There are many challenges and opportunities in composting poultry litter removed from broiler houses. These include reducing operational costs and managing compost moisture, NH$_3$-N losses, and odours. This review paper reports on systems for composting broiler litter that require little or no amendment, while controlling N emissions. Poultry litter, as removed from broiler houses, has a moisture range of 22-50%, N content of 3-5.9%, and a carbon to nitrogen ratio of 9-12. Recommendations, based on field studies and economic analysis, have concluded that composting broiler litter is most economically done with little or no amendment and at starting moisture levels around 40% or less. Pilot and field studies using various composting methods, some of which employ continuous or intermittent aeration regimes as well as static windrows or piles, have been reported. Related studies based on composting un-amended caged layer manure are discussed along with their application to broiler litter. Results suggest the most applicable system for broiler litter for producing a low moisture, high N product would be an in-vessel system with forced aeration, mechanical turning, and a high NH$_3$ level (>160 ppm) in the ambient environment surrounding the compost. Such a system would not produce a mature compost, but would lead to a stabilised (10-18.6% dry matter loss), dry product (10-18% moisture), with high nitrogen content (12-15% total N loss) that could be marketed to nurserymen and gardeners, as well as general farmers.