A total of 320 pigs (DNA 241×600; initially 10.2 kg BW) were utilized in a 21-d experiment to determine the effects of corn fractionation and pelleting technique on nursery pig growth performance. There were 5 pigs per pen, 8 pens per treatment and 8 dietary treatments in a randomized complete block design. Treatments 1–3 contained 400 μm ground corn and were fed as either mash, pelleted using a steam conditioner plus traditional vertical ring die (steam pellet) or pellets with hot water plus a horizontal die (cold pellet). Treatments 4–6 contained corn ground to 400 μm with fines < 150 um removed and were fed as either mash, steam pellet or cold pellet. Treatments 7 and 8 contained ground corn with only fines < 150 um steam or cold pelleted prior to dietary inclusion without complete diet pelleting. Overall, pigs fed mash diets had improved (P < 0.05) ADG and d 21 BW compared to those fed steam pelleted diets with those fed cold pelleted diets being intermediate. There was no difference in G:F between pigs fed mash, steam pellet and cold pellet diets; however, pigs fed diets containing pelleted fines had decreased (P < 0.05) G:F due to an observed increased feed wastage and sorting. There was no difference in growth performance between pigs fed diets with fines removed or not. Cold pelleting was a viable option to steam pelleting in the current experiment; however, cold pelleting diets reduced pig performance compared to steam pelleting in the current experiment; however, cold pelleting diets reduced pig performance compared to steam pelleting. Overall, pigs fed ActiSaf tended towards greater ADG compared to control fed pigs regardless of environment (P = 0.09; 379 vs. 357 g/d, ActiSaf vs control, respectively). Final pen weights at d35 were greater in ActiSaf vs. control fed pigs (101 vs. 97 kg/pen; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05). Pigs reared in the dirty vs clean environment had reduced overall ADG (352 vs 384 g/d, respectively; P < 0.05).