuddin et al., 2023). These benefits underscore the potential of Ajwa dates as a functional food for enhancing reproductive health and delaying menopause.

This literature review aims to evaluate the evidence supporting the benefits of Ajwa dates in improving ovum quality and quantity. By analyzing various studies, this review seeks to provide a comprehensive understanding of how Ajwa dates contribute to ovarian health, hormonal balance, and overall female fertility (Farah et al., 2024).

RESEARCH METHOD

This study employed a **literature review** method with a narrative review design. Secondary data was collected from journals, scientific articles, and books relevant to the effects of Ajwa Dates (Phoenix dactylifera L.) on ovum quantity and quality.

Data Collection: Data were obtained from databases such as Google Scholar, PubMed, and Elsevier using keywords like "Ajwa Dates," "*Phoenix dactylifera L.*," "Ovum," and "Reproduction."

Inclusion Criteria: References relevant to the effects of Ajwa Dates on female reproductive health, published between 2017 and 2022, were included.

Analysis: The literature was analyzed to identify the relationship between bioactive compounds in Ajwa Dates and reproductive parameters such as estrogen levels, progesterone levels, and ovarian follicle numbers.

RESULTS AND DISCUSSION

A. Results

This research is a literature review that collects data from various references related to the effect of Ajwa dates on ovum quality and quantity. Based on literature analysis, several important points were found:

Bioactive Content of Ajwa Date:

Ajwa dates are rich in bioactive compounds, such as phytoestrogens, flavonoids, polyphenols, and phenolic acids, which act as antioxidants. These compounds protect reproductive cells from oxidative stress and improve reproductive hormone function.

Effect on Reproductive Hormones:

Consumption of Ajwa dates significantly increases the levels of hormones such as estrogen and progesterone. These hormones are important for ovulation, oocyte maturation, and reproductive health.

Effects on Ovarian Follicles

Ajwa date extract increases the number and quality of ovarian follicles. Some studies have also shown an increase in antral follicle size and a decrease in the rate of ovarian reserve decline.

Improved Ovum Quantity and Quality

Ajwa dates are able to improve ovum quality through protection against free radical-induced DNA and membrane damage, while increasing ovum number through regulation of reproductive hormones.

Clinical Benefits

Consumption of Ajwa dates in perimenopausal women showed significant improvements in quality of life, including reducing vasomotor symptoms and increasing Anti-Müllerian hormone (AMH) levels.

B. Discussion

Ajwa Dates (*Phoenix dactylifera L.*), often referred to as "Prophet's Dates," are widely recognized for their nutritional and medicinal benefits, especially concerning female reproductive health. The bioactive compounds in Ajwa Dates, including phytoestrogens, flavonoids, and phenolic acids, have been extensively studied for their potential to enhance ovarian function, protect reproductive organs, and combat oxidative stress. This discussion explores these findings, linking the bioactive properties of Ajwa Dates to their effects on ovum quantity and quality.

Enhancing Reproductive Hormones

Research has shown that Ajwa Dates stimulate the production of reproductive hormones such as estrogen and progesterone. These hormones play critical roles in the ovulation process, follicular development, and overall ovarian health. Phytoestrogens in Ajwa Dates mimic the natural estrogen in the body by binding to estrogen receptors, leading to improved hormonal balance and enhanced ovarian activity (Herlambang et al., 2020). This hormone-regulating property is particularly beneficial for women experiencing hormonal imbalances, including those in perimenopause.

Protecting Ovarian Reserve

The decline in ovarian reserve is a natural consequence of aging and a significant factor in female infertility. Ajwa Dates have been demonstrated to preserve ovarian reserves by increasing Anti-Müllerian Hormone (AMH) levels, an important biomarker of ovarian reserve. This effect is attributed to the antioxidant properties of flavonoids and polyphenols in Ajwa Dates, which mitigate oxidative stress in ovarian tissues (Mulyadi, 2022). By preserving

ovarian reserves, Ajwa Dates can potentially delay menopause and extend a woman's reproductive lifespan.

Improving Ovum Quality and Follicular Development

The quality of ovum is directly linked to the health of ovarian follicles. Studies suggest that Ajwa Dates enhance both the quantity and size of ovarian follicles, which are critical for successful ovulation and fertilization (Sirajuddin et al., 2023). The flavonoids and phenolic compounds in Ajwa Dates protect follicles from oxidative damage, ensuring optimal ovum development. Furthermore, improved follicular health can lead to better implantation rates and reduced risks of early pregnancy loss.

Anti-inflammatory and Antioxidant Effects

Oxidative stress and inflammation are key contributors to ovarian aging and reduced ovum quality. Ajwa Dates combat these issues through their potent antioxidant and anti-inflammatory properties. The phenolic acids and flavonoids in the dates reduce the production of reactive oxygen species (ROS) and inflammatory cytokines, which can damage ovarian tissue and compromise fertility (Farah et al., 2024). This protective mechanism helps maintain the structural integrity of ovarian follicles and supports overall reproductive health.

Supporting Fertility in Perimenopausal Women

Perimenopausal women often experience a decline in ovarian function accompanied by symptoms such as mood swings, sleep disturbances, and irregular menstrual cycles. Ajwa Dates have been shown to alleviate these symptoms by improving hormonal balance and enhancing ovarian function (Sirajuddin et al., 2023). The bioactive compounds in Ajwa Dates support follicular health and hormone production, providing a natural and non-invasive way to manage perimenopausal symptoms and support fertility.

Potential Applications in Assisted Reproductive Technology (ART)

Given their ability to enhance ovum quality and preserve ovarian reserves, Ajwa Dates have significant potential in assisted reproductive technologies (ART) such as in vitro fertilization (IVF). Improved follicular health and hormonal balance resulting from Ajwa Date consumption can increase the success rates of ovarian stimulation and embryo implantation (Otify et al., 2020). Additionally, the antioxidant properties of Ajwa Dates may protect oocytes during cryopreservation and thawing processes.

Limitations and Recommendations

Although the findings from this literature review highlight the numerous benefits of Ajwa Dates, most studies are based on animal models or small-scale human trials. Larger, well-designed clinical studies are needed to confirm these findings and establish standardized guidelines for Ajwa Date consumption in enhancing female fertility. Future research should also explore the synergistic effects of Ajwa Dates with other natural or pharmacological interventions to optimize ovarian health and reproductive outcomes.

CONCLUSION

Ajwa Dates (*Phoenix dactylifera L*.) have significant potential in improving the quantity and quality of ovum due to their rich bioactive compounds, including phytoestrogens, flavonoids, and phenolic acids. These compounds act as antioxidants and anti-inflammatory agents, protecting ovarian tissues from oxidative stress and inflammation while enhancing overall reproductive health.

The consumption of Ajwa Dates has been shown to enhance reproductive hormone levels, particularly estrogen and progesterone, which are essential for ovulation and follicular health. Additionally, Ajwa Dates help preserve ovarian reserve by increasing Anti-Müllerian Hormone (AMH) levels, delaying ovarian aging, and extending reproductive lifespan. Improved ovum quality and follicular development further highlight their role as a natural intervention for fertility enhancement.

Ajwa Dates also support hormonal balance and alleviate perimenopausal symptoms, making them beneficial for women approaching menopause. These findings position Ajwa Dates as a functional food with potential applications in assisted reproductive technologies (ART). However, further clinical research is necessary to confirm these benefits and establish optimal consumption guidelines.

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