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microbiota, but, at the same time, reduced the Shannon index ($p < .05$). The HI25 and HI50 fish also displayed a higher relative abundance of Actinobacteria (comprising chitin degrading bacteria) when compared to the other dietary treatments, as well as decreased Bacteroidetes (False Discovery Rate [FDR] < 0.05). Furthermore, *Actinomyces*, *Bacillus*, *Enterococcus*, *Staphylococcus* (recognized as chitinolytic genera), and *Oceanobacillus* resulted to be enriched in the posterior gut microbiota of the HI-fed fish (FDR < 0.05). Differently, dietary HI meal inclusion determined a reduction of *Campylobacter* and *Listeria* (common agents of food-borne diseases), as well as *Clostridium*, *Lactobacillus*, *Leuconostoc*, *Pediococcus*, unclassified members (U.m.) of Peptostreptococceae, *Weissella*, and *Vagococcus* and *Lactococcus* (whose distinct species are potential pathogens). In conclusion, dietary HI meal inclusion exerted a positive influence on the gut microbiota of rainbow trout, without compromising either growth performance or gut morphology.

O077

Rumen microbiota and growth performance in Aubrac and Maremmana steers reared in pasture and feedlot

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Maremmana (MA) and Aubrac (AU) are rustic cattle well suited for extensive beef production. Rumen microorganisms are the key players during the conversion of plant biomass in ruminants. The characterization of the rumen microbiota is pivotal for the development of feeding strategies to increase the sustainability of livestock production. The activity of rumen microbiota can be modulated by the diet, but several studies reported that the rumen microbiome composition can be influenced by host genetics. This evidence suggests the possibility of using breeding strategies to select rumen microbiomes with desirable traits, but data on rustic cattle breeds are scarce. In this study, the rumen microbiota of MA and AU steers reared in different systems (feedlot and grazing) was characterized and correlated to both the lipid composition of rumen liquor and growth performance.

Forty 4.5-month-old AU and MA steers were allotted into 2 experimental groups: grazing (10 animals for each breed) and feedlot (10 animals for each breed) and the average daily weight gain (ADG) was calculated. When the animals were slaughtered the

rumen contents were collected. The fatty acid (FA) profiles were characterized by GC-FID. The bacterial communities were characterized by high-throughput sequencing of 16S rRNA gene amplicons. All experiments in this study were performed in accordance with guidelines from the European directive 2010/63/UE and DL 4/03/2014 n 26.

Higher ADG was recorded for the AU steers, regardless of the rearing system. Stearic acid (C18:0) was the most abundant FA, with the lowest concentrations being observed in the rumens of grazing MA steers. The rumen bacterial communities were influenced by the rearing system but the main factor that shaped the communities was the breed. The genus *Succiniclasticum*, the genus *Fibrobacter* and the Rikenellaceae RC9 gut group were positively correlated to the growth performance in MA steers. In the rumen liquor collected from the AU steers the only bacterial group with a positive correlation to growth performance was *Succinivibrionaceae* UCG-002.

Our data suggest that, in both cattle breeds, and regardless of the bacterial groups involved, animal performance is influenced by pathways involved in short-chain FA production, and by the presence of H₂ sinks that provide an alternative to methanogenesis.

O078

Effect of salty or sweet food leftover-based diets on growth performance and digestibility in piglets

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In recent years, animal nutrition has received deep attention, especially for sustainability. Former Foodstuffs (FFPs) are foodstuffs which were manufactured for human consumption in full compliance with the EU food law, but which are no longer intended for human consumption for practical or logistical reasons and which do not present any health risks when used as feed. For this reason, biscuits, bread, chocolate bars, pasta, savory snacks and sweets, high in energy content in the form of sugar, starch, oil or fat can be considered an appealing alternative feed ingredients. Although FFPs composition, may vary to a large extent, they have been indicated as energy sources mainly. In this study, FFPs were divided into two main categories (sweet