

SKRIPSI SARJANA FARMASI

**PENGEMBANGAN BASIS AMILUM DAN BASIS AGAR DALAM ORAL
DISINTEGRATING FILM (ODF) MELALUI OPTIMASI PENGGUNAAN
AIR SULING**



**FAKULTAS FARMASI UNIVERSITAS ANDALAS
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ABSTRACT

DEVELOPMENT OF STARCH AND AGAR BASED ORAL DISINTEGRATING FILM BASES THROUGH OPTIMIZATION OF DISTILLED WATER USAGE

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Oral disintegrating films (ODFs) are an innovative oral dosage form that continues to be developed due to their ease of administration, particularly for patients with swallowing difficulties. The use of natural polymers as ODF film-forming bases has attracted increasing interest because of their biocompatibility and environmentally friendly properties. This study aimed to formulate ODFs using 6% starch and 3% agar as film-forming bases and to optimize the formulations by varying the water volume (22 mL, 17 mL, 12 mL, and 7 mL) using the rolling method. The resulting ODFs were evaluated for homogeneity, pre-gel viscosity, pre-gel spreadability, pre-gel pH, weight, thickness, moisture content, swelling index, folding endurance, and disintegration time. The results demonstrated that the starch-based formulation with 12 mL of water and the agar-based formulation with 17 mL of water exhibited the most favorable physical characteristics and met the required evaluation criteria. The starch-based ODF formulated with 12 mL of water equally starch 8,5% produced a homogeneous film with a viscosity of $13,210.00 \pm 5.50$ cP, spreadability of 3.07 ± 0.09 cm, pre-gel pH of 7.17 ± 0.01 , weight of 0.021 ± 0.0001 g, thickness of 0.064 ± 0.0006 mm, moisture content of $7.21 \pm 0.50\%$, swelling index of $136.37 \pm 0.27\%$, folding endurance of 12.33 ± 1.15 folds, and a disintegration time of 17.89 ± 0.22 seconds. The agar-based ODF formulated with 17 mL of water equally agar 3% produced a homogeneous film with a viscosity of $8,184.00 \pm 7.00$ cP, spreadability of 3.63 ± 0.12 cm, pre-gel pH of 7.15 ± 0.02 , weight of 0.030 ± 0.0002 g, thickness of 0.094 ± 0.0009 mm, moisture content of $8.80 \pm 0.25\%$, swelling index of $132.41 \pm 0.36\%$, folding endurance of 25.00 ± 1.00 folds, and a disintegration time of 51.28 ± 0.38 seconds. The starch based and agar based formulations demonstrated potential as ODF bases and may be further developed as nutraceutical dosage forms.

Keywords : Oral Disintegrating Film, Starch, Agar, Rolling Method, Development