

Pea Fibre Utilization in Ground Poultry, Beef and Pork

Pea fibre can be added to ground meat patties without affecting sensory attributes allowing for a nutritional fibre claim and cost reduction.

CONSUMERS ARE REQUESTING healthy versions of familiar products, but are still concerned about cost. Incorporating pea fibre into frozen ground meat patties can allow manufacturers to make a fibre nutrient content claim while reducing product cost. Previous research indicates that adding pea fibre can also aid in moisture retention and improve cooking yield. This study investigated the possibility of creating ground beef, pork and chicken patties with the addition of pea fibre while maintaining sensory acceptability. Cooking yield, colour, moisture retention and cost were also evaluated.

Different beef, pork and chicken recipes were created with the inclusion of three yellow pea fibre ingredients (Best Pea Fibre, Centara III and Uptake 80) at three different inclusion rates (2, 4 and 6%). All rates would allow for a Health Canada fibre nutrient claim. Spices were also added to the patties to mask any pea off flavours, but no additional binders or extenders were added. For the preliminary

study, patties, along with a “control” from each meat type, were scored by a sensory evaluation panel. Beef, pork and chicken patties with 2 and 4% fibre from Best Pea and Centara III and 2% fibre from Uptake 80 receiving a score of three or higher and was used for the second part of the study. Patties were then evaluated for specific sensory attributes (juiciness, tenderness, off-flavour) and for cooking yield, moisture loss and colour (lightness, redness and yellowness).

All ground beef patties (“control” and fibre added) showed no significant difference in juiciness, tenderness or off-flavour (see graph below). The addition of pea fibre at both levels increased cooking yield, however the results were inconclusive for moisture loss as only one recipe had reduction moisture loss (Centara III fibre at 4%). There was no significant difference in redness and yellowness, but patties with Best Pea Fibre at 2 and 4% and Centara III fibre at 4% had a significant difference in lightness.

All ground pork patties (control and fibre added) showed no significant difference in juiciness, tenderness or off flavour. All additions of pea fibre increased cooking yield with the exception of Centara III fibre at 2%. There was no significant difference in moisture loss for any of the patties. The addition of Centara III fibre at 2% had a significant effect on lightness and the station of Best Pea Fibre at 4% had a significant effect on redness.

All ground chicken patties showed no significant difference in off-flavour. However, patties with the addition of 4% fibre were rated as less juicy and patties with 4% of Centara III fibre were rated as less tender. The limited amount of water in the patties may have led to insufficient hydration of the fibre ingredients, thus accounting for the lower juiciness and tenderness ratings. There was no significant difference among cooking yield and moisture loss for any of the chicken patties, which may also be an effect of the limited amount of water. All patties with the exception of Centara III fibre at 2% had significantly different lightness. Best Pea Fibre at 4% also significantly affect redness and yellowness.

Based on the above results, adding 2 or 4% yellow pea fibre to frozen ground beef and pork patties does not have a detrimental effect on sensory or cooking properties while still allowing for a Health Canada fibre nutrient claim. The same was determined for ground chicken patties as well, except only at the 2% pea fibre level. Depending on the amount and type of fibre used, including fibre reduced the cost of the meat patties anywhere from 1–15%.

The addition of pea fibre in ground beef and pork patties has many benefits for both manufacturers and consumers. Cooking yield and fibre content are increased and cost of production is lowered. For chicken patties, fibre content is increased and production cost is lowered. Manufacturers can use the fibre claim to promote the patty as a value-added product. ▶

