

| 課題名 | 20 ビール大麦の品質向上 裂皮粒や凸腹粒発生要因の解明 | | | | 分類 | ② | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------------|-----------|----|-----|---------|----|-----|-----------|--|--|--|---------|--|--|--|-------|--|--|--|-------|--|--|--|----|----|----|-----|----|----|----|-----|----------|---|---|---|---|---|---|---|---|----------|---|---|----|---|---|---|---|---|---------|---|---|----|---|---|---|---|---|-------|---|---|----|---|---|---|---|---|--------|---|---|----|----|---|---|---|---|-------|---|---|---|---|----|----|----|---|-------|---|---|---|---|----|----|----|---|-------|---|---|----|---|---|---|---|---|----|---|---|----|---|---|---|---|---|
| | 試験研究年次 | 62～1年(終了) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I 目的 ビール大麦の品質低下要因である裂皮粒(内外穎の境目が開く)や、凸腹粒(縦溝が開く)の発生要因を解明する。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II 試験方法 裂皮粒や凸腹粒の発生実態を調査し、栽培・環境条件との関係を検討し、子実の形態的な面からの考察をする。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| III 主要成果の概要 <ol style="list-style-type: none"> 1 裂皮粒や凸腹粒の発生には品種間差がある(第1表)。 2 早播で裂皮粒が多発し、成熟期頃の降雨で凸腹粒が発生する(第2表)。 3 施肥量の多少、踏圧回数は裂皮粒や凸腹粒の発生には影響しない(第2表)。 4 出穂前の過湿としゃ光、過湿と低温で裂皮粒が多発した(第3表)。 5 内外穎の長さや幅は出穂前の短期間に急伸するので、この時期の過湿、低温日照不足などの不良条件が裂皮粒を発生させる。早播で多発するのはこの時期の不良環境にあいやすいたためであろう。 6 裂皮粒防止には早播を避け、凸腹粒防止には成熟後すみやかに収穫し、降雨にあわせないことである。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IV 主要成果の具体的データ <p style="text-align: center;">第1表 主要なビール大麦8品種の被害粒の発生程度</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">品種名</th> <th colspan="4">側面裂皮粒率(%)</th> <th colspan="4">凸腹粒率(%)</th> </tr> <tr> <th colspan="4">-----</th> <th colspan="4">-----</th> </tr> <tr> <th>59</th> <th>60</th> <th>61</th> <th>62年</th> <th>59</th> <th>60</th> <th>61</th> <th>62年</th> </tr> </thead> <tbody> <tr> <td>ミサトゴールデン</td> <td>0</td> <td>5</td> <td>1</td> <td>0</td> <td>7</td> <td>4</td> <td>0</td> <td>1</td> </tr> <tr> <td>ミカモゴールデン</td> <td>3</td> <td>2</td> <td>11</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>ニシノゴールド</td> <td>9</td> <td>8</td> <td>30</td> <td>6</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>さつきばれ</td> <td>3</td> <td>2</td> <td>21</td> <td>6</td> <td>2</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>にらさき二条</td> <td>9</td> <td>3</td> <td>33</td> <td>11</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> </tr> <tr> <td>きぬゆたか</td> <td>0</td> <td>1</td> <td>2</td> <td>0</td> <td>26</td> <td>11</td> <td>29</td> <td>4</td> </tr> <tr> <td>あまぎ二条</td> <td>0</td> <td>0</td> <td>3</td> <td>0</td> <td>27</td> <td>16</td> <td>12</td> <td>2</td> </tr> <tr> <td>はるな二条</td> <td>5</td> <td>3</td> <td>12</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>平均</td> <td>4</td> <td>3</td> <td>14</td> <td>3</td> <td>8</td> <td>4</td> <td>5</td> <td>1</td> </tr> </tbody> </table> <p>注) 昭和59～62年度ビール大麦合同比較試験供試材料を用いた。</p> | | | | | | | 品種名 | 側面裂皮粒率(%) | | | | 凸腹粒率(%) | | | | ----- | | | | ----- | | | | 59 | 60 | 61 | 62年 | 59 | 60 | 61 | 62年 | ミサトゴールデン | 0 | 5 | 1 | 0 | 7 | 4 | 0 | 1 | ミカモゴールデン | 3 | 2 | 11 | 2 | 0 | 0 | 0 | 1 | ニシノゴールド | 9 | 8 | 30 | 6 | 0 | 0 | 0 | 0 | さつきばれ | 3 | 2 | 21 | 6 | 2 | 0 | 1 | 0 | にらさき二条 | 9 | 3 | 33 | 11 | 0 | 0 | 0 | 2 | きぬゆたか | 0 | 1 | 2 | 0 | 26 | 11 | 29 | 4 | あまぎ二条 | 0 | 0 | 3 | 0 | 27 | 16 | 12 | 2 | はるな二条 | 5 | 3 | 12 | 2 | 0 | 0 | 0 | 1 | 平均 | 4 | 3 | 14 | 3 | 8 | 4 | 5 | 1 |
| 品種名 | 側面裂皮粒率(%) | | | | 凸腹粒率(%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | 59 | 60 | 61 | 62年 | 59 | 60 | 61 | 62年 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ミサトゴールデン | 0 | 5 | 1 | 0 | 7 | 4 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ミカモゴールデン | 3 | 2 | 11 | 2 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ニシノゴールド | 9 | 8 | 30 | 6 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| さつきばれ | 3 | 2 | 21 | 6 | 2 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| にらさき二条 | 9 | 3 | 33 | 11 | 0 | 0 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| きぬゆたか | 0 | 1 | 2 | 0 | 26 | 11 | 29 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| あまぎ二条 | 0 | 0 | 3 | 0 | 27 | 16 | 12 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| はるな二条 | 5 | 3 | 12 | 2 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 平均 | 4 | 3 | 14 | 3 | 8 | 4 | 5 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

第2表 播種期、施肥量及び踏圧と被害粒率*

| 品種名 | 番号** (処理) | 出穂期 月日 | 側面裂皮粒率 (61年度) % | 凸腹粒率 (61年度) % |
|-------------|--------------|-----------|-----------------------|---------------------|
| ニシノ ゴールド | 1 (早播) | 4.05 | 18.5 (24.5) | 0 (0.3) |
| | 2 (標準) | 4.16 | 3.5 (13.8) | 0 (2.7) |
| | 3 (踏圧) | 4.16 | 2.5 (13.6) | 0 (1.7) |
| | 4 (多肥) | 4.17 | 1.0 (10.5) | 0 (1.3) |
| | 5 (晩播)*** | 4.20 | 0 (3.4) | 8.0 (1.0) |
| あまぎ | 1 | 4.06 | 0 | 4.0 |
| 二条 | 2 | 4.17 | 1.0 (1.0) | 5.0 (14.3) |
| | 3 | 4.17 | 0 | 3.5 |
| | 4 | 4.17 | 0 | 3.5 |
| | 5*** | 4.27 | 0 | 30.0 |
| | 吉系16 | 1 | 4.04 | 56.0 |
| 3 | | 4.16 | 30.0 | 0 |
| 5*** | | 4.20 | 22.0 | 1.0 |

- 注) ① * 粒率は61年度の側面裂皮粒率が脱穀前、その他(62年度)は脱穀後に調査した。
 ② ** 播種期(月.日)は番号1:11.08~10、2~4:11.19~20、5:12.01~05 で、2:普通の標準区(踏圧1~2回、窒素施用量9kg/10a)に対し、3:踏圧5回、4:窒素施用量11kg/10aと栽培法を変えた。
 ③ *** 降雨(6月1~3日)後に収穫した。

第3表 過湿及びしゃ光が側面裂皮粒の発生に及ぼす影響

| 処理 | 吉系16 | ニシノゴールド |
|---|------|---------|
| 節間伸長期(3月5日)~出穂期(4月16日)の過湿 | 53.4 | 2.8 |
| 自然状態 | 55.0 | 5.3 |
| 節間伸長期(3月5日)~出穂期(4月16日)の過湿と 出穂期3週間前~出穂期のしゃ光処理 | 99.5 | 23.8 |
| 出穂期3週間前~出穂期のしゃ光処理 | 48.7 | 2.2 |
| 節間伸長期(3月5日)~出穂期1週間前(4月16日) の過湿と出穂期4週間前~1週間前の低温 | 91.0 | - |
| 出穂期4週間前~1週間前の低温 | 77.5 | - |

注) 昭和62年度の結果。値は粒率

V 成果の評価と取扱上の留意点 普及指導上の参考とする

VI 今後の研究上の問題点 裂皮粒や凸腹粒の発生が少ない品種の育成

VII 資料名 農業及び園芸 第64巻(1989):395-402.