A majority of reproductive-age women experience myriad symptoms in the premenstrual phase, known as premenstrual syndrome (PMS). No single treatment, however, is universally recognized as effective, and many women turn to alternative approaches, including aromatherapy. From the perspective of autonomic nervous system function, a mind-body interaction, the present study investigated the soothing effects on PMS of aromatherapy using fragrance from yuzu (Citrus junos), a Japanese citrus fruit. The study also compared the effects of yuzu with that of lavender, considered a relaxing essential oil. Eighteen women with moderate premenstrual symptoms participated in a randomized cross-over study. Subjects were examined three times each in the follicular and late-luteal phases. Aromatic stimulation used included yuzu, lavender, and water as a control. This experiment measured heart rate variability reflecting autonomic function and the Profile of Mood States (POMS) as a psychological index before and after aromatic stimulation. A mere 10-min inhalation of yuzu scent significantly decreased heart rate and increased parasympathetic nervous system activity, regardless of menstrual phase. Additionally, POMS tests revealed that inhalation of the yuzu oil significantly decreased total mood disturbance, a global measure of affective state. Subscales of POMS-tension-anxiety, depression-dejection, anger-hostility, fatigue, and confusion-also decreased after the yuzu trial. The increase of parasympathetic nerve activity and the alleviation of emotional distress did not differ between the yuzu and lavender trials. The present study indicates that aromatherapy using the yuzu fragrance could offer a new modality to alleviate negative emotional stress accompanying PMS, which would contribute to the improvement of parasympathetic nervous system activity.