To study the annual variation in the composition of nutrients relevant to pig and poultry feeding, monthly samples of starfish (Asterias Rubens) were taken in Denmark. The effect of different locations and starfish sizes was also assessed. Crude protein (CP) and phosphorus were high from February to May and lower thereafter. The AA profile remained constant and followed the same pattern as CP. An opposite pattern of CP was observed for both ash and calcium. Fat followed no clear annual pattern. Starfish within the smallest size group had the lowest fat and CP levels and the highest ash and calcium levels. The most profound differences between locations were observed in May. The seasonal pattern in chemical composition seemed related to spawning and gonadal developments. Large and medium sized starfish caught between February and May will be most suitable for pig and poultry feed.