

ENVIRONMENTAL CASE STUDY 2

COMPACTION GRANULATION

Enquiry Stage

A prospective customer engaged Exwold to evaluate and scale an innovative, eco-friendly slow-release wetting agent for the home, garden, and amenity markets. Having completed encouraging initial trials at bench-top scale using household moulds, the prospective client presented two formulations combining a natural mineral base with heat-activated co-formulants. The prospective client sought a commercial partner to identify, optimise, and scale the ideal melt-granulation process to consistently achieve a 1 mm target granule size.

Process Development

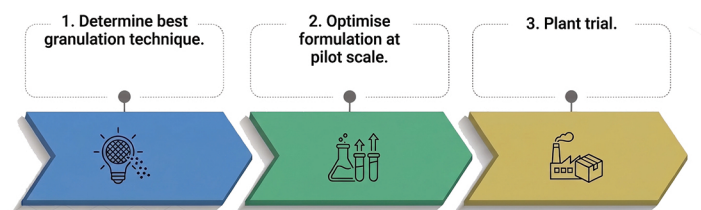
Initial technical evaluations focused on two potential granulation routes: radial extrusion and compaction. Exwold conducted lab-scale screening of both formulations across both technologies. Based on preliminary physical properties, the prospective client made minor formulation adjustments to align with target market performance requirements.

Exwold then executed 20–50 kg pilot-scale trials using both methods, providing test samples for the client's detailed analytical testing. Compaction was selected as the preferred process. Subsequent pilot runs were completed to lock in final product specifications and generate material for field/market evaluation.

Using insights from the pilot phase, Exwold identified the exact melting requirements for the co-formulant. Exwold's engineering team modified the plant to enable liquid co-formulant to be pumped directly into the feedstock preparation



mixer. Scale-up culminated in a successful 50 MT commercial production trial using an Alexanderwerk compactor.



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