Integrated production and transportation scheduling in the compound feed industry

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The compound feed industry is one out of many examples where the schedules for production and transportation are heavily intertwined. Based on customer requirements, the industry has been transitioning more and more from make-to-stock towards make-to-order production. The end-of-production silos have originally been designed to store large quantities of few different stock products, instead of small quantities of many different products that cannot be mixed. This means it is crucial that vehicles are available to deliver an order as soon as possible after production completed. Together with many practical complexities in the production, loading and delivery processes itself, this leads to a complex integrated optimization problem to be solved.