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# Roasting Research: Key Learnings & Recommendations

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## Summary of Studies:

### 1. Quantitative Consumer Research

National Ipsos Reid phone survey with approx 1000 consumers

### 2. Culinary Research

Lacombe Agriculture Agri-Food Lab, Oven and Premium Oven Roasts:

- Roasting End Point Temperature – the influence of roast weight and endpoint temperature on objective and subjective quality
- Roasting Time/Temperature -- the influence of searing time and temperature and roasting temperature on beef palatability

### 3. Qualitative Consumer Research

In-home cooking trials of roasting recommendations with approx. 30 Toronto consumers with focus group follow-up

## Key Learnings/Recommendations:

### 1. A need for a Roasting Revival

Consumer barriers to roasting were largely:

- just forgetting about roasting
- an impression that roasting is difficult and involves extra work
- roasts were felt to be too big for smaller families – the need for smaller cuts to suit smaller families. Roast shape is an important factor in the performance of small-sized roasts.

**Younger cooks need to build confidence in roasting so they begin to build roasting into their cooking repertoire.**

### 2. Consumer research findings drove home the need to simplify the oven roast category. There is confusion around cut knowledge.

- Consumers don't have a good understanding of the differences between roasts with 65% of consumers not recognizing the difference between Pot Roasting and Oven Roasting.
- Consumers aged 25 to 34 showing the lowest knowledge levels.
- Culinary research findings showed no detriment to cooking Premium Oven Roasts with the same method as Oven Roasts.

### 3. Need to promote Lower Temperature Roasting.

- Since roasting was clearly seen as weekend or special occasion meal, minimized-cooking time was not a critical factor in preparation and shouldn't be the driving force behind Oven Roast cooking recommendations.
  - Ideally, a roasting method should maximize the time a roasts internal temperature is held in the optimum connective tissue tenderizing zone of 125°F to 140°F. To achieve this, these treatments were investigated:
    - cooking at constant 275°F vs 325°F
    - cooking using a minimal temperature/time oven-sear step combined with a low temperature roasting method (oven-sear at 450°F for 10 minutes + oven-roast at a constant 275°F).
  - Roasting at a constant temperature of 275°F produced higher browning scores, most even cooking, most tender juicy meat with the least amount of shrink.
  - Lower temperature roasting showed the greatest benefit with smaller roasts and tougher cuts.
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#### **4. Include an Oven-Sear Step with roasting.**

- Culinary research results did not indicate that an oven-sear step had any quality benefits, not even for colour or flavour. The only advantage from a culinary perspective was a reduction in total cooking time (approx. 15% less cooking time).
- However, consumer research found that consumers wanted an oven-sear step as part of the roasting process. Consumer benefits of oven-searing:
  - a. Romance of oven-sear: these words appealed to them
  - b. Involvement in the cooking process
  - c. Immediate gratification (smell, sound, visual) – immediate assurance that something great was going to happen
  - d. They were comfortable with a 2 step roasting process. It was fairly common practice for consumers to use a 2 stage cook (34% of consumers use 2 temperatures when roasting while 54% roasted at a constant temperature. An oven temperature of 350°F or higher was used by 46% of consumers).
  - e. Cooking at a constant low temperature of 275°F made them a bit un-easy – it was foreign to them and shook their confidence.
  - f. Consumers did not perceive the quality benefits with roasting at constant 275°F vs adding the oven-sear step. Since many consumers enjoyed their roasts cooked to well-done, the evenness of cook benefit was not noticeable.
  - g. Most thought oven-searing promoted browning (though the Culinary Research results proved otherwise).
- No one objected/commented that there was too much time involved in waiting for the oven to get up to the oven-sear temperature (450°F). This waiting time (approx 15 minutes), was not a deterrent and was not even factored into their perceived total time for roasting.
- Consumer interest/openness to doing a stove-top sear was minimal – seen as a messy involved step.
- An oven-sear temperature of 500°F was not practical since home ovens had difficulty even maintaining this high a temperature.

**Reducing the oven-sear time and temperature offered the best compromise of achieving the quality benefits of slow roasting combined with desire of the consumer to oven-sear.**

#### **5. Eliminate a 'best doneness' recommendation. Cook to 'desired doneness'**

- Consumers were firmly entrenched in their doneness preferences, motivated by emotional issues rather than perceived quality or food safety issues.
- Consumer preference for doneness was grouped around medium (61% prefer Med-rare to Medium, with 33% Med-rare).
- Stronger preference for Rare in Quebec (62% prefer Rare to Med-rare).
- Preference for Rare to Med-rare increased with age and education.
- Sensory research results indicated that there was no definitive "best doneness". Flavour and browning was more pronounced with more well-done meat while tenderness and juiciness declined – there was a saw-off among perceived quality attributes.

#### **6. Modifications to Estimated Cooking Time chart:**

- Combine Well-done and Medium doneness columns. It was difficult to get a thermometer to measure the temperature of Well-done (170°F) – the thermometer temperature stopped climbing around 165°F. Therefore, it isn't practical to ask consumers to cook to 170°F.
  - List roast sizes by both kg and lb – in separate columns.

Consumers operate by both and if the two are in a combined column (500g/1 lb), it opens up too much opportunity for error
  - Stress that Cooking Times are guidelines. These timelines are just guidelines as to when to put the roast in the oven not as a measure of doneness. Roast type (11 different cuts + animal variation), roast depth, roast shape, starting temperature of raw roast and oven variability – all impact the time it will take to roast. Wide variations in cooking time. However, consumers still want a time estimate chart.
  - Total estimate cook times given instead of min/lb estimates. Consumers struggle to do the math with time/wt guidelines with too much room for calculation error. Time/wt estimates also give the impression of accuracy.
  - Estimated Cook Time ranges were broadened to 1/2 hour increments, with the disclaimer that roasts can be done earlier or later by 30 minutes. The guidelines can be variable, so there is a need to emphasize that this is not a 'doneness formula' but a guideline for when to put the roast in the oven.
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## **7. Emphasize the difference between Pot Roasting and Oven Roasting for restaurant-style roast beef experience.**

- Since 47% consumers covered their roasts and 55% cooked them with liquid, there is a need to emphasize 'no cover' and 'no liquid' in the pan to achieve restaurant-style roasting.
- Culinary research indicated no water was necessary in the pan – there was no smoking in oven and no culinary benefit.

## **8. Allow for post-oven internal temperature rise.**

- Roasting at a constant 275°F did not result in a guaranteed climb in internal temperature when roasts were removed from oven in the lab tests. However, trials indicated that there was a temperature rise of 2°F to 5°F when an oven-sear step was added to the method.

## **9. Include a Tenderness Rating.**

- Consumers valued having a comparison of tenderness across the different roast cuts.
- The Tenderness Rating can be used to encourage consumers to roast at a constant 275°F since less tender cuts (and small roasts) had the greatest benefit with the constant temperature slow-roast method.

## **10. Promote the use of thermometers.**

- Thermometers are not fool-proof, but are the best way to know when roasts are done – more reliable than “min/lb” guidelines, looking at meat/meat juice colour and less damaging than cutting into roasts.
- Thermometers with cable monitors add tremendous convenience to roasting.
- Younger consumers were most interested in using thermometers and indications were, that once thermometers were test-driven, they were appreciated.

## **11. Include a Standing Time after roasting.**

- Emphasize that making a roast is not the same as serving pasta – there is lots of time to work your meal around a roast. Roasts are 'forgiving' that way. You don't need to serve roast piping hot. That is part of their 'convenience'.
- Roast standing time helps juices to redistribute and settle so that they do not spill out with carving.

## **12. Recommend a thin slice for carving vs a thick slice**

- Thin slices work best across all roast cuts to produce the most tender roast eating experience.
- Thin slices work better with the new 75 g Canada Food Guide serving size, making this serving size seem more generous.

## **13. Other interests/concerns/notes:**

- Consumers found that making gravy was a bit of a mystery – roast instructions should be paired with gravy making instructions.
  - Consumers were concerned about a lack of drippings in the pan after slow-roasting. They need re-assurance that this is a good thing since the roast will be juicier.
  - Roasting guidelines use a conversion of 275°F=140°C (not 135°C). Culinary research tested 135°C ovens – a more direct conversion for 275°F, however, practical application steers us to use 140°C since oven dials are not typically calibrated to 135°C.
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