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Comments on the "Consolidated Report of PhilRice and IRRI's GR2E rice application for direct use as food and feed, or for processing"

Summary

The Consolidated Report represents comments from various government agencies on the application of genetically modified (GM) GR2E Golden rice for direct use as food and feed, or for processing. Its assessment is positive towards the food and feed safety of GM GR2E Golden rice. However, the supporting information (GR2E-FFP-supporting-dossier-PH) and supporting studies (GR2E-FFP-submitted-study-reports-PH) show deficiencies in the data provided for the risk assessment. These deficiencies cast doubt on the assessment, and the safety of GR2E for food and feed. In summary, these deficiencies are:

1) **The analysis of the open reading frames in the molecular data is insufficient.** The insertion of the DNA has caused open reading frames (ORFs) to be created[1]. It is vital to determine whether these ORFs are transcribed to the RNA level and, if so, what are the implications of this transcription. Only bioinformatic searches are provided and these are insufficient to fully assess the implications of these ORFs (and hence food safety).

2) **The composition data is of insufficient quality.**
   a. **The experimental design of the field trials is insufficient for the required statistical power.** There is a lack of non GM commercial varieties included in the field trials and the number of replicates in each are only 3, in comparison to the recommended four replicates by EFSA[2].

   b. The summary (GR2E-FFP-supporting-dossier-PH) of significant differences in compositional data examined by the agencies (Table 29) in assessing the food safety of Golden Rice is a **gross oversimplification of the, possibly important, differences seen in the**

[1] An open reading frame (ORF) is defined as any nucleotide sequence that consists of a string of codons that is uninterrupted by the presence of a stop codon in the same reading frame (EFSA, 2011. EFSA Journal 9, 2150.). These have the ability to be transcribed to RNA and translated into a protein. In GM crops, ORFs have the potential to produce unintended RNA, which may interfere with cellular regulatory functions, or to produce and unintended novel or altered protein. As allergens are proteins, such ORFs are a concern for food safety and require robust evaluation.

[2] EFSA, 2011. Guidance for risk assessment of food and feed from genetically modified plants. Panel on genetically modified organisms. EFSA Journal 9, 2150.

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nutritional composition between individual sites and for individual years, notably for the levels of numerous fatty acids.

Data are pooled across 4 different sites for each of the two years and then amalgamated so only one significant difference remains (steric acid). However, **the number of significant differences between GM GR2E Golden rice and the comparator increases considerably when the pooled data for each year are examined and increase still more for individual sites. Further investigation is needed to determine the underlying cause(s) of the significant differences, particularly for fatty acids.**

c. **The uptake of potentially toxic elements (e.g. lead, cadmium, arsenic) have not been assessed**, despite rice being well known for taking up these elements.

d. **Levels of intermediate compounds in the engineered pathway to carotenoids have not been assessed**. The engineered metabolic pathway to produce beta carotene (and other carotenoids) contains intermediary compounds and it's important to determine whether there is any risk associated with any intake of intermediary compounds in this GM rice.

3) **There is no GM rice grown commercially anywhere in the world. Despite this, GM contamination of rice has occurred. Therefore, GM rice contamination is possible even without commercial growing.** Experience with GM rice in the USA and China shows that GM contamination of rice can occur without any commercial cultivation. There are substantial chances of unintended release or planting of the regulated article. Therefore, it is essential that:
   a. A monitoring plan is employed to detect any unauthorised planting or entry into the food system, including rice exports;
   b. A contingency plan is employed in case of any GM contamination incidents;
   c. There are clear rules of liability and compensation should a GM contamination incident occur with GM Golden rice.

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Detail of deficiencies in the data submitted to the assessment of the safety of GM GR2E Golden rice for direct use as food and feed, or for processing"

1) **It has not been determined whether the two open reading frames (ORF)s, created by the insertion of DBA are active.**

The Consolidated Report (STRP assessment 'Inserted DNA') states that "*the STRP confirmed that based on nucleotide sequencing of the inserted DNA and the flanking regions in the DNA of GR2E rice, it was shown that there were deletions of 15 base pairs (bp) in the rice DNA, in addition to truncations in the left and right borders of the insert of 11 bp and 23 bp, respectively. It was reported that bioinformatics analyses were conducted to evaluate any open reading frames (ORFs) created as a consequence of the T-DNA insertion to assess their potential to encode amino acid sequences with significant similarity to known toxins or allergens. It was found out that no new novel ORFs were created as a consequence of the DNA insertion that would have the potential to encode proteins with any significant amino acid sequence similarity to known or suspected toxins or allergens.*"

Further information on the ORFs is from the Supporting Information (pg. 38, Section 4.7. Nucleotide Sequence Analysis of the Inserted DNA and Flanking Regions): "*The inserted T-DNA in GR2E rice was found to have a 23 bp deletion on the right border (RB) end and a 11 bp deletion on the left border (LB) end" and "Two ORFs were identified, one in the reverse (complementary) orientation that spanned the 5' T-DNA insert—genomic DNA border (Figure 10, ORF-1, 207 bp, 68 amino acids), and one in the forward orientation that spanned the 3' T-DNA insert—genomic DNA border (Figure 10, ORF-2, 240 bp, 79 amino acids)*".

It is evident that the insertion of the plasmid containing the GR cassettes caused deletions of the flanking DNA which have resulted in the formation of two open reading frames (ORF)s. These could potentially be transcribed into RNA and, further, translated into amino acid sequences. The applicant has performed a bioinformatics search to ensure that the ORFs do not result in any amino acids with significant homology with any known toxins or allergens. However, this is insufficient to ensure food and food safety. If transcribed to the RNA level, it is plausible that these ORFs show similarity with regulatory forms of RNA. They could, for example show similarity to primary miRNAs, potentially encoding peptides[3] or to long non-coding RNAs[4]. If so, it's possible they could give rise to unexpected and unpredictable effects. **Bioinformatic searches are insufficient to fully assess the implications of these ORFs (and hence food safety). It is vital to determine whether these ORFs are**

[3] See, e.g. Lauressergues, D., Couzigou, J.M., Clemente, H.S., Martinez, Y., Dunand, C., Bécard, G. & Combier, J.P. (2015) Primary transcripts of microRNAs encode regulatory peptides. Nature 520: 90-93.
[4] See, e.g. Dhanoa, J.K., Sethi, R.S., Verma, R., Arora, J.S. & Mukhopadhyay, C.S. (2018) Long non-coding RNA: its evolutionary relics and biological implications in mammals: a review. Journal of Animal Science and Technology 60: 25.

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transcribed to the RNA level and, if so, what are the implications of this transcription.

2) Composition analysis is of insufficient quality.

a) Experimental design is insufficient

- The objective of compositional analysis is to determine whether there are differences between the GM plant, a non-GM comparator and commercial varieties. No non-GM reference varieties have not been included in these experiments. In contrast, in the EU, the European Food Safety Authority (EFSA) recommend that 3 non-GM reference varieties should also be included in each trial, with six varieties overall[5].
- The experimental design used in the field trials for compositional analysis does not allow for enough statistical power to make conclusions on food safety. For each of the 2 individual years, 3 replicates are used in each of 4 sites, using a single comparator. However, EFSA recommend a minimum of 4 replicates, on at least 8 sites[6].

b) Data are pooled across four experimental sites and summarised for 2 individual years

The data presented in the main sections of the two compositional analysis studies (for 2015 and 2016)[7] have been pooled across 4 different sites. This could mask any real differences between Golden rice and its conventional counterpart(s) by giving a large range of values for each parameter. Data for the individual sites are presented, but only in the Appendices and are not commented on in the submission. However, **the number of significant differences between Golden rice and the comparator increases considerably if the single sites data are examined**.

In the pooled data for 2015, significant differences are seen for crude fibre, the fatty acids myristic, palmitic, stearic, linoleic, a-linolenic, arachidic, eicosenoic and behenic acid, and for niacin (vitamin B3) (Table 13 for 2015, below). The fatty acids are particularly striking, with 8 out the 11 fatty acids analysed showing significant differences.

When the individual sites for 2015 are examined, further significant differences are seen (excepting moisture content), for calcium, acid detergent fibre (ADF) at 3 sites;

[5] EFSA, 2011. Guidance for risk assessment of food and feed from genetically modified plants. Panel on genetically modified organisms. EFSA Journal 9, 2150.
[6] EFSA, 2011. Guidance for risk assessment of food and feed from genetically modified plants. Panel on genetically modified organisms. EFSA Journal 9, 2150.
[7] IR2015-07001: Nutrient Composition 2015 and IR2016-05001: Nutrient Composition 2016 in the document entitled "Studies Submitted in Support of the Food Safety Assessment of Provitamin A Biofortified GR2E Rice" (GR2E-FFP-submitted-study-reports-PH).

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carbohydrate (CHO), neutral detergent fibre (NDF), amylose and tryptophan (see Appendix).

In the pooled data for 2016, differences are seen for the fatty acids stearic, arachidic, behenic and lignoceric (Table 13 for 2016, below). That is 4 out of the 11 fatty acids analysed for show significant differences.

When the individual sites for 2016 are examined, further significant differences are seen (excepting moisture content), for crude fat (2 sites), carbohydrate, crude fibre (2 sites), ash, dietary fibre, calcium, acid detergent fibre (ADF), starch, neutral detergent fibre (NDF), zinc, glycine (2 sites), arginine, histidine, threonine, folic acid (2 sites), naicin (vitamin B), trypsin inhibitor and the additional fatty acids: palmitic, myristic, linoleic, eicosenoic (see Appendix).

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Table 13 from IR2015-07001: Nutrient Composition 2015 in "Studies Submitted in Support of the Food Safety Assessment of Provitamin A Biofortified GR2E Rice (GR2E-FFP-submitted-study-reports-PH)" summarising statistical differences found within data pooled from different sites for 2015.

for GR2E and control PSB Rc82 rice

Analytical Component (units)	Event GR2E Mean[†]	PSB Rc82 Control Mean	Mean Difference (% of control)	Significance (p-Value)	Combined Literature Range
Grain Proximates (% dry weight)					
Crude Fibre	12.39	11.21	10.5%	0.0497	8.6–18.13
Grain Fatty Acids (% total fatty acids)					
Myristic (C14:0)	0.48	0.42	13.8%	0.0032	0.32–1.1
Palmitic (C16:0)	19.54	18.47	5.8%	0.0019	14.9–31.2
Stearic (C18:0)	2.17	2.06	5.4%	0.0408	1.5–2.8
Linoleic (C18:2)	33.73	34.53	–2.3%	0.0022	26.1–39.0
α-Linolenic (C18:3)	1.41	1.35	4.5%	0.0012	0.9–1.6
Arachidic (C20:0)	0.86	0.88	–2.5%	0.0266	0.4–0.79
Eicosenoic (C20:1)	0.50	0.53	–4.9%	0.0352	0.4–0.6
Behenic (C22:0)	0.54	0.57	–5.2%	0.0336	0.2–0.82
Grain Vitamins (mg/kg dry weight)					
β-Carotene	1.15	<LOQ[a]			
Niacin (vitamin B3)	28.09	24.24	15.9%	0.0421	34–65

[†] Values represent the least square mean of three replicate samples collected from each of four locations in the Philippines where event GR2E and control PSB Rc82 rice was grown during the rainy season in 2015 (n=12 for each entry).
[a] LOQ = Limit of quantification, which for β-carotene was 0.05 mg/kg dry weight.

Table 13 from IR2016-05001: Nutrient Composition 2016 in "Studies Submitted in Support of the Food Safety Assessment of Provitamin A Biofortified GR2E Rice (GR2E-FFP-submitted-study-reports-PH)" summarising statistical differences found within data pooled from different sites for 2016.

Table 13. Summary of statistically significant differences observed in the combined-site analysis of compositional parameters measured for GR2E and control PSB Rc82 rice

Analytical Component (units)	Event GR2E Mean[†]	PSB Rc82 Control Mean	Mean Difference (% of control)	Significance (p-Value)	Combined Literature Range
Grain Fatty Acids (% total fatty acids)					
Stearic (C18:0)	2.32	2.16	7.5%	0.0122	1.5–2.8
Arachidic (C20:0)	0.868	0.896	–3.1%	0.0494	0.4–0.79
Behenic (C22:0)	0.473	0.512	–7.7%	0.0205	0.2–0.82
Lignoceric (C24:0)	0.809	0.885	–8.6%	0.0272	0.4–1.34
Grain Vitamins (mg/kg dry weight)					
β-Carotene	1.37	<LOQ[a]			

[†] Values represent the least square mean of three replicate samples collected from each of four locations in the Philippines where event GR2E and control PSB Rc82 rice were grown during the dry season in 2016 (n=12 for each entry).
[a] LOQ = Limit of quantification, which for β-carotene was 0.05 mg/kg dry weight.

Neither the significant differences for individual sites in each year, nor the significant differences reported in the pooled data for each year are reported in the Supporting Information for the Risk Analysis Report for a Genetically Modified Plant for Direct use as Food, Feed, or Processing (GR2E-FFP-supporting-dossier-PH, Table 29). Instead, only stearic acid is listed as being consistently significantly different in the Supporting Information. This is because the statistical treatment of the data from

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across sites and across years has masked these differences. Thus, the lack of reportage of statistical significances in the summary table is an artefact of treatment of the data and masks the many significant differences seen both between individual sites and in individual year.

In the Consolidated report, the following statements by the agencies are drawn only from the summary table in the Supporting Information (GR2E-FFP-supporting-dossier-PH, Table 29). Therefore, they do not consider the many significant differences seen both between individual sites and in individual years.

STRP Assessment

On the other hand, comparison of proximates and fibre in grain (paddy) samples derived from GR2E and control PSB Rc82 rice grown during the rainy season resulted in ***no statistically significant differences in ash, crude fat, crude protein, carbohydrate, amylose, moisture, acid detergent fiber (ADF), neutral detergent fiber (NDF), and total dietary fiber (TDF)****. Although there was a statistically significant difference in the mean concentration of crude fiber between samples of GR2E and PSB Rc82 rice grain, the difference was relatively small (10.5 percent) and unlikely to be biologically meaningful.*

Moreover, ***comparison of the mineral composition in samples of GR2E and control PSB Rc82 rice grain did not reveal any statistically significant differences*** *in the concentrations of any measured analytes. The mean concentrations of each of the minerals measured in samples from GR2E and control PSB Rc82 rice grain were within the ranges reported in the literature.*

A comparison of ***amino acid composition of event GR2E and control PSB Rc82 rice (grown during the rainy and dry season) grain showed no statistical differences*** *in the concentrations of any amino acids between samples of Gr2E and PSB Rc82. The mean concentrations of each of the amino acids except tryptophan (lower but not statistically different) in samples from GR2E and PSB Rc82 rice were within the ranges of literature values.*

In addition, samples of event GR2E and control PSB Rc82 rice grain were analyzed for concentrations of the water-soluble B vitamins (thiamine, riboflavin, niacin, pantothenic acid, pyridoxine, and folic acid), β-carotene, and α-tocopherol (Vitamin E). ***Except for B-carotene which was intended to be elevated in GR2E rice, there were no statistically significant differences noted in the concentrations of any measured vitamins*** *between GR2E and control PSB Rc82 rice.*

For the analysis of fatty acids in grain, it was reported that the only statistically significant different observed between GR2E and control PSB Rc82 rice samples was in the concentration of stearic (C18:0) acid which was ~ 6.5% higher for GR2E rice.

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The data for the grain fatty acids from GR2E were within the range reported in the literature.

Analysis of anti-nutrients present in grain were also conducted. The assessors have confirmed that there were ***no statistically significant differences in the concentrations of phytic acid or in levels of trypsin inhibitor between samples of GR2E and PSB Rc82 control rice****. On the other hand, data on levels of phytic acid and trypsin inhibitor in conventional rice grain are limited or non-existent. Mean concentrations of phytic acid in grain samples from GR2E and control PSB Rc82 rice were both slightly outside the range reported from the ILSI Crop Composition Database, but were not significantly different.*

PPSSD Assessment

Results of the analysis indicated that there is ***no differences in the proximate, fiber, mineral, amino acid, fatty acid, vitamins and anti-nutrient of GR2E rice and the non-transgenic rice that can be considered biologically relevant*** *except for the fortification with β-carotene which is the induced trait in GR2E rice*

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*…****for the proximate and fiber analysis of grain, there is also no statistically significant differences identified in grain samples*** *derived from GR2E and control PSB Rc82 rice.*

…there was also ***no statistically significant differences observed in the mineral composition*** *between the samples of GR2E grain and the control.*

Moreover, a comparison of ***amino acid composition of event GR2E and control PSB Rc82 rice grain showed no significant differences****. In addition, the data derived from the transgenic line are within the reported range except for tryptophan which was slightly lower and not statistically different from sample and the control.*

Among all vitamins tested, ***no significant differences were observed in vitamins composition between the sample and the control except for beta carotene*** *which was intended to be elevated and no statistical difference from the sample and the control. In addition, the data derived from the transgenic line are within the reported range of literature except for pyridoxine (B6), folic Acid (B9) and α-tocopherol which were not statistically significantly different between sample and control.*

For the analysis of ***fatty acids in grain, the BAI reported that no statistically significant differences were identified between sample GR2E and control PSB Rc82 rice as to concentration of fatty acids except in the concentration of stearic acid****, which was approximately 6.5 % higher for GR2E rice. In addition, the data derived from the transgenic line of fatty acid are within the reported range in literature. Stearic acid comprises approximately two percent of the total fatty acids in rice grain*

and is not essential fatty acid. The small but statistically significant difference between stearic acid concentrations in samples of GR2E and control PSB Rc82 rice is unlikely to be biologically relevant.

***No statistically significant differences were observed in phytic acid composition or in the levels of trypsin inhibitor between the sample and the control**. In addition, the data derived from the transgenic line are within the reported range of literature and mean concentrations of phytic acid in grain samples from sample and control rice.*

In conclusion, the summary data examined by the agencies in assessing the food safety of Golden Rice is a gross oversimplification of the, possibly important, differences seen in the nutritional composition between individual sites and for individual years, notably for the levels of numerous fatty acids. It's clear that further investigation is needed to determine the underlying cause(s) of the significant differences, particularly for fatty acids.

c) Potentially toxic elements have not been reported

The compositional data do not include analyses of the potentially toxic elements (e.g. lead, cadmium, arsenic). Rice is well known for taking up some potentially toxic elements[8]. The genetic engineering of rice and production of carotenoids may have affected the uptake of such elements. Therefore, their analysis should form part of the compositional data and assessment.

d) Levels of intermediate compounds in the engineered pathway to carotenoids have not been reported.

The engineered metabolic pathway to produce beta carotene (and other carotenoids) contains intermediary compounds, e.g. phytoene (Figs. 16 and 22). However, levels of these intermediary compounds are not reported in the compositional data. It's important to determine whether levels of intermediate compounds accumulate in the rice and, if so, whether they are at levels normally seen in foodstuff. This will allow assessment of any risk associated with their intake (possibly as an addition to a normal diet) in this GM rice.

3) GM contamination of rice is possible even without commercial propagation.

In the consolidated report (DNER assessment, para 2) "*the Committee noted that the chances of unintended release or planting of the regulated article is very minimal and will not cause any damaging and lasting effects to the environment. Also, the application clearly states that the use of GR2E for Food, Feed and/or Processing will occur after approval for commercial propagation.* Similarly, the ERA report (Section III Monitoring Plan) states the

[8] See, e.g. Norton, G. (2019) Rice minerals and heavy metal(oid)s. Chapter 6 in: Rice Chemistry and Technology (4th edn.) Bao. J. (ed.) Elsevier, UK. pp. 169-194.

"Use of GR2E rice in FFP will only occur following propagation approval in the Philippines. There are no plausible risk hypotheses requiring testing via post-market environmental monitoring (PMEM)."

There is no GM rice grown commercially anywhere in the world. Despite this, GM rice in China and the USA caused major global GM contamination incidents even though they never commercially grown[9]. These were herbicide tolerant Liberty Link (LL) rice from the United States and insect resistant "Bt63" rice from China.

First discovered in 2005, GM rice Bt63 was also discovered in food imports containing rice products in Europe. This led to the EU Commission imposing emergency controls on all rice products from China to prevent imports of unauthorised GM rice[10]. These restrictions continue to the present day and require consignments to be certified as not containing GM rice and imports to be subjected to sampling and document checks at the EU port of entry. GM rice is still being found in imported foods from China and Hong Kong 14 years later, with seven consignments rejected from the EU so far in 2019[11].

In August 2006, the 2005 crop of (non-GM) rice in the USA was found to be contaminated with GM rice, LLRICE601[12]. In March 2007, the USDA confirmed that rice had become contaminated with yet another unauthorised GM rice line LLRICE604[13]. These GM contaminants were found in rice entering 28 different countries during 2006[14]. None of the experimental GM rice lines had never been grown commercially.

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[9] Price, B. & Cotter, J. (2014) The GM Contamination Register: a review of recorded contamination incidents associated with genetically modified organisms (GMOs), 1997–2013. International Journal of Food Contamination 1: 5. https://doi.org/10.1186/s40550-014-0005-8

[10] EC (2011) Commission implementing decision of 22 December 2011 on emergency measures regarding unauthorised genetically modified rice in rice products originating from China and repealing Decision 2008/289/EC O J Eur Union L 343:140-147
EC (2017) Implementing Decision 2011/884/EU — emergency measures regarding unauthorised genetically modified rice in rice products originating from China. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A4301920

[11] EU RSAFF (Rapid Alert System for Food and Feed) Portal database. https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1

[12] US Food and Drug Administration (2006) Statement on report of bioengineered rice in the food supply. http://www.fda.gov/Food/FoodScienceResearch/Biotechnology/Announcements/ucm109411.htm

[13] USDA (2007) Report of LibertyLink Rice Incidents. http://www.aphis.usda.gov/newsroom/content/2007/10/content/printable/RiceReport10-2007.pdf

[14] Price, B., Cotter, J., (2014) The GM Contamination Register: a review of recorded contamination incidents associated with genetically modified organisms (GMOs), 1997–2013. International Journal of Food Contamination 1: 5. https://doi.org/10.1186/s40550-014-0005-8

These cases of GM contamination occurred without any commercial cultivation. It is not known how they escapes from experiments, but they very clearly show that GM rice cannot be controlled. The two cases of GM rice contamination both caused disruption to international trade. Although rice is not a major export from the Philippines, rice exports were worth US$470,000 in 2018[15].

There are substantial *chances of unintended release or planting of the regulated article.* Therefore, it is essential that:

d. **A monitoring plan is employed to detect any unauthorised planting or entry into the into the food system, including rice exports;**
e. **A contingency plan is employed in case of any GM contamination incidents;**
f. **There are clear rules of liability and compensation should a GM contamination incident occur with GM Golden rice.**

[15] World's Top Exports (2019) Rice exports by country. Retrieved from http://www.worldstopexports.com/rice-exports-country/

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Appendix – Statistical Differences in Compositional Data

Summary data in Supporting Information for the Risk Analysis Report for a Genetically Modified
Plant for Direct use as Food, Feed, or Processing (GR2E-FFP-supporting-dossier-PH).

Table 29. Summary of statistically significant differences observed in the multi-year combined-site analysis of compositional parameters measured for GR2E and control PSB Rc82 rice

Analytical Component (units)	Event GR2E Mean[†]	PSB Rc82 Control Mean	Mean Difference (% of control)	Significance (p-Value)	Combined Literature Range
Grain Fatty Acids (% total fatty acids)					
Stearic (C18:0)	2.25	2.11	6.5%	0.0487	1.5–2.8
Grain Vitamins (mg/kg dry weight)					
β-Carotene	1.26	<LOQ[a]			

[†] Values represent the least square mean of three replicate samples collected over two growing seasons from each of four locations in the Philippines (n=24 for each entry).
[a] LOQ = Limit of quantification, which for β-carotene was 0.05 mg/kg dry weight.

Year 2015 (IR2015-07001: Nutrient Composition 2015) in the document entitled Studies Submitted in Support of the Food Safety Assessment of Provitamin A Biofortified GR2E Rice (GR2E-FFP-submitted-study-reports-PH

Statistical differences found in 2015 when pooled across sites

Table 13. Summary of statistically significant differences observed in the combined-site analysis of compositional parameters measured for GR2E and control PSB Rc82 rice

Analytical Component (units)	Event GR2E Mean[†]	PSB Rc82 Control Mean	Mean Difference (% of control)	Significance (p-Value)	Combined Literature Range
Grain Proximates (% dry weight)					
Crude Fibre	12.39	11.21	10.5%	0.0497	8.6–18.13
Grain Fatty Acids (% total fatty acids)					
Myristic (C14:0)	0.48	0.42	13.8%	0.0032	0.32–1.1
Palmitic (C16:0)	19.54	18.47	5.8%	0.0019	14.9–31.2
Stearic (C18:0)	2.17	2.06	5.4%	0.0408	1.5–2.8
Linoleic (C18:2)	33.73	34.53	–2.3%	0.0022	26.1–39.0
α-Linolenic (C18:3)	1.41	1.35	4.5%	0.0012	0.9–1.6
Arachidic (C20:0)	0.86	0.88	–2.5%	0.0266	0.4–0.79
Eicosenoic (C20:1)	0.50	0.53	–4.9%	0.0352	0.4–0.6
Behenic (C22:0)	0.54	0.57	–5.2%	0.0336	0.2–0.82
Grain Vitamins (mg/kg dry weight)					
β-Carotene	1.15	<LOQ[a]			
Niacin (vitamin B3)	28.09	24.24	15.9%	0.0421	34–65

[†] Values represent the least square mean of three replicate samples collected from each of four locations in the Philippines where event GR2E and control PSB Rc82 rice was grown during the rainy season in 2015 (n=12 for each entry).
[a] LOQ = Limit of quantification, which for β-carotene was 0.05 mg/kg dry weight.

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Statistical differences found in 2015 for individual sites (i.e. Pr < 0.05)

Table 24. Single-sites analysis for straw proximates, fibre, and minerals: Batac City and Los Baños

Loc	Analyte	Statistic	GR2E	RC82	Analyte	Statistic	GR2E	RC82
BC	(%DW)				(%DW)			
	Moisture (%FW)	LSMean	12.11	10.72	Crude Protein	LSMean	10.59	9.202
		95% CI	10.5<->13.7	9.13<->12.3		95% CI	9.3<->11.9	7.91<->10.5
		Range	(11.1-13.3)	(10.3-11.1)		Range	(9.5-11.3)	(8.82-9.86)
		Pr(>F)	0.07709			Pr(>F)	0.1363	
		LSMeansDiff	1.4			LSMeansDiff	1.38	
		LSMeansDiffCI	-0.376<->3.17			LSMeansDiffCI	-1.07<->3.84	
	Crude Fat	LSMean	4.098	5.243	ADF	LSMean	49.57	51.85
		95% CI	2.86<->5.34	4<->6.49		95% CI	47<->52.1	49.3<->54.4
		Range	(3.31-4.8)	(4.62-6.15)		Range	(48.2-51.8)	(51-52.5)
		Pr(>F)	0.2125			Pr(>F)	0.129	
		LSMeansDiff	-1.14			LSMeansDiff	-2.28	
		LSMeansDiffCI	-2.9<->0.614			LSMeansDiffCI	-6.19<->1.63	
	Crude Fibre	LSMean	27.86	30.55	NDF	LSMean	63.35	66.45
		95% CI	26.7<->29	29.4<->31.7		95% CI	60.1<->66.6	63.2<->69.7
		Range	(27-28.7)	(29.9-31.1)		Range	(61.8-65.1)	(63.8-68.1)
		Pr(>F)	0.04558			Pr(>F)	0.2007	
		LSMeansDiff	-2.69			LSMeansDiff	-3.09	
		LSMeansDiffCI	-4.34<->-1.04			LSMeansDiffCI	-7.66<->1.47	
	Ash	LSMean	21.27	21.08	Calcium	LSMean	0.665	0.5355
		95% CI	20.8<->21.7	20.6<->21.6		95% CI	0.623<->0.707	0.494<->0.578
		Range	(21.1-21.4)	(20.8-21.2)		Range	(0.643-0.706)	(0.525-0.543)
		Pr(>F)	0.07072			Pr(>F)	0.02347	
		LSMeansDiff	0.188			LSMeansDiff	0.13	
		LSMeansDiffCI	-0.0395<->0.416			LSMeansDiffCI	0.0426<->0.216	
	Phosphorus	LSMean	0.1179	0.1052	CHO	LSMean	64.85	65.58
		95% CI	0.0975<->0.138	0.0848<->0.126		95% CI	62.8<->66.9	63.5<->67.6
		Range	(0.106-0.135)	(0.098-0.117)		Range	(63.8-66.8)	(65.1-66.3)
		Pr(>F)	0.3456			Pr(>F)	0.5587	
		LSMeansDiff	0.0127			LSMeansDiff	-0.723	
		LSMeansDiffCI	-0.0161<->0.0415			LSMeansDiffCI	-3.61<->2.16	

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Table 25. Single-sites analysis for straw proximates, fibre, and minerals: Muñoz and San Mateo

Loc	Analyte	Statistic	GR2E	RC82	Analyte	Statistic	GR2E	RC82
MZ	(%DW)				(%DW)			
	Moisture (%FW)	LSMean	13.47	14.28	Crude Protein	LSMean	3.669	3.54
		95% CI	11.1<->15.9	11.9<->16.7		95% CI	3.09<->4.25	2.96<->4.12
		Range	(13.1-14)	(13-16.5)		Range	(3.23-4.01)	(3.19-3.81)
		Pr(>F)	0.4474			Pr(>F)	0.7038	
		LSMeansDiff	-0.806			LSMeansDiff	0.129	
		LSMeansDiffCI	-4.5<->2.89			LSMeansDiffCI	-0.689<->0.947	
	Crude Fat	LSMean	1.742	1.852	ADF	LSMean	53.23	53.64
		95% CI	1.43<->2.05	1.54<->2.16		95% CI	48.9<->57.6	49.3<->58
		Range	(1.58-2.03)	(1.76-1.97)		Range	(52.3-53.9)	(51.4-57.9)
		Pr(>F)	0.5612			Pr(>F)	0.8689	
		LSMeansDiff	-0.11			LSMeansDiff	-0.413	
		LSMeansDiffCI	-0.551<->0.331			LSMeansDiffCI	-6.54<->5.71	
	Crude Fibre	LSMean	31.49	31.44	NDF	LSMean	61.71	62.46
		95% CI	29.9<->33.1	29.8<->33		95% CI	58.9<->64.5	59.7<->65.2
		Range	(30.4-32.8)	(30.7-32.1)		Range	(59.2-63.9)	(62-62.8)
		Pr(>F)	0.9487			Pr(>F)	0.6452	
		LSMeansDiff	0.059			LSMeansDiff	-0.755	
		LSMeansDiffCI	-2.2<->2.31			LSMeansDiffCI	-4.66<->3.15	
	Ash	LSMean	29.5	29.75	Calcium	LSMean	0.357	0.3483
		95% CI	28.2<->30.8	28.5<->31		95% CI	0.333<->0.382	0.324<->0.373
		Range	(28.7-30.4)	(28.9-30.2)		Range	(0.353-0.361)	(0.326-0.367)
		Pr(>F)	0.7148			Pr(>F)	0.5074	
		LSMeansDiff	-0.251			LSMeansDiff	0.0087	
		LSMeansDiffCI	-2.82<->2.32			LSMeansDiffCI	-0.0381<->0.0555	
	Phosphorus	LSMean	0.0969	0.0936	CHO	LSMean	67.02	65.67
		95% CI	0.0798<->0.114	0.0765<->0.111		95% CI	64.7<->69.4	63.3<->68
		Range	(0.084-0.111)	(0.088-0.102)		Range	(65-69)	(65.2-66.2)
		Pr(>F)	0.7414			Pr(>F)	0.3742	
		LSMeansDiff	0.0033			LSMeansDiff	1.35	
		LSMeansDiffCI	-0.0208<->0.0274			LSMeansDiffCI	-1.96<->4.67	

Loc	Analyte	Statistic	GR2E	RC82	Analyte	Statistic	GR2E	RC82
SM	(%DW)				(%DW)			
	Moisture (%FW)	LSMean	11.94	12.32	Crude Protein	LSMean	5.825	6.683
		95% CI	10.3<->13.5	10.7<->13.9		95% CI	4.98<->6.67	5.84<->7.53
		Range	(11.6-12.7)	(11.5-13.2)		Range	(5.14-6.2)	(6.34-7.14)
		Pr(>F)	0.2424			Pr(>F)	0.135	
		LSMeansDiff	-0.373			LSMeansDiff	-0.858	
		LSMeansDiffCI	-1.35<->0.605			LSMeansDiffCI	-2.37<->0.656	
	Crude Fat	LSMean	2.832	2.479	ADF	LSMean	52.29	47.82
		95% CI	2.28<->3.39	1.92<->3.03		95% CI	51.1<->53.5	46.7<->49
		Range	(2.62-3.06)	(2.29-2.81)		Range	(51.8-52.6)	(46.8-48.4)
		Pr(>F)	0.05331			Pr(>F)	0.01708	
		LSMeansDiff	0.353			LSMeansDiff	4.48	
		LSMeansDiffCI	-0.0125<->0.719			LSMeansDiffCI	2.83<->6.12	

Table 26. Single-sites analysis for grain proximates: Batac City and Los Baños

Loc	Analyte	Statistic	GR2E	RC82	Analyte	Statistic	GR2E	RC82
BC	(%DW)				(%DW)			
	Moisture (%FW)	LSMean	13.28	13.1	Crude Protein	LSMean	8.36	8.492
		95% CI	12.4<->14.1	12.2<->14		95% CI	7.45<->9.27	7.58<->9.4
		Range	(12.9-13.8)	(12.9-13.5)		Range	(8.16-8.7)	(8.01-9.05)
		Pr(>F)	0.2471			Pr(>F)	0.4623	
		LSMeansDiff	0.172			LSMeansDiff	-0.131	
		LSMeansDiffCI	-0.286<->0.631			LSMeansDiffCI	-0.758<->0.495	
	Crude Fat	LSMean	1.296	1.6	ADF	LSMean	19.23	18.05
		95% CI	1.12<->1.47	1.43<->1.77		95% CI	17.4<->21	16.2<->19.8
		Range	(1.18-1.41)	(1.52-1.72)		Range	(18.4-20.3)	(17.6-18.7)
		Pr(>F)	0.07317			Pr(>F)	0.03732	
		LSMeansDiff	-0.304			LSMeansDiff	1.18	
		LSMeansDiffCI	-0.547<->-0.0623			LSMeansDiffCI	0.171<->2.2	
	Crude Fibre	LSMean	12.17	11.78	NDF	LSMean	21.36	26.81
		95% CI	10.5<->13.8	10.2<->13.4		95% CI	13.2<->29.6	18.6<->35
		Range	(10.8-12.9)	(10.9-12.3)		Range	(19.6-23.8)	(19.3-32.8)
		Pr(>F)	0.6831			Pr(>F)	0.3222	
		LSMeansDiff	0.391			LSMeansDiff	-5.45	
		LSMeansDiffCI	-1.9<->2.69			LSMeansDiffCI	-17<->6.15	
	Ash	LSMean	5.089	5.499	TDF	LSMean	17.12	15.61
		95% CI	4.78<->5.4	5.19<->5.81		95% CI	11.4<->22.8	9.89<->21.3
		Range	(4.95-5.22)	(5.4-5.66)		Range	(15.4-20)	(11.4-20.1)
		Pr(>F)	0.008418			Pr(>F)	0.6543	
		LSMeansDiff	-0.41			LSMeansDiff	1.52	
		LSMeansDiffCI	-0.573<->-0.247			LSMeansDiffCI	-6.57<->9.6	
	CHO	LSMean	85.26	84.41	Amylose	LSMean	10.11	9.479
		95% CI	84.5<->86	83.7<->85.1		95% CI	7.74<->12.5	7.1<->11.9
		Range	(85-85.4)	(83.8-84.8)		Range	(9.2-11.2)	(7.44-10.8)
		Pr(>F)	0.04309			Pr(>F)	0.6008	
		LSMeansDiff	0.846			LSMeansDiff	0.635	
		LSMeansDiffCI	0.0649<->1.63			LSMeansDiffCI	-3.8<->5.08	
	Starch	LSMean	59.89	55.39				
		95% CI	55.1<->64.7	50.6<->60.2				
		Range	(58.5-61.5)	(51.4-58.4)				
		Pr(>F)	0.1199					
		LSMeansDiff	4.5					
		LSMeansDiffCI	-2.88<->11.9					

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Table 27. Single-sites analysis for grain proximates: Muñoz and San Mateo

Loc	Analyte	Statistic	GR2E	RC82
MZ	(%DW)			
	Moisture (%FW)	LSMean	12.53	12.96
		95% CI	11.9<->13.2	12.3<->13.6
		Range	(12.3-12.9)	(12.4-13.3)
		Pr(>F)	0.2429	
		LSMeansDiff	-0.424	
		LSMeansDiffCI	-1.54<->0.689	
	Crude Fat	LSMean	1.173	1.169
		95% CI	1.07<->1.27	1.07<->1.27
		Range	(1.1-1.22)	(1.1-1.23)
		Pr(>F)	0.9444	
		LSMeansDiff	0.0041	
		LSMeansDiffCI	-0.139<->0.147	
	Crude Fibre	LSMean	13.18	10.97
		95% CI	11<->15.4	8.76<->13.2
		Range	(12.3-14.6)	(10.5-11.8)
		Pr(>F)	0.01851	
		LSMeansDiff	2.21	
		LSMeansDiffCI	0.898<->3.52	
	Ash	LSMean	5.557	5.77
		95% CI	5.33<->5.78	5.55<->5.99
		Range	(5.5-5.67)	(5.62-5.96)
		Pr(>F)	0.2009	
		LSMeansDiff	-0.213	
		LSMeansDiffCI	-0.527<->0.102	
	CHO	LSMean	86.6	85.85
		95% CI	85.8<->87.4	85.1<->86.6
		Range	(86.3-86.9)	(85.2-86.4)
		Pr(>F)	0.1978	
		LSMeansDiff	0.752	
		LSMeansDiffCI	-0.347<->1.85	
	Starch	LSMean	45.29	61.13
		95% CI	29<->61.6	44.8<->77.4
		Range	(32.8-57.9)	(54.1-68.2)
		Pr(>F)	0.1964	
		LSMeansDiff	-15.8	
		LSMeansDiffCI	-38.9<->7.19	

Analyte	Statistic	GR2E	RC82
(%DW)			
Crude Protein	LSMean	6.666	7.21
	95% CI	6.15<->7.18	6.69<->7.73
	Range	(6.49-6.81)	(6.76-7.6)
	Pr(>F)	0.1757	
	LSMeansDiff	-0.543	
	LSMeansDiffCI	-1.28<->0.189	
ADF	LSMean	19.8	17.78
	95% CI	17.7<->21.8	15.7<->19.8
	Range	(18.5-21.7)	(17.2-18.4)
	Pr(>F)	0.193	
	LSMeansDiff	2.02	
	LSMeansDiffCI	-0.881<->4.92	
NDF	LSMean	27.78	26.24
	95% CI	16.7<->38.8	15.2<->37.3
	Range	(22.8-35.5)	(18.6-32.4)
	Pr(>F)	0.8096	
	LSMeansDiff	1.54	
	LSMeansDiffCI	-14.1<->17.2	
TDF	LSMean	18.48	18.74
	95% CI	16<->20.9	16.3<->21.2
	Range	(16.7-20.3)	(17.4-19.8)
	Pr(>F)	0.8567	
	LSMeansDiff	-0.256	
	LSMeansDiffCI	-3.72<->3.21	
Amylose	LSMean	10.04	13.48
	95% CI	6.13<->14	9.57<->17.4
	Range	(7.31-13)	(11.3-14.6)
	Pr(>F)	0.2269	
	LSMeansDiff	-3.44	
	LSMeansDiffCI	-8.97<->2.1	

Loc	Analyte	Statistic	GR2E	RC82
SM	(%DW)			
	Moisture (%FW)	LSMean	12.75	13.53
		95% CI	12.5<->13	13.3<->13.8
		Range	(12.7-12.9)	(13.3-13.6)
		Pr(>F)	0.0125	
		LSMeansDiff	-0.779	
		LSMeansDiffCI	-1.16<->-0.401	
	Crude Fat	LSMean	1.252	1.13
		95% CI	0.792<->1.71	0.669<->1.59
		Range	(0.947-1.54)	(0.957-1.45)
		Pr(>F)	0.6544	
		LSMeansDiff	0.122	
		LSMeansDiffCI	-0.887<->1.13	
	Crude Fibre	LSMean	12.55	11.04
		95% CI	12<->13.1	10.5<->11.6
		Range	(12.3-13)	(10.8-11.4)
		Pr(>F)	0.03022	
		LSMeansDiff	1.52	
		LSMeansDiffCI	0.769<->2.27	
	Ash	LSMean	5.674	5.517
		95% CI	4.83<->6.52	4.68<->6.36
		Range	(5.3-6)	(5-5.9)
		Pr(>F)	0.4462	
		LSMeansDiff	0.157	
		LSMeansDiffCI	-0.56<->0.873	
	CHO	LSMean	85.69	86.09
		95% CI	84.9<->86.5	85.3<->86.9
		Range	(85.1-86.4)	(85.8-86.3)
		Pr(>F)	0.4312	
		LSMeansDiff	-0.402	
		LSMeansDiffCI	-1.54<->0.739	
	Starch	LSMean	58.52	65.25
		95% CI	54.1<->63	60.8<->69.7
		Range	(55.6-62.9)	(64.6-65.7)
		Pr(>F)	0.0820	
		LSMeansDiff	-6.73	
		LSMeansDiffCI	-15.6<->2.11	

Analyte	Statistic	GR2E	RC82
(%DW)			
Crude Protein	LSMean	7.387	7.263
	95% CI	5.98<->8.8	5.85<->8.67
	Range	(6.61-8.1)	(6.84-7.79)
	Pr(>F)	0.5493	
	LSMeansDiff	0.123	
	LSMeansDiffCI	-0.62<->0.866	
ADF	LSMean	19.2	16.63
	95% CI	18.7<->19.7	16.1<->17.2
	Range	(18.9-19.3)	(16.2-16.9)
	Pr(>F)	0.01105	
	LSMeansDiff	2.57	
	LSMeansDiffCI	1.81<->3.33	
NDF	LSMean	24.07	18.31
	95% CI	21<->27.2	15.2<->21.4
	Range	(23.1-24.6)	(16.2-20.7)
	Pr(>F)	0.0233	
	LSMeansDiff	5.75	
	LSMeansDiffCI	1.91<->9.6	
TDF	LSMean	17.78	18.9
	95% CI	16<->19.6	17.1<->20.7
	Range	(16.5-18.7)	(17.7-19.9)
	Pr(>F)	0.3502	
	LSMeansDiff	-1.11	
	LSMeansDiffCI	-3.67<->1.44	
Amylose	LSMean	13.49	11.05
	95% CI	12.3<->14.7	9.86<->12.2
	Range	(12.8-14.4)	(10.6-11.3)
	Pr(>F)	0.0208	
	LSMeansDiff	2.15	
	LSMeansDiffCI	0.906<->3.99	

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Table 30. Single-site analysis for grain fatty acids: Batac City

Loc	Analyte	Statistic	GR2E	RC82
BC	(%FA)			
	Myristic (C14:0)	LSMean	0.4969	0.447
		95% CI	0.478<->0.515	0.429<->0.465
		Range	(0.492-0.503)	(0.433-0.46)
		Pr(>F)	0.01362	
		LSMeansDiff	0.0499	
		LSMeansDiffCI	0.0246<->0.0752	
	Palmitoleic (C16:1)	LSMean	0.2043	0.2029
		95% CI	0.194<->0.215	0.192<->0.213
		Range	(0.197-0.21)	(0.198-0.21)
		Pr(>F)	0.8106	
		LSMeansDiff	0.0014	
		LSMeansDiffCI	-0.0133<->0.0162	
	Oleic (C18:1)	LSMean	38.5	39.29
		95% CI	38.2<->38.8	39<->39.6
		Range	(38.4-38.6)	(39.1-39.5)
		Pr(>F)	0.01342	
		LSMeansDiff	-0.79	
		LSMeansDiffCI	-1.19<->-0.392	
	Linolenic (C18:3)	LSMean	1.37	1.312
		95% CI	1.35<->1.39	1.29<->1.33
		Range	(1.36-1.38)	(1.3-1.32)
		Pr(>F)	0.02802	
		LSMeansDiff	0.057	
		LSMeansDiffCI	0.0299<->0.0841	
	Eicosenoic (C20:1)	LSMean	0.493	0.5179
		95% CI	0.468<->0.518	0.493<->0.543
		Range	(0.48-0.507)	(0.498-0.531)
		Pr(>F)	0.1865	
		LSMeansDiff	-0.025	
		LSMeansDiffCI	-0.06<->0.0101	
	Lignoceric (C24:0)	LSMean	1.022	1.105
		95% CI	0.978<->1.07	1.06<->1.15
		Range	(1-1.06)	(1.08-1.12)
		Pr(>F)	0.04962	
		LSMeansDiff	-0.0834	
		LSMeansDiffCI	-0.166<->-3e-04	

Analyte	Statistic	GR2E	RC82
(%FA)			
Palmitic (C16:0)	LSMean	20.25	18.97
	95% CI	20.1<->20.4	18.8<->19.2
	Range	(20.2-20.4)	(18.8-19.1)
	Pr(>F)	0.005389	
	LSMeansDiff	1.28	
	LSMeansDiffCI	0.875<->1.69	
Stearic (C18:0)	LSMean	2.216	2.012
	95% CI	2.19<->2.24	1.99<->2.04
	Range	(2.21-2.22)	(1.99-2.03)
	Pr(>F)	0.002243	
	LSMeansDiff	0.203	
	LSMeansDiffCI	0.162<->0.245	
Linoleic (C18:2)	LSMean	34.08	34.73
	95% CI	33.9<->34.3	34.5<->34.9
	Range	(34-34.2)	(34.6-34.9)
	Pr(>F)	0.0158	
	LSMeansDiff	-0.65	
	LSMeansDiffCI	-1<->-0.294	
Arachidic (C20:0)	LSMean	0.8324	0.8626
	95% CI	0.807<->0.858	0.837<->0.888
	Range	(0.818-0.855)	(0.852-0.869)
	Pr(>F)	0.1144	
	LSMeansDiff	-0.0302	
	LSMeansDiffCI	-0.0785<->0.018	
Behenic (C22:0)	LSMean	0.5386	0.5536
	95% CI	0.513<->0.564	0.528<->0.579
	Range	(0.523-0.559)	(0.543-0.565)
	Pr(>F)	0.3039	
	LSMeansDiff	-0.015	
	LSMeansDiffCI	-0.0622<->0.0321	

Table 31. Single-sites analysis for grain fatty acids: Los Baños

Loc	Analyte	Statistic	GR2E	RC82
LB	(%FA)			
	Myristic (C14:0)	LSMean	0.4658	0.3997
		95% CI	0.452<->0.48	0.386<->0.414
		Range	(0.462-0.471)	(0.386-0.407)
		Pr(>F)	0.01138	
		LSMeansDiff	0.0661	
		LSMeansDiffCI	0.0464<->0.0859	
	Palmitoleic (C16:1)	LSMean	0.2059	0.2002
		95% CI	0.197<->0.215	0.192<->0.209
		Range	(0.201-0.214)	(0.199-0.203)
		Pr(>F)	0.3259	
		LSMeansDiff	0.0057	
		LSMeansDiffCI	-0.0066<->0.0181	
	Oleic (C18:1)	LSMean	40.11	40.44
		95% CI	39.9<->40.3	40.3<->40.6
		Range	(40.1-40.2)	(40.3-40.6)
		Pr(>F)	0.04117	
		LSMeansDiff	-0.337	
		LSMeansDiffCI	-0.64<->-0.0333	
	Linolenic (C18:3)	LSMean	1.468	1.405
		95% CI	1.44<->1.5	1.38<->1.44
		Range	(1.46-1.48)	(1.39-1.43)
		Pr(>F)	0.01483	
		LSMeansDiff	0.0629	
		LSMeansDiffCI	0.0296<->0.0963	
	Eicosenoic (C20:1)	LSMean	0.4839	0.5166
		95% CI	0.44<->0.527	0.473<->0.56
		Range	(0.445-0.517)	(0.502-0.525)
		Pr(>F)	0.2776	
		LSMeansDiff	-0.0327	
		LSMeansDiffCI	-0.0943<->0.0288	
	Lignoceric (C24:0)	LSMean	1.068	1.146
		95% CI	1.01<->1.13	1.09<->1.21
		Range	(1.04-1.11)	(1.12-1.19)
		Pr(>F)	0.1266	
		LSMeansDiff	-0.0774	
		LSMeansDiffCI	-0.162<->0.0073	

Analyte	Statistic	GR2E	RC82
(%FA)			
Palmitic (C16:0)	LSMean	19.28	18.28
	95% CI	19<->19.6	18<->18.6
	Range	(19.1-19.4)	(18-18.4)
	Pr(>F)	0.02133	
	LSMeansDiff	0.999	
	LSMeansDiffCI	0.587<->1.41	
Stearic (C18:0)	LSMean	2.212	2.089
	95% CI	2.14<->2.29	2.02<->2.16
	Range	(2.17-2.28)	(2.08-2.12)
	Pr(>F)	0.08255	
	LSMeansDiff	0.123	
	LSMeansDiffCI	0.0182<->0.227	
Linoleic (C18:2)	LSMean	33.16	34.06
	95% CI	32.5<->33.8	33.5<->34.7
	Range	(32.9-33.5)	(33.8-34.4)
	Pr(>F)	0.01126	
	LSMeansDiff	-0.907	
	LSMeansDiffCI	-1.32<->-0.489	
Arachidic (C20:0)	LSMean	0.8629	0.8723
	95% CI	0.842<->0.884	0.851<->0.894
	Range	(0.849-0.882)	(0.864-0.88)
	Pr(>F)	0.4776	
	LSMeansDiff	-0.0094	
	LSMeansDiffCI	-0.0394<->0.0207	
Behenic (C22:0)	LSMean	0.5589	0.5864
	95% CI	0.522<->0.596	0.55<->0.623
	Range	(0.54-0.585)	(0.565-0.61)
	Pr(>F)	0.2776	
	LSMeansDiff	-0.0275	
	LSMeansDiffCI	-0.0793<->0.0242	

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Table 32. Single-sites analysis for grain fatty acids: Muñoz

Loc	Analyte	Statistic	GR2E	RC82
MZ	(%FA)			
		LSMean	0.4724	0.4251
		95% CI	0.461<->0.484	0.414<->0.436
	Myristic	Range	(0.463-0.482)	(0.421-0.429)
	(C14:0)	Pr(>F)	0.01478	
		LSMeansDiff	0.0473	
		LSMeansDiffCI	0.0311<->0.0634	
		LSMean	0.21	0.2148
		95% CI	0.203<->0.217	0.208<->0.221
	Palmitoleic	Range	(0.204-0.215)	(0.213-0.217)
	(C16:1)	Pr(>F)	0.2738	
		LSMeansDiff	-0.0047	
		LSMeansDiffCI	-0.0184<->0.0089	
		LSMean	39.74	39.7
		95% CI	39.1<->40.3	39.1<->40.3
	Oleic	Range	(39.3-40)	(39.4-40.1)
	(C18:1)	Pr(>F)	0.873	
		LSMeansDiff	0.0472	
		LSMeansDiffCI	-1.07<->1.17	
		LSMean	1.436	1.37
		95% CI	1.4<->1.48	1.33<->1.41
	Linolenic	Range	(1.41-1.46)	(1.34-1.39)
	(C18:3)	Pr(>F)	0.06537	
		LSMeansDiff	0.0663	
		LSMeansDiffCI	-0.0104<->0.143	
		LSMean	0.5197	0.5411
		95% CI	0.497<->0.542	0.518<->0.564
	Eicosenoic	Range	(0.51-0.536)	(0.531-0.558)
	(C20:1)	Pr(>F)	0.2052	
		LSMeansDiff	-0.0213	
		LSMeansDiffCI	-0.0533<->0.0106	
		LSMean	0.9896	1.1
		95% CI	0.945<->1.03	1.06<->1.14
	Lignoceric	Range	(0.963-1)	(1.07-1.13)
	(C24:0)	Pr(>F)	0.03467	
		LSMeansDiff	-0.11	
		LSMeansDiffCI	-0.201<->-0.0196	

Analyte	Statistic	GR2E	RC82
(%FA)			
	LSMean	19.15	18.34
	95% CI	19<->19.3	18.2<->18.5
Palmitic	Range	(19-19.3)	(18.3-18.4)
(C16:0)	Pr(>F)	0.01201	
	LSMeansDiff	0.812	
	LSMeansDiffCI	0.562<->1.06	
	LSMean	2.102	2.084
	95% CI	2.01<->2.19	1.99<->2.17
Stearic	Range	(2.06-2.19)	(2.07-2.1)
(C18:0)	Pr(>F)	0.7263	
	LSMeansDiff	0.0183	
	LSMeansDiffCI	-0.108<->0.144	
	LSMean	33.98	34.75
	95% CI	33.5<->34.5	34.3<->35.2
Linoleic	Range	(33.8-34.2)	(34.4-35)
(C18:2)	Pr(>F)	0.08206	
	LSMeansDiff	-0.771	
	LSMeansDiffCI	-1.78<->0.243	
	LSMean	0.8694	0.9008
	95% CI	0.827<->0.912	0.858<->0.943
Arachidic	Range	(0.853-0.885)	(0.883-0.92)
(C20:0)	Pr(>F)	0.002889	
	LSMeansDiff	-0.0314	
	LSMeansDiffCI	-0.0387<->-0.0241	
	LSMean	0.5218	0.5739
	95% CI	0.499<->0.545	0.551<->0.597
Behenic	Range	(0.499-0.535)	(0.573-0.575)
(C22:0)	Pr(>F)	0.04651	
	LSMeansDiff	-0.0522	
	LSMeansDiffCI	-0.0846<->-0.0198	

Table 33. Single-sites analysis for grain fatty acids: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM	(%FA)			
		LSMean	0.4901	0.4195
		95% CI	0.442<->0.538	0.371<->0.468
	Myristic	Range	(0.469-0.518)	(0.381-0.443)
	(C14:0)	Pr(>F)	0.1025	
		LSMeansDiff	0.0707	
		LSMeansDiffCI	0.0025<->0.139	
		LSMean	0.2136	0.2044
		95% CI	0.207<->0.22	0.198<->0.211
	Palmitoleic	Range	(0.211-0.218)	(0.202-0.207)
	(C16:1)	Pr(>F)	0.014	
		LSMeansDiff	0.0091	
		LSMeansDiffCI	0.0044<->0.0138	
		LSMean	39.48	40.03
		95% CI	38.6<->40.3	39.2<->40.9
	Oleic	Range	(39.1-40)	(39.8-40.4)
	(C18:1)	Pr(>F)	0.0507	
		LSMeansDiff	-0.544	
		LSMeansDiffCI	-1.09<->0.0041	
		LSMean	1.364	1.305
		95% CI	1.29<->1.43	1.23<->1.38
	Linolenic	Range	(1.34-1.39)	(1.27-1.33)
	(C18:3)	Pr(>F)	0.004961	
		LSMeansDiff	0.059	
		LSMeansDiffCI	0.041<->0.0769	
		LSMean	0.5005	0.5243
		95% CI	0.475<->0.526	0.498<->0.55
	Eicosenoic	Range	(0.486-0.513)	(0.51-0.54)
	(C20:1)	Pr(>F)	0.09476	
		LSMeansDiff	-0.0238	
		LSMeansDiffCI	-0.0579<->0.0102	
		LSMean	1.134	1.124
		95% CI	0.973<->1.3	0.962<->1.29
	Lignoceric	Range	(1.04-1.25)	(1.08-1.17)
	(C24:0)	Pr(>F)	0.7873	
		LSMeansDiff	0.0108	
		LSMeansDiffCI	-0.14<->0.161	

Analyte	Statistic	GR2E	RC82
(%FA)			
	LSMean	19.48	18.31
	95% CI	18.8<->20.2	17.6<->19
Palmitic	Range	(19.4-19.6)	(17.7-18.9)
(C16:0)	Pr(>F)	0.07418	
	LSMeansDiff	1.17	
	LSMeansDiffCI	-0.283<->2.62	
	LSMean	2.154	2.054
	95% CI	2.09<->2.22	1.99<->2.12
Stearic	Range	(2.15-2.16)	(2.02-2.12)
(C18:0)	Pr(>F)	0.08785	
	LSMeansDiff	0.101	
	LSMeansDiffCI	0.0119<->0.19	
	LSMean	33.72	34.58
	95% CI	32.4<->35	33.3<->35.9
Linoleic	Range	(33.2-34.1)	(34-35.4)
(C18:2)	Pr(>F)	0.06423	
	LSMeansDiff	-0.857	
	LSMeansDiffCI	-1.84<->0.126	
	LSMean	0.8616	0.8781
	95% CI	0.844<->0.879	0.861<->0.895
Arachidic	Range	(0.845-0.872)	(0.874-0.883)
(C20:0)	Pr(>F)	0.1996	
	LSMeansDiff	-0.0165	
	LSMeansDiffCI	-0.0541<->0.0211	
	LSMean	0.5541	0.578
	95% CI	0.522<->0.586	0.546<->0.61
Behenic	Range	(0.545-0.562)	(0.557-0.601)
(C22:0)	Pr(>F)	0.08704	
	LSMeansDiff	-0.0239	
	LSMeansDiffCI	-0.0564<->0.0086	

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Table 35. Single-sites analysis for grain vitamins: Muñoz and San Mateo

Loc	Analyte	Statistic	GR2E	RC82
MZ	(mg/kg DW)			
	Thiamine	LSMean	3.181	3.154
		95% CI	2.81<->3.56	2.78<->3.53
		Range	(2.96-3.39)	(3.01-3.35)
		Pr(>F)	0.8009	
		LSMeansDiff	0.0271	
		LSMeansDiffCI	-0.38<->0.434	
	Niacin	LSMean	25.38	21.4
		95% CI	22.6<->28.2	18.6<->24.2
		Range	(23.4-27.2)	(20.2-23.2)
		Pr(>F)	0.1088	
		LSMeansDiff	3.98	
		LSMeansDiffCI	0.0023<->7.96	
	Pyridoxine	LSMean	2.387	2.327
		95% CI	1.95<->2.82	1.89<->2.76
		Range	(2.22-2.52)	(2.1-2.51)
		Pr(>F)	0.2029	
		LSMeansDiff	0.06	
		LSMeansDiffCI	-0.0783<->0.198	
	Folic Acid	LSMean	1.105	0.8386
		95% CI	0.566<->1.64	0.3<->1.38
		Range	(0.581-1.5)	(0.809-0.878)
		Pr(>F)	0.4341	
		LSMeansDiff	0.266	
		LSMeansDiffCI	-0.496<->1.03	
	Pantothenic Acid	LSMean	7.618	8.334
		95% CI	6.57<->8.66	7.29<->9.38
		Range	(7.32-8.07)	(7.49-8.93)
		Pr(>F)	0.1888	
		LSMeansDiff	-0.716	
		LSMeansDiffCI	-2.29<->0.854	
	Vitamin E	LSMean	3.323	3.213
		95% CI	2.71<->3.94	2.6<->3.83
		Range	(2.84-3.79)	(3.03-3.5)
		Pr(>F)	0.7368	
		LSMeansDiff	0.11	
		LSMeansDiffCI	-1.12<->1.34	

Loc	Analyte	Statistic	GR2E	RC82
SM	(mg/kg DW)			
	Thiamine	LSMean	3.332	2.943
		95% CI	2.79<->3.87	2.4<->3.48
		Range	(3.15-3.49)	(2.62-3.25)
		Pr(>F)	0.04499	
		LSMeansDiff	0.389	
		LSMeansDiffCI	0.0214<->0.756	
	Niacin	LSMean	28.67	21.84
		95% CI	26.7<->30.6	19.9<->23.8
		Range	(27.9-30.2)	(20.8-23)
		Pr(>F)	0.01989	
		LSMeansDiff	6.82	
		LSMeansDiffCI	4.11<->9.54	
	Pyridoxine	LSMean	2.713	2.38
		95% CI	2.3<->3.13	1.97<->2.79
		Range	(2.34-3.06)	(2.33-2.42)
		Pr(>F)	0.242	
		LSMeansDiff	0.333	
		LSMeansDiffCI	-0.539<->1.21	
	Folic Acid	LSMean	1.382	0.8888
		95% CI	0.171<->2.59	-0.323<->2.1
		Range	(0.746-2.56)	(0.658-1.03)
		Pr(>F)	0.4434	
		LSMeansDiff	0.493	
		LSMeansDiffCI	-1.75<->2.73	
	Pantothenic Acid	LSMean	11.18	10.41
		95% CI	9.95<->12.4	9.18<->11.6
		Range	(10.7-11.9)	(9.65-10.8)
		Pr(>F)	0.1366	
		LSMeansDiff	0.773	
		LSMeansDiffCI	-0.601<->2.15	
	Vitamin E	LSMean	3.007	2.9
		95% CI	2.57<->3.44	2.46<->3.34
		Range	(2.89-3.18)	(2.52-3.22)
		Pr(>F)	0.6791	
		LSMeansDiff	0.107	
		LSMeansDiffCI	-0.511<->0.725	

Table 39. Single-site analysis for grain amino acids: Muñoz

Loc	Analyte	Statistic	GR2E	RC82
MZ	(%DW)			
	Methionine	LSMean	0.1453	0.152
		95% CI	0.124<->0.167	0.13<->0.174
		Range	(0.132-0.161)	(0.144-0.166)
		Pr(>F)	0.6058	
		LSMeansDiff	-0.0067	
		LSMeansDiffCI	-0.0372<->0.0238	
	Lysine	LSMean	0.241	0.255
		95% CI	0.223<->0.259	0.237<->0.273
		Range	(0.236-0.245)	(0.242-0.271)
		Pr(>F)	0.2057	
		LSMeansDiff	-0.014	
		LSMeansDiffCI	-0.0466<->0.0186	
		LSMean	0.474	0.482
	Cystine	LSMean	0.128	0.1377
		95% CI	0.112<->0.144	0.122<->0.154
		Range	(0.117-0.139)	(0.132-0.148)
		Pr(>F)	0.3593	
		LSMeansDiff	-0.0097	
		LSMeansDiffCI	-0.0324<->0.0131	
	Tryptophan	LSMean	0.0596	0.0748
		95% CI	0.0546<->0.0645	0.0699<->0.0798
		Range	(0.056-0.064)	(0.074-0.077)
		Pr(>F)	0.02643	
		LSMeansDiff	-0.0153	
		LSMeansDiffCI	-0.0223<->-0.0082	
		LSMean	0.269	0.2843

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Year 2016 IR2016-05001: Nutrient Composition 2016) in the document entitled Studies Submitted in Support of the Food Safety Assessment of Provitamin A Biofortified GR2E Rice (GR2E-FFP-submitted-study-reports-PH

Statistical differences in 2016 pooled data

Table 13. Summary of statistically significant differences observed in the combined-site analysis of compositional parameters measured for GR2E and control PSB Rc82 rice

Analytical Component (units)	Event GR2E Mean[†]	PSB Rc82 Control Mean	Mean Difference (% of control)	Significance (p-Value)	Combined Literature Range
Grain Fatty Acids (% total fatty acids)					
Stearic (C18:0)	2.32	2.16	7.5%	0.0122	1.5–2.8
Arachidic (C20:0)	0.868	0.896	−3.1%	0.0494	0.4–0.79
Behenic (C22:0)	0.473	0.512	−7.7%	0.0205	0.2–0.82
Lignoceric (C24:0)	0.809	0.885	−8.6%	0.0272	0.4–1.34
Grain Vitamins (mg/kg dry weight)					
β-Carotene	1.37	<LOQ[a]			

[†] Values represent the least square mean of three replicate samples collected from each of four locations in the Philippines where event GR2E and control PSB Rc82 rice were grown during the dry season in 2016 (n=12 for each entry).
[a] LOQ = Limit of quantification, which for β-carotene was 0.05 mg/kg dry weight.

Statistical differences in Individual site data (i.e. Pr < 0.05)

Table 29. Single-site analysis for straw proximates, fibre, and minerals: Batac City

Loc	Analyte	Statistic	GR2E	RC82
BC	moisture (% FW)	LSMean	11.06	11.51
		95% CI	10.4<->11.7	10.9<->12.1
		Range	(10.9-11.3)	(10.9-11.9)
		N	3	3
		Pr(>F)	0.305	
		LSMeansDiff	-0.447	
		LSMeansDiffC	-1.35<->0.46	
		LSMeansPctD	-3.88	
		LSMeansPctD	-11.8<->4	
BC	crude fat (% DB)	LSMean	2.322	3.859
		95% CI	1.73<->2.91	3.27<->4.45
		Range	(2.11-2.54)	(3.48-4.38)
		N	3	3
		Pr(>F)	0.02887	
		LSMeansDiff	-1.54	
		LSMeansDiffC	-2.69<->-0.388	
		LSMeansPctD	-39.8	
		LSMeansPctD	-69.6<->-10.1	
BC	carbohydrates (% DB)	LSMean	66.93	66.89
		95% CI	64.3<->69.6	64.3<->69.5
		Range	(65.4-69)	(65.6-68)
		N	3	3
		Pr(>F)	0.9778	
		LSMeansDiff	0.0344	
		LSMeansDiffC	-4.68<->4.74	
		LSMeansPctD	0.0514	
		LSMeansPctD	-6.99<->7.09	

Loc	Analyte	Statistic	GR2E	RC82
BC	crude protein (% DB)	LSMean	5.603	5.188
		95% CI	4.26<->6.94	3.85<->6.53
		Range	(4.74-6.39)	(4.21-5.71)
		N	3	3
		Pr(>F)	0.6051	
		LSMeansDiff	0.415	
		LSMeansDiffC	-1.48<->2.31	
		LSMeansPctD	8	
		LSMeansPctD	-28.6<->44.6	
BC	ash (% DB)	LSMean	25.15	24.06
		95% CI	23.7<->26.6	22.6<->25.5
		Range	(24.1-25.7)	(23.4-25)
		N	3	3
		Pr(>F)	0.2311	
		LSMeansDiff	1.09	
		LSMeansDiffC	-1.66<->3.84	
		LSMeansPctD	4.52	
		LSMeansPctD	-6.92<->16	
BC	acid detergent fibre (% DB)	LSMean	55.77	51.63
		95% CI	51.6<->59.9	47.5<->55.8
		Range	(55-56.7)	(49.3-55.8)
		N	3	3
		Pr(>F)	0.1902	
		LSMeansDiff	4.15	
		LSMeansDiffC	-1.75<->10	
		LSMeansPctD	8.03	
		LSMeansPctD	-3.39<->19.5	

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Table 30. Single-site analysis for straw proximates, fibre, and minerals: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM	moisture (% FW)	LSMean	9.715	8.792
		95% CI	8.89<->10.5	7.97<->9.62
		Range	(9.24-10)	(8.12-9.25)
		N	3	3
		Pr(>F)	0.1592	
		LSMeansDiff	0.923	
		LSMeansDiffCI	-0.244<->2.09	
		LSMeansPctDiff	10.5	
		LSMeansPctDiffCI	-2.77<->23.8	
SM	crude fat (% DB)	LSMean	4.21	3.445
		95% CI	3.53<->4.89	2.76<->4.13
		Range	(3.75-4.59)	(3.18-3.61)
		N	3	3
		Pr(>F)	0.03431	
		LSMeansDiff	0.764	
		LSMeansDiffCI	0.139<->1.39	
		LSMeansPctDiff	22.2	
		LSMeansPctDiffCI	4.03<->40.3	
SM	carbohydrates (% DB)	LSMean	63.39	64.95
		95% CI	58<->68.8	59.6<->70.3
		Range	(60.5-66.2)	(62.1-67.1)
		N	3	3
		Pr(>F)	0.3172	
		LSMeansDiff	-1.56	
		LSMeansDiffCI	-6.65<->3.52	
		LSMeansPctDiff	-2.41	
		LSMeansPctDiffCI	-10.2<->5.43	
SM	crude fibre (% DB)	LSMean	28.56	26.28
		95% CI	27.7<->29.4	25.4<->27.2
		Range	(28.2-29.2)	(26-26.9)
		N	3	3
		Pr(>F)	0.03655	
		LSMeansDiff	2.28	
		LSMeansDiffCI	1.03<->3.52	
		LSMeansPctDiff	8.66	
		LSMeansPctDiffCI	3.93<->13.4	
SM		LSMean	0.3451	0.3105

Loc	Analyte	Statistic	GR2E	RC82
SM	crude protein (% DB)	LSMean	9.492	9.596
		95% CI	7.94<->11	8.04<->11.1
		Range	(8.33-10.2)	(8.53-10.2)
		N	3	3
		Pr(>F)	0.908	
		LSMeansDiff	-0.103	
		LSMeansDiffCI	-2.3<->2.09	
		LSMeansPctDiff	-1.08	
		LSMeansPctDiffCI	-24<->21.8	
SM	ash (% DB)	LSMean	22.91	22.01
		95% CI	18.5<->27.3	17.6<->26.4
		Range	(21.2-24.7)	(20.6-24.2)
		N	3	3
		Pr(>F)	0.116	
		LSMeansDiff	0.901	
		LSMeansDiffCI	-0.549<->2.35	
		LSMeansPctDiff	4.09	
		LSMeansPctDiffCI	-2.49<->10.7	
SM	acid detergent fibre (% DB)	LSMean	50.58	45.87
		95% CI	48.3<->52.8	43.6<->48.1
		Range	(48.8-51.6)	(44.7-47.2)
		N	3	3
		Pr(>F)	0.04981	
		LSMeansDiff	4.71	
		LSMeansDiffCI	0.0097<->9.41	
		LSMeansPctDiff	10.3	
		LSMeansPctDiffCI	0.0211<->20.5	
SM	neutral detergent fibre (% DB)	LSMean	61.45	57.23
		95% CI	57.6<->65.3	53.4<->61.1
		Range	(58.6-63)	(56.1-59.2)
		N	3	3
		Pr(>F)	0.06157	
		LSMeansDiff	4.22	
		LSMeansDiffCI	-0.507<->8.95	
		LSMeansPctDiff	7.38	
		LSMeansPctDiffCI	-0.886<->15.6	
SM		LSMean	0.329	0.3205

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Table 32. Single-site analysis for grain proximates: Los Baños

Loc	Analyte	Statistic	GR2E	RC82
LB	crude protein (% DB)	LSMean	8.158	8.219
		95% CI	7.33<->8.98	7.39<->9.05
		Range	(7.66-8.8)	(8.07-8.46)
		N	3	3
		Pr(>F)	0.8058	
		LSMeansDiff	-0.0612	
		LSMeansDiffCI	-1<->0.879	
		LSMeansPctDiff	-0.745	
		LSMeansPctDiffCI	-12.2<->10.7	
LB	ash (% DB)	LSMean	5.755	5.666
		95% CI	5.36<->6.15	5.27<->6.06
		Range	(5.56-5.86)	(5.49-5.76)
		N	3	3
		Pr(>F)	0.02138	
		LSMeansDiff	0.0895	
		LSMeansDiffCI	0.0323<->0.147	
		LSMeansPctDiff	1.58	
		LSMeansPctDiffCI	0.57<->2.59	
LB	amylose (% DB)	LSMean	16.25	17.83
		95% CI	13.6<->18.9	15.2<->20.5
		Range	(14.2-18.6)	(16.9-18.6)
		N	3	3
		Pr(>F)	0.3656	
		LSMeansDiff	-1.58	
		LSMeansDiffCI	-5.35<->2.19	
		LSMeansPctDiff	-8.84	
		LSMeansPctDiffCI	-30<->12.3	
LB	moisture (% FW)	LSMean	11.49	11.38
		95% CI	11<->12	10.8<->11.9
		Range	(11.3-11.6)	(11.1-11.9)
		N	3	3
		Pr(>F)	0.6387	
		LSMeansDiff	0.113	
		LSMeansDiffCI	-0.775<->1	
		LSMeansPctDiff	0.995	
		LSMeansPctDiffCI	-6.81<->8.8	
LB	crude fibre (% DB)	LSMean	10.59	10.45
		95% CI	9.73<->11.5	9.59<->11.3
		Range	(10.1-11.2)	(10.1-11)
		N	3	3
		Pr(>F)	0.7732	
		LSMeansDiff	0.144	
		LSMeansDiffCI	-1.07<->1.36	
		LSMeansPctDiff	1.38	
		LSMeansPctDiffCI	-10.3<->13	
LB	total dietary fibre (% DB)	LSMean	15.9	13.69
		95% CI	13.8<->18	11.6<->15.7
		Range	(14.9-17)	(13-14.4)
		N	3	3
		Pr(>F)	0.007874	
		LSMeansDiff	2.21	
		LSMeansDiffCI	1.36<->3.06	
		LSMeansPctDiff	16.1	
		LSMeansPctDiffCI	9.94<->22.3	

Loc	Analyte	Statistic	GR2E	RC82
LB	crude fat (% DB)	LSMean	1.351	1.434
		95% CI	0.808<->1.89	0.891<->1.98
		Range	(1.11-1.54)	(1.16-1.93)
		N	3	3
		Pr(>F)	0.7941	
		LSMeansDiff	-0.0823	
		LSMeansDiffCI	-0.85<->0.686	
		LSMeansPctDiff	-5.74	
		LSMeansPctDiffCI	-59.3<->47.8	
LB	carbohydrates (% DB)	LSMean	84.74	84.68
		95% CI	83.9<->85.6	83.8<->85.5
		Range	(84.1-85.4)	(84.3-84.9)
		N	3	3
		Pr(>F)	0.9103	
		LSMeansDiff	0.054	
		LSMeansDiffCI	-1.12<->1.23	
		LSMeansPctDiff	0.0638	
		LSMeansPctDiffCI	-1.33<->1.45	
LB	starch (% DB)	LSMean	67.13	67.67
		95% CI	61.5<->72.7	62.1<->73.3
		Range	(62.6-71.5)	(66-69.3)
		N	3	3
		Pr(>F)	0.8354	
		LSMeansDiff	-0.536	
		LSMeansDiffCI	-10.3<->9.24	
		LSMeansPctDiff	-0.792	
		LSMeansPctDiffCI	-15.2<->13.6	
LB	acid detergent fibre (% DB)	LSMean	16.34	16.28
		95% CI	15<->17.7	14.9<->17.7
		Range	(15.7-16.8)	(15.6-17.5)
		N	3	3
		Pr(>F)	0.9353	
		LSMeansDiff	0.0645	
		LSMeansDiffCI	-1.89<->2.02	
		LSMeansPctDiff	0.396	
		LSMeansPctDiffCI	-11.6<->12.4	
LB	neutral detergent fibre (% DB)	LSMean	18.41	17.57
		95% CI	17.6<->19.2	16.8<->18.3
		Range	(18.2-18.6)	(16.8-18)
		N	3	3
		Pr(>F)	0.165	
		LSMeansDiff	0.845	
		LSMeansDiffCI	-0.248<->1.94	
		LSMeansPctDiff	4.81	
		LSMeansPctDiffCI	-1.41<->11	

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Table 34. Single-site analysis for grain proximates: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM	crude protein (% DB)	LSMean	10.02	10.2
		95% CI	9.61<->10.4	9.79<->10.6
		Range	(9.77-10.3)	(9.94-10.4)
		N	3	3
		Pr(>F)	0.4762	
		LSMeansDiff	-0.179	
		LSMeansDiffCI	-0.752<->0.394	
		LSMeansPctDiff	-1.76	
		LSMeansPctDiffCI	-7.38<->3.86	
SM	ash (% DB)	LSMean	6.938	6.894
		95% CI	6.51<->7.37	6.46<->7.33
		Range	(6.64-7.09)	(6.75-7.06)
		N	3	3
		Pr(>F)	0.6757	
		LSMeansDiff	0.0433	
		LSMeansDiffCI	-0.341<->0.427	
		LSMeansPctDiff	0.628	
		LSMeansPctDiffCI	-4.94<->6.2	
SM	amylose (% DB)	LSMean	10.67	9.988
		95% CI	9.12<->12.2	8.43<->11.5
		Range	(9.79-11.3)	(8.92-11.1)
		N	3	3
		Pr(>F)	0.48	
		LSMeansDiff	0.682	
		LSMeansDiffCI	-1.52<->2.88	
		LSMeansPctDiff	6.83	
		LSMeansPctDiffCI	-15.2<->28.8	
SM	moisture (% FW)	LSMean	11.32	11.77
		95% CI	10.9<->11.7	11.3<->12.2
		Range	(11.1-11.6)	(11.6-12)
		N	3	3
		Pr(>F)	0.1574	
		LSMeansDiff	-0.452	
		LSMeansDiffCI	-1.33<->0.427	
		LSMeansPctDiff	-3.84	
		LSMeansPctDiffCI	-11.3<->3.63	
SM	crude fibre (% DB)	LSMean	12.48	11.13
		95% CI	12.1<->12.8	10.8<->11.5
		Range	(12.2-12.7)	(10.9-11.3)
		N	3	3
		Pr(>F)	0.01734	
		LSMeansDiff	1.35	
		LSMeansDiffCI	0.851<->1.85	
		LSMeansPctDiff	12.1	
		LSMeansPctDiffCI	7.65<->16.7	
SM		LSMean	17.72	17.02

Loc	Analyte	Statistic	GR2E	RC82
SM	crude fat (% DB)	LSMean	1.758	1.633
		95% CI	1.55<->1.96	1.43<->1.84
		Range	(1.64-1.88)	(1.5-1.77)
		N	3	3
		Pr(>F)	0.3549	
		LSMeansDiff	0.126	
		LSMeansDiffCI	-0.166<->0.418	
		LSMeansPctDiff	7.69	
		LSMeansPctDiffCI	-10.2<->25.6	
SM	carbohydrates (% DB)	LSMean	81.29	81.28
		95% CI	80.8<->81.8	80.8<->81.8
		Range	(81-81.5)	(81.1-81.5)
		N	3	3
		Pr(>F)	0.8962	
		LSMeansDiff	0.0106	
		LSMeansDiffCI	-0.299<->0.321	
		LSMeansPctDiff	0.013	
		LSMeansPctDiffCI	-0.368<->0.394	
SM	starch (% DB)	LSMean	60.54	64.04
		95% CI	50.7<->70.4	54.2<->73.9
		Range	(56.4-65.3)	(60.7-67.8)
		N	3	3
		Pr(>F)	0.0231	
		LSMeansDiff	-3.51	
		LSMeansDiffCI	-5.84<->-1.17	
		LSMeansPctDiff	-5.47	
		LSMeansPctDiffCI	-9.12<->-1.83	
SM	acid detergent fibre (% DB)	LSMean	18.7	18.67
		95% CI	17.5<->19.9	17.4<->19.9
		Range	(17.7-19.9)	(18.5-18.8)
		N	3	3
		Pr(>F)	0.9586	
		LSMeansDiff	0.0329	
		LSMeansDiffCI	-2.38<->2.45	
		LSMeansPctDiff	0.176	
		LSMeansPctDiffCI	-12.8<->13.1	
SM	neutral detergent fibre (% DB)	LSMean	20.94	18.28
		95% CI	19.6<->22.3	16.9<->19.6
		Range	(20.2-22.1)	(17.6-18.7)
		N	3	3
		Pr(>F)	0.03562	
		LSMeansDiff	2.65	
		LSMeansDiffCI	0.439<->4.87	
		LSMeansPctDiff	14.5	
		LSMeansPctDiffCI	2.4<->26.6	

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Table 38. Single-site analysis for grain minerals: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM	calcium (mg/100 g DB)	LSMean	33.47	27.08
		95% CI	30.1<->36.9	23.7<->30.5
		Range	(31.6-35)	(25-29.8)
		N	3	3
		Pr(>F)	0.06593	
		LSMeansDiff	6.39	
		LSMeansDiffCI	1.59<->11.2	
		LSMeansPctDiff	23.6	
		LSMeansPctDiffCI	5.88<->41.3	
SM	iron (mg/100 g DB)	LSMean	3.609	3.384
		95% CI	2.89<->4.32	2.67<->4.1
		Range	(3.24-4.07)	(2.89-3.81)
		N	3	3
		Pr(>F)	0.5997	
		LSMeansDiff	0.225	
		LSMeansDiffCI	-0.785<->1.23	
		LSMeansPctDiff	6.64	
		LSMeansPctDiffCI	-23.2<->36.5	
SM	manganese (mg/100 g DB)	LSMean	8.063	6.774
		95% CI	7.16<->8.96	5.87<->7.68
		Range	(7.58-8.39)	(6.15-7.48)
		N	3	3
		Pr(>F)	0.107	
		LSMeansDiff	1.29	
		LSMeansDiffCI	0.0134<->2.56	
		LSMeansPctDiff	19	
		LSMeansPctDiffCI	0.198<->37.8	
SM	potassium (mg/100 g DB)	LSMean	436.1	410.6
		95% CI	399<->473	374<->447
		Range	(409-455)	(393-435)
		N	3	3
		Pr(>F)	0.3076	
		LSMeansDiff	25.5	
		LSMeansDiffCI	-26.7<->77.7	
		LSMeansPctDiff	6.22	
		LSMeansPctDiffCI	-6.5<->18.9	
SM	zinc (mg/100 g DB)	LSMean	3.113	2.598
		95% CI	2.8<->3.42	2.29<->2.91
		Range	(2.93-3.21)	(2.48-2.78)
		N	3	3
		Pr(>F)	0.02127	
		LSMeansDiff	0.516	
		LSMeansDiffCI	0.187<->0.844	
		LSMeansPctDiff	19.8	
		LSMeansPctDiffCI	7.19<->32.5	
SM	copper (mg/100 g DB)	LSMean	0.3994	0.4016
		95% CI	0.296<->0.502	0.298<->0.505
		Range	(0.395-0.406)	(0.298-0.469)
		N	3	3
		Pr(>F)	0.9701	
		LSMeansDiff	-0.0022	
		LSMeansDiffCI	-0.226<->0.222	
		LSMeansPctDiff	-0.548	
		LSMeansPctDiffCI	-56.2<->55.2	
SM	magnesium (mg/100 g DB)	LSMean	153.4	147.7
		95% CI	143<->164	137<->158
		Range	(148-158)	(143-157)
		N	3	3
		Pr(>F)	0.4053	
		LSMeansDiff	5.62	
		LSMeansDiffCI	-9.3<->20.6	
		LSMeansPctDiff	3.81	
		LSMeansPctDiffCI	-6.3<->13.9	
SM	phosphorus (mg/100 g DB)	LSMean	391.2	363.9
		95% CI	367<->415	340<->388
		Range	(379-403)	(349-383)
		N	3	3
		Pr(>F)	0.1535	
		LSMeansDiff	27.4	
		LSMeansDiffCI	-6.42<->61.1	
		LSMeansPctDiff	7.52	
		LSMeansPctDiffCI	-1.77<->16.8	
SM	sodium (mg/100 g DB)	LSMean	0.7952	0.7139
		95% CI	0.584<->1.01	0.503<->0.925
		Range	(0.682-0.893)	(0.543-0.839)
		N	3	3
		Pr(>F)	0.5284	
		LSMeansDiff	0.0813	
		LSMeansDiffCI	-0.217<->0.38	
		LSMeansPctDiff	11.4	
		LSMeansPctDiffCI	-30.4<->53.2	

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Table 39. Single-site analysis for grain fatty acids: Batac City

Loc	Analyte	Statistic	GR2E	RC82
BC	caprylic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	lauric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	pentadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	palmitic (% Total FA)	LSMean	19.26	18.92
		95% CI	18.6<->20	18.2<->19.6
		Range	(18.8-20)	(18.8-19)
		N	3	3
		Pr(>F)	0.4353	
		LSMeansDiff	0.342	
		LSMeansDiffCI	-0.64<->1.33	
		LSMeansPctDiff	1.81	
		LSMeansPctDiffCI	-3.38<->7.01	
BC	heptadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	stearic (% Total FA)	LSMean	2.309	2.091
		95% CI	2.23<->2.39	2.01<->2.17
		Range	(2.26-2.38)	(2.06-2.11)
		N	3	3
		Pr(>F)	0.02038	
		LSMeansDiff	0.218	
		LSMeansDiffCI	0.0819<->0.353	
		LSMeansPctDiff	10.4	
		LSMeansPctDiffCI	3.92<->16.9	
BC	linoleic (% Total FA)	LSMean	32.9	34.74
		95% CI	32.1<->33.7	34<->35.5
		Range	(32.4-33.6)	(34.5-35)
		N	3	3
		Pr(>F)	0.04124	
		LSMeansDiff	-1.84	
		LSMeansDiffCI	-2.9<->-0.767	
		LSMeansPctDiff	-5.28	
		LSMeansPctDiffCI	-8.36<->-2.21	

Loc	Analyte	Statistic	GR2E	RC82
BC	capric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	myristic (% Total FA)	LSMean	0.3696	0.3756
		95% CI	0.331<->0.408	0.337<->0.414
		Range	(0.348-0.396)	(0.349-0.395)
		N	3	3
		Pr(>F)	0.789	
		LSMeansDiff	-0.006	
		LSMeansDiffCI	-0.0605<->0.0485	
		LSMeansPctDiff	-1.6	
		LSMeansPctDiffCI	-16.1<->12.9	
BC	palmitoleic (% Total FA)	LSMean	0.1755	0.1724
		95% CI	0.166<->0.185	0.163<->0.182
		Range	(0.172-0.181)	(0.168-0.175)
		N	3	3
		Pr(>F)	0.1501	
		LSMeansDiff	0.0031	
		LSMeansDiffCI	-0.0027<->0.0089	
		LSMeansPctDiff	1.8	
		LSMeansPctDiffCI	-1.57<->5.16	
BC	oleic (% Total FA)	LSMean	40.09	38.86
		95% CI	38.7<->41.5	37.5<->40.2
		Range	(38.8-40.8)	(38.4-39.3)
		N	3	3
		Pr(>F)	0.2193	
		LSMeansDiff	1.23	
		LSMeansDiffCI	-0.705<->3.17	
		LSMeansPctDiff	3.17	
		LSMeansPctDiffCI	-1.81<->8.16	
BC	linolenic (% Total FA)	LSMean	2.201	2.017
		95% CI	2<->2.4	1.82<->2.22
		Range	(2-2.31)	(2.01-2.03)
		N	3	3
		Pr(>F)	0.1934	
		LSMeansDiff	0.184	
		LSMeansDiffCI	-0.226<->0.594	
		LSMeansPctDiff	9.12	
		LSMeansPctDiffCI	-11.2<->29.5	

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Table 40. Single-site analysis for grain fatty acids: Los Baños

Loc	Analyte	Statistic	GR2E	RC82
LB	caprylic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
LB	lauric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
LB	pentadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
LB	palmitic (% Total FA)	LSMean	20.14	18.73
		95% CI	19.8<->20.5	18.4<->19
		Range	(20.1-20.2)	(18.5-19)
		N	3	3
		Pr(>F)	0.01235	
		LSMeansDiff	1.41	
		LSMeansDiffCI	0.974<->1.85	
		LSMeansPctDiff	7.55	
		LSMeansPctDiffCI	5.2<->9.9	
LB	heptadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
LB	stearic (% Total FA)	LSMean	2.009	1.81
		95% CI	1.84<->2.17	1.65<->1.98
		Range	(1.95-2.05)	(1.71-1.86)
		N	3	3
		Pr(>F)	0.009383	
		LSMeansDiff	0.199	
		LSMeansDiffCI	0.115<->0.282	
		LSMeansPctDiff	11	
		LSMeansPctDiffCI	6.37<->15.6	
LB	linoleic (% Total FA)	LSMean	34.04	34.28
		95% CI	33<->35.1	33.3<->35.3
		Range	(33.7-34.4)	(33.7-35)
		N	3	3
		Pr(>F)	0.4934	
		LSMeansDiff	-0.244	
		LSMeansDiffCI	-1.5<->1.02	
		LSMeansPctDiff	-0.711	
		LSMeansPctDiffCI	-4.39<->2.97	
LB	arachidic (% Total FA)	LSMean	0.7623	0.7717
		95% CI	0.711<->0.814	0.72<->0.823
		Range	(0.739-0.781)	(0.743-0.79)
		N	3	3
		Pr(>F)	0.2947	
		LSMeansDiff	-0.0094	
		LSMeansDiffCI	-0.0381<->0.0193	
		LSMeansPctDiff	-1.22	
		LSMeansPctDiffCI	-4.94<->2.5	

Loc	Analyte	Statistic	GR2E	RC82
LB	capric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
LB	myristic (% Total FA)	LSMean	0.3492	0.3068
		95% CI	0.345<->0.354	0.302<->0.311
		Range	(0.346-0.352)	(0.305-0.309)
		N	3	3
		Pr(>F)	0.002742	
		LSMeansDiff	0.0424	
		LSMeansDiffCI	0.0363<->0.0486	
		LSMeansPctDiff	13.8	
		LSMeansPctDiffCI	11.8<->15.8	
LB	palmitoleic (% Total FA)	LSMean	0.1621	0.1615
		95% CI	0.149<->0.175	0.148<->0.175
		Range	(0.16-0.166)	(0.153-0.172)
		N	3	3
		Pr(>F)	0.8845	
		LSMeansDiff	6.00E-04	
		LSMeansDiffCI	-0.0142<->0.0153	
		LSMeansPctDiff	0.372	
		LSMeansPctDiffCI	-8.79<->9.47	
LB	oleic (% Total FA)	LSMean	38.99	40.12
		95% CI	37.9<->40.1	39<->41.2
		Range	(38.7-39.4)	(39.2-40.8)
		N	3	3
		Pr(>F)	0.1032	
		LSMeansDiff	-1.13	
		LSMeansDiffCI	-2.82<->0.565	
		LSMeansPctDiff	-2.81	
		LSMeansPctDiffCI	-7.04<->1.41	
LB	linolenic (% Total FA)	LSMean	1.85	1.968
		95% CI	1.76<->1.94	1.88<->2.06
		Range	(1.82-1.88)	(1.92-2.05)
		N	3	3
		Pr(>F)	0.1086	
		LSMeansDiff	-0.118	
		LSMeansDiffCI	-0.301<->0.0647	
		LSMeansPctDiff	-6.01	
		LSMeansPctDiffCI	-15.3<->3.29	
LB	eicosenoic (% Total FA)	LSMean	0.4371	0.4901
		95% CI	0.411<->0.463	0.464<->0.516
		Range	(0.436-0.44)	(0.475-0.516)
		N	3	3
		Pr(>F)	0.04659	
		LSMeansDiff	-0.0531	
		LSMeansDiffCI	-0.104<->-0.002	
		LSMeansPctDiff	-10.8	
		LSMeansPctDiffCI	-21.2<->-0.408	

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Table 41. Single-site analysis for grain fatty acids: Muñoz

Loc	Analyte	Statistic	GR2E	RC82
MZ	caprylic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	lauric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	pentadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	palmitic (% Total FA)	LSMean	19.45	17.34
		95% CI	17.9<->21	15.8<->18.9
		Range	(19.2-19.7)	(15.8-18.3)
		N	3	3
		Pr(>F)	0.1131	
		LSMeansDiff	2.1	
		LSMeansDiffCI	-1.23<->5.43	
		LSMeansPctDiff	12.1	
		LSMeansPctDiffCI	-7.08<->31.3	
MZ	heptadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	stearic (% Total FA)	LSMean	2.235	2.088
		95% CI	2.17<->2.3	2.02<->2.15
		Range	(2.19-2.29)	(2.06-2.12)
		N	3	3
		Pr(>F)	0.04302	
		LSMeansDiff	0.147	
		LSMeansDiffCI	0.0114<->0.283	
		LSMeansPctDiff	7.06	
		LSMeansPctDiffCI	0.546<->13.6	
MZ	linoleic (% Total FA)	LSMean	32.89	31.89
		95% CI	31<->34.7	30.1<->33.7
		Range	(32.5-33.1)	(30.1-33)
		N	3	3
		Pr(>F)	0.3997	
		LSMeansDiff	0.995	
		LSMeansDiffCI	-1.61<->3.6	
		LSMeansPctDiff	3.12	
		LSMeansPctDiffCI	-5.04<->11.3	
MZ	arachidic (% Total FA)	LSMean	0.8485	0.8761
		95% CI	0.814<->0.883	0.842<->0.91
		Range	(0.821-0.876)	(0.867-0.883)
		N	3	3
		Pr(>F)	0.1729	
		LSMeansDiff	-0.0275	
		LSMeansDiffCI	-0.0845<->0.0294	
		LSMeansPctDiff	-3.14	
		LSMeansPctDiffCI	-9.65<->3.36	
MZ	eicosadienoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	arachidonic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	erucic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	lignoceric (% Total FA)	LSMean	0.7361	0.8206
		95% CI	0.68<->0.792	0.764<->0.877
		Range	(0.687-0.78)	(0.805-0.839)
		N	3	3
		Pr(>F)	0.09873	
		LSMeansDiff	-0.0845	
		LSMeansDiffCI	-0.164<->-0.0048	
		LSMeansPctDiff	-10.3	
		LSMeansPctDiffCI	-20<->-0.585	

Loc	Analyte	Statistic	GR2E	RC82
MZ	capric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	myristic (% Total FA)	LSMean	0.358	0.2926
		95% CI	0.317<->0.399	0.252<->0.333
		Range	(0.355-0.361)	(0.251-0.315)
		N	3	3
		Pr(>F)	0.08735	
		LSMeansDiff	0.0654	
		LSMeansDiffCI	0.0079<->0.123	
		LSMeansPctDiff	22.4	
		LSMeansPctDiffCI	2.7<->42	
MZ	palmitoleic (% Total FA)	LSMean	0.1764	0.1747
		95% CI	0.172<->0.181	0.17<->0.179
		Range	(0.175-0.179)	(0.172-0.179)
		N	3	3
		Pr(>F)	0.5465	
		LSMeansDiff	0.0017	
		LSMeansDiffCI	-0.0049<->0.0083	
		LSMeansPctDiff	0.973	
		LSMeansPctDiffCI	-2.8<->4.75	
MZ	oleic (% Total FA)	LSMean	40.75	43.25
		95% CI	38.1<->43.4	40.6<->45.9
		Range	(40.4-41.3)	(41.6-45.9)
		N	3	3
		Pr(>F)	0.2059	
		LSMeansDiff	-2.5	
		LSMeansDiffCI	-6.27<->1.26	
		LSMeansPctDiff	-5.79	
		LSMeansPctDiffCI	-14.5<->2.91	
MZ	linolenic (% Total FA)	LSMean	1.68	2.148
		95% CI	1.01<->2.35	1.48<->2.82
		Range	(1.54-1.79)	(1.64-2.7)
		N	3	3
		Pr(>F)	0.1908	
		LSMeansDiff	-0.467	
		LSMeansDiffCI	-1.5<->0.565	
		LSMeansPctDiff	-21.8	
		LSMeansPctDiffCI	-69.8<->26.3	
MZ	eicosenoic (% Total FA)	LSMean	0.4445	0.6068
		95% CI	0.28<->0.61	0.442<->0.772
		Range	(0.437-0.459)	(0.509-0.773)
		N	3	3
		Pr(>F)	0.1933	
		LSMeansDiff	-0.162	
		LSMeansDiffCI	-0.396<->0.0711	
		LSMeansPctDiff	-26.7	
		LSMeansPctDiffCI	-65.2<->11.7	
MZ	eicosatrienoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	behenic (% Total FA)	LSMean	0.4388	0.5023
		95% CI	0.394<->0.484	0.457<->0.548
		Range	(0.407-0.46)	(0.485-0.522)
		N	3	3
		Pr(>F)	0.03412	
		LSMeansDiff	-0.0635	
		LSMeansDiffCI	-0.115<->-0.0117	
		LSMeansPctDiff	-12.6	
		LSMeansPctDiffCI	-23<->-2.33	
MZ	nervonic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0

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Table 42. Single-site analysis for grain fatty acids: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM	caprylic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	lauric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	pentadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	palmitic (% Total FA)	LSMean	19.33	18.75
		95% CI	18.7<->20	18.1<->19.4
		Range	(19.1-19.5)	(18.3-19)
		N	3	3
		Pr(>F)	0.04087	
		LSMeansDiff	0.575	
		LSMeansDiffCI	0.0588<->1.09	
		LSMeansPctDiff	3.06	
		LSMeansPctDiffCI	0.314<->5.81	
SM	heptadecanoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	stearic (% Total FA)	LSMean	2.73	2.645
		95% CI	2.63<->2.83	2.54<->2.75
		Range	(2.64-2.78)	(2.58-2.68)
		N	3	3
		Pr(>F)	0.2507	
		LSMeansDiff	0.0846	
		LSMeansDiffCI	-0.0622<->0.231	
		LSMeansPctDiff	3.2	
		LSMeansPctDiffCI	-2.35<->8.75	
SM	linoleic (% Total FA)	LSMean	32.81	33.23
		95% CI	32.4<->33.3	32.8<->33.7
		Range	(32.7-33)	(32.9-33.6)
		N	3	3
		Pr(>F)	0.194	
		LSMeansDiff	-0.418	
		LSMeansDiffCI	-1.35<->0.516	
		LSMeansPctDiff	-1.26	
		LSMeansPctDiffCI	-4.07<->1.55	
SM	arachidic (% Total FA)	LSMean	0.9639	1.016
		95% CI	0.939<->0.989	0.991<->1.04
		Range	(0.948-0.989)	(1.01-1.02)
		N	3	3
		Pr(>F)	0.05537	
		LSMeansDiff	-0.0516	
		LSMeansDiffCI	-0.0868<->-0.0164	
		LSMeansPctDiff	-5.08	
		LSMeansPctDiffCI	-8.55<->-1.61	
SM	eicosadienoic (% Total FA)	Mean	0.126	NaN
		Range	(0.126-0.126)	(Inf--Inf)
		N	1	1
SM	arachidonic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	erucic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	lignoceric (% Total FA)	LSMean	0.8892	0.9185
		95% CI	0.728<->1.05	0.757<->1.08
		Range	(0.85-0.957)	(0.866-1)
		N	3	3
		Pr(>F)	0.07569	
		LSMeansDiff	-0.0294	
		LSMeansDiffCI	-0.0663<->0.0075	
		LSMeansPctDiff	-3.2	
		LSMeansPctDiffCI	-7.22<->0.817	

Loc	Analyte	Statistic	GR2E	RC82
SM	capric (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	myristic (% Total FA)	LSMean	0.5019	0.4753
		95% CI	0.484<->0.52	0.457<->0.493
		Range	(0.499-0.504)	(0.461-0.492)
		N	3	3
		Pr(>F)	0.08629	
		LSMeansDiff	0.0266	
		LSMeansDiffCI	-0.0094<->0.0626	
		LSMeansPctDiff	5.6	
		LSMeansPctDiffCI	-1.98<->13.2	
SM	palmitoleic (% Total FA)	LSMean	0.1996	0.1956
		95% CI	0.192<->0.207	0.188<->0.203
		Range	(0.196-0.206)	(0.191-0.2)
		N	3	3
		Pr(>F)	0.4083	
		LSMeansDiff	0.0041	
		LSMeansDiffCI	-0.0068<->0.0149	
		LSMeansPctDiff	2.1	
		LSMeansPctDiffCI	-3.48<->7.62	
SM	oleic (% Total FA)	LSMean	39.96	40.17
		95% CI	38.9<->41	39.1<->41.2
		Range	(39.6-40.3)	(39.5-40.7)
		N	3	3
		Pr(>F)	0.3496	
		LSMeansDiff	-0.207	
		LSMeansDiffCI	-0.943<->0.529	
		LSMeansPctDiff	-0.516	
		LSMeansPctDiffCI	-2.35<->1.32	
SM	linolenic (% Total FA)	LSMean	1.637	1.601
		95% CI	1.34<->1.93	1.31<->1.9
		Range	(1.6-1.68)	(1.44-1.9)
		N	3	3
		Pr(>F)	0.829	
		LSMeansDiff	0.0368	
		LSMeansDiffCI	-0.38<->0.453	
		LSMeansPctDiff	2.3	
		LSMeansPctDiffCI	-23.7<->28.3	
SM	eicosenoic (% Total FA)	LSMean	0.4347	0.4745
		95% CI	0.37<->0.5	0.409<->0.54
		Range	(0.405-0.451)	(0.443-0.521)
		N	3	3
		Pr(>F)	0.1377	
		LSMeansDiff	-0.0398	
		LSMeansDiffCI	-0.111<->0.0313	
		LSMeansPctDiff	-8.39	
		LSMeansPctDiffCI	-23.4<->6.6	
SM	eicosatrienoic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	behenic (% Total FA)	LSMean	0.4994	0.5222
		95% CI	0.441<->0.558	0.464<->0.58
		Range	(0.477-0.527)	(0.502-0.545)
		N	3	3
		Pr(>F)	0.0094	
		LSMeansDiff	-0.0228	
		LSMeansDiffCI	-0.0324<->-0.0132	
		LSMeansPctDiff	-4.37	
		LSMeansPctDiffCI	-6.2<->-2.53	
SM	nervonic (% Total FA)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0

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Table 44. Single-site analysis for grain amino acids: Los Baños

Loc	Analyte	Statistic	GR2E	RC82
LB		LSMean	171.7	162
		95% CI	153<->191	143<->181
		Range	(163-177)	(153-174)
		N	3	3
	methionine (mg/100 g DB)	Pr(>F)	0.1236	
		Conditional R2	0.816	
		LSMeansDiff	9.67	
		LSMeansDiffCI	-6.5<->25.8	
		LSMeansPctDiff	5.97	
		LSMeansPctDiffCI	-4.01<->15.9	
LB		LSMean	304.3	302.9
		95% CI	253<->355	254<->352
		Range	(275-329)	(285-317)
		N	3	3
	lysine (mg/100 g DB)	Pr(>F)	0.9165	
		Conditional R2	0.801	
		LSMeansDiff	1.46	
		LSMeansDiffCI	-81.8<->84.8	
		LSMeansPctDiff	0.484	
		LSMeansPctDiffCI	-27<->28	
LB		LSMean	577	575.7
		95% CI	512<->642	511<->640
		Range	(547-614)	(557-599)
		N	3	3
	arginine (mg/100 g DB)	Pr(>F)	0.8721	
		Conditional R2	0.901	
		LSMeansDiff	1.33	
		LSMeansDiffCI	-30.1<->32.8	
		LSMeansPctDiff	0.232	
		LSMeansPctDiffCI	-5.23<->5.7	
LB		LSMean	210.7	216.3
		95% CI	183<->238	189<->244
		Range	(203-223)	(206-229)
		N	3	3
	histidine (mg/100 g DB)	Pr(>F)	0.0599	
		Conditional R2	0.977	
		LSMeansDiff	-5.67	
		LSMeansDiffCI	-11.9<->0.585	
		LSMeansPctDiff	-2.62	
		LSMeansPctDiffCI	-5.51<->0.27	
LB		LSMean	668.3	677.7
		95% CI	577<->760	586<->769
		Range	(628-713)	(641-729)
		N	3	3
	leucine (mg/100 g DB)	Pr(>F)	0.6394	
		Conditional R2	0.78	
		LSMeansDiff	-9.33	
		LSMeansDiffCI	-82.8<->64.1	
		LSMeansPctDiff	-1.38	
		LSMeansPctDiffCI	-12.2<->9.46	
LB		LSMean	449	434
		95% CI	376<->522	361<->507
		Range	(424-478)	(376-483)
		N	3	3
	phenylalanine (mg/100 g DB)	Pr(>F)	0.6379	
		Conditional R2	0.411	
		LSMeansDiff	15	
		LSMeansDiffCI	-102<->132	
		LSMeansPctDiff	3.46	
		LSMeansPctDiffCI	-23.6<->30.5	
LB		LSMean	473.7	482.7

Loc	Analyte	Statistic	GR2E	RC82
LB		LSMean	167.3	160.7
		95% CI	149<->186	142<->179
		Range	(158-172)	(152-176)
		N	3	3
	cystine (mg/100 g DB)	Pr(>F)	0.4444	
		Conditional R2	0.446	
		LSMeansDiff	6.67	
		LSMeansDiffCI	-23.7<->37	
		LSMeansPctDiff	4.15	
		LSMeansPctDiffCI	-14.7<->23	
LB		LSMean	72.87	70.07
		95% CI	63.3<->82.4	60.5<->79.6
		Range	(64.4-79.4)	(66.2-73.1)
		N	3	3
	tryptophan (mg/100 g DB)	Pr(>F)	0.6241	
		Conditional R2	0.0617	
		LSMeansDiff	2.8	
		LSMeansDiffCI	-10.8<->16.4	
		LSMeansPctDiff	4	
		LSMeansPctDiffCI	-15.3<->23.3	
LB		LSMean	339.3	342.7
		95% CI	293<->385	297<->389
		Range	(321-362)	(323-368)
		N	3	3
	isoleucine (mg/100 g DB)	Pr(>F)	0.7235	
		Conditional R2	0.793	
		LSMeansDiff	-3.33	
		LSMeansDiffCI	-38.6<->31.9	
		LSMeansPctDiff	-0.973	
		LSMeansPctDiffCI	-11.3<->9.31	
LB		LSMean	479	489.7
		95% CI	417<->541	428<->552
		Range	(454-509)	(475-519)
		N	3	3
	valine (mg/100 g DB)	Pr(>F)	0.2064	
		Conditional R2	0.933	
		LSMeansDiff	-10.7	
		LSMeansDiffCI	-35.5<->14.2	
		LSMeansPctDiff	-2.18	
		LSMeansPctDiffCI	-7.26<->2.9	
LB		LSMean	314	316.7
		95% CI	280<->348	282<->351
		Range	(300-330)	(306-331)
		N	3	3
	threonine (mg/100 g DB)	Pr(>F)	0.2507	
		Conditional R2	0.979	
		LSMeansDiff	-2.67	
		LSMeansDiffCI	-9.84<->4.5	
		LSMeansPctDiff	-0.842	
		LSMeansPctDiffCI	-3.11<->1.42	
LB		LSMean	389.7	396.3
		95% CI	346<->434	352<->440
		Range	(373-410)	(382-415)
		N	3	3
	glycine (mg/100 g DB)	Pr(>F)	0.031	
		Conditional R2	0.993	
		LSMeansDiff	-6.67	
		LSMeansDiffCI	-11.8<->-1.5	
		LSMeansPctDiff	-1.68	
		LSMeansPctDiffCI	-2.99<->-0.378	
LB		LSMean	742.3	748.3

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Table 46. Single-site analysis for grain amino acids: San Mateo

Loc	Analyte	Statistic	GR2E	RC82
SM		LSMean	191.3	200.7
		95% CI	172<->211	181<->220
		Range	(185-204)	(190-215)
		N	3	3
	methionine (mg/100 g DB)	Pr(>F)	0.4404	
		Conditional R2	0.154	
		LSMeansDiff	-9.33	
		LSMeansDiffCI	-36.5<->17.8	
		LSMeansPctDiff	-4.65	
		LSMeansPctDiffCI	-18.2<->8.87	
SM		LSMean	393.3	404
		95% CI	333<->454	344<->464
		Range	(351-443)	(385-434)
		N	3	3
	lysine (mg/100 g DB)	Pr(>F)	0.7622	
		Conditional R2	0.0234	
		LSMeansDiff	-10.7	
		LSMeansDiffCI	-96.2<->74.9	
		LSMeansPctDiff	-2.64	
		LSMeansPctDiffCI	-23.8<->18.5	
SM		LSMean	720.3	663
		95% CI	653<->787	596<->730
		Range	(693-737)	(622-694)
		N	3	3
	arginine (mg/100 g DB)	Pr(>F)	0.03117	
		Conditional R2	0.918	
		LSMeansDiff	57.3	
		LSMeansDiffCI	12.7<->102	
		LSMeansPctDiff	8.65	
		LSMeansPctDiffCI	1.92<->15.4	
SM		LSMean	262.3	251.3
		95% CI	232<->293	221<->282
		Range	(250-276)	(239-263)
		N	3	3
	histidine (mg/100 g DB)	Pr(>F)	0.01084	
		Conditional R2	0.99	
		LSMeansDiff	11	
		LSMeansDiffCI	6.03<->16	
		LSMeansPctDiff	4.38	
		LSMeansPctDiffCI	2.4<->6.35	
SM		LSMean	831	794.7
		95% CI	725<->937	689<->901
		Range	(772-884)	(759-829)
		N	3	3
	leucine (mg/100 g DB)	Pr(>F)	0.09868	
		Conditional R2	0.912	
		LSMeansDiff	36.3	
		LSMeansDiffCI	-16.8<->89.5	
		LSMeansPctDiff	4.57	
		LSMeansPctDiffCI	-2.11<->11.3	
SM		LSMean	556	526.7
		95% CI	485<->627	456<->598
		Range	(520-593)	(502-550)
		N	3	3
	phenylalanine (mg/100 g DB)	Pr(>F)	0.05687	
		Conditional R2	0.934	
		LSMeansDiff	29.3	
		LSMeansDiffCI	-2.12<->60.8	
		LSMeansPctDiff	5.57	
		LSMeansPctDiffCI	-0.403<->11.5	
SM		LSMean	591.3	578.3

Loc	Analyte	Statistic	GR2E	RC82
SM		LSMean	178.7	186.3
		95% CI	159<->198	167<->206
		Range	(170-191)	(172-197)
		N	3	3
	cystine (mg/100 g DB)	Pr(>F)	0.515	
		Conditional R2	0.11	
		LSMeansDiff	-7.67	
		LSMeansDiffCI	-34.8<->19.5	
		LSMeansPctDiff	-4.11	
		LSMeansPctDiffCI	-18.7<->10.5	
SM		LSMean	83.33	88.83
		95% CI	69.5<->97.2	75<->103
		Range	(75.1-97.1)	(87.2-91.6)
		N	3	3
	tryptophan (mg/100 g DB)	Pr(>F)	0.5178	
		Conditional R2	0.108	
		LSMeansDiff	-5.5	
		LSMeansDiffCI	-25.1<->14.1	
		LSMeansPctDiff	-6.19	
		LSMeansPctDiffCI	-28.3<->15.9	
SM		LSMean	425.3	410
		95% CI	376<->475	360<->460
		Range	(400-446)	(392-428)
		N	3	3
	isoleucine (mg/100 g DB)	Pr(>F)	0.05391	
		Conditional R2	0.959	
		LSMeansDiff	15.3	
		LSMeansDiffCI	-0.638<->31.3	
		LSMeansPctDiff	3.74	
		LSMeansPctDiffCI	-0.155<->7.64	
SM		LSMean	597.7	578.7
		95% CI	530<->666	511<->647
		Range	(562-626)	(554-603)
		N	3	3
	valine (mg/100 g DB)	Pr(>F)	0.07619	
		Conditional R2	0.951	
		LSMeansDiff	19	
		LSMeansDiffCI	-4.96<->43	
		LSMeansPctDiff	3.28	
		LSMeansPctDiffCI	-0.856<->7.42	
SM		LSMean	386	372
		95% CI	347<->425	333<->411
		Range	(368-400)	(355-384)
		N	3	3
	threonine (mg/100 g DB)	Pr(>F)	0.005063	
		Conditional R2	0.995	
		LSMeansDiff	14	
		LSMeansDiffCI	9.7<->18.3	
		LSMeansPctDiff	3.76	
		LSMeansPctDiffCI	2.61<->4.92	
SM		LSMean	481	466.7
		95% CI	436<->526	422<->512
		Range	(460-495)	(447-483)
		N	3	3
	glycine (mg/100 g DB)	Pr(>F)	0.01647	
		Conditional R2	0.987	
		LSMeansDiff	14.3	
		LSMeansDiffCI	6.35<->22.3	
		LSMeansPctDiff	3.07	
		LSMeansPctDiffCI	1.36<->4.78	
SM		LSMean	961.7	949

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Table 47. Single-site analysis for grain vitamins: Batac City and Los Baños

Loc	Analyte	Statistic	GR2E	RC82
BC	beta-carotene (mg/kg DB)	LSMean	1.207	0.0398
		95% CI	1.08<->1.33	-0.0817<->0.161
		Range	(1.15-1.24)	(0.066-0.07)
		N	3	2
		Pr(>F)	0.001575	
		Conditional R2	1	
		LSMeansDiff	1.17	
		LSMeansDiffCI	1.13<->1.2	
		LSMeansPctDiff	2930	
		LSMeansPctDiffCI	2840<->3020	
BC	riboflavin (mg/kg DB)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
BC	niacin (mg/kg DB)	LSMean	57.69	41.72
		95% CI	56.2<->59.2	40.2<->43.2
		Range	(56.7-58.3)	(40.8-42.8)
		N	3	3
		Pr(>F)	0.002297	
		Conditional R2	0.989	
		LSMeansDiff	16	
		LSMeansDiffCI	13.8<->18.1	
		LSMeansPctDiff	38.3	
		LSMeansPctDiffCI	33.2<->43.4	
BC	pyridoxine (mg/kg DB)	LSMean	3.027	3.083
		95% CI	2.3<->3.75	2.36<->3.81
		Range	(2.66-3.3)	(2.79-3.3)
		N	3	3
		Pr(>F)	0.2784	
		Conditional R2	0.975	
		LSMeansDiff	-0.0567	
		LSMeansDiffCI	-0.222<->0.109	
		LSMeansPctDiff	-1.84	
		LSMeansPctDiffCI	-7.2<->3.53	

Loc	Analyte	Statistic	GR2E	RC82
BC	thiamine (mg/kg DB)	LSMean	3.607	3.528
		95% CI	3.08<->4.13	3<->4.05
		Range	(3.34-3.77)	(3.31-3.81)
		N	3	3
		Pr(>F)	0.4425	
		Conditional R2	0.83	
		LSMeansDiff	0.0795	
		LSMeansDiffCI	-0.281<->0.44	
		LSMeansPctDiff	2.25	
		LSMeansPctDiffCI	-7.95<->12.5	
BC	folic acid (mg/kg DB)	LSMean	0.8726	0.9274
		95% CI	0.754<->0.992	0.808<->1.05
		Range	(0.858-0.889)	(0.857-1.05)
		N	3	3
		Pr(>F)	0.462	
		Conditional R2	0.14	
		LSMeansDiff	-0.0548	
		LSMeansDiffCI	-0.223<->0.114	
		LSMeansPctDiff	-5.91	
		LSMeansPctDiffCI	-24.1<->12.3	
BC	pantothenic acid (mg/kg DB)	LSMean	11.43	11.31
		95% CI	10.9<->12	10.8<->11.9
		Range	(11.1-11.9)	(11.1-11.4)
		N	3	3
		Pr(>F)	0.5768	
		Conditional R2	0.52	
		LSMeansDiff	0.116	
		LSMeansDiffCI	-0.64<->0.872	
		LSMeansPctDiff	1.03	
		LSMeansPctDiffCI	-5.66<->7.71	
BC		LSMean	2.95	2.713
		95% CI	2.51<->3.39	2.27<->3.16
		Range	(2.61-3.15)	(2.46-2.97)

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Table 48. Single-site analysis for grain vitamins: Muñoz and San Mateo

Loc	Analyte	Statistic	GR2E	RC82
MZ	beta-carotene (mg/kg DB)	Mean	1.49	NaN
		Range	(1.18-1.85)	(Inf--Inf)
		N	3	0
MZ	riboflavin (mg/kg DB)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
MZ	folic acid (mg/kg DB)	LSMean	0.6737	0.8166
		95% CI	0.436<->0.911	0.579<->1.05
		Range	(0.616-0.776)	(0.735-0.936)
		N	3	3
		Pr(>F)	0.007482	
		Conditional R2	0.985	
		LSMeansDiff	-0.143	
		LSMeansDiffCI	-0.196<->-0.0894	
		LSMeansPctDiff	-17.5	
		LSMeansPctDiffCI	-24.1<->-10.9	
MZ	pantothenic acid (mg/kg DB)	LSMean	7.509	7.579
		95% CI	7.03<->7.99	7.1<->8.06
		Range	(7.31-7.7)	(7.22-7.97)
		N	3	3
		Pr(>F)	0.8018	
		Conditional R2	0.0161	
		LSMeansDiff	-0.0698	
		LSMeansDiffCI	-0.748<->0.608	
		LSMeansPctDiff	-0.921	
		LSMeansPctDiffCI	-9.87<->8.02	
MZ	alpha-tocopherol (mg/kg DB)	LSMean	2.63	2.26
		95% CI	2.29<->2.97	1.92<->2.6
		Range	(2.49-2.88)	(2.1-2.49)
		N	3	3
		Pr(>F)	0.1645	
		Conditional R2	0.481	
		LSMeansDiff	0.37	
		LSMeansDiffCI	-0.108<->0.848	
		LSMeansPctDiff	16.4	
		LSMeansPctDiffCI	-4.77<->37.5	
SM	riboflavin (mg/kg DB)	Mean	NaN	NaN
		Range	(Inf--Inf)	(Inf--Inf)
		N	0	0
SM	folic acid (mg/kg DB)	LSMean	0.8474	1.227
		95% CI	0.597<->1.1	0.976<->1.48
		Range	(0.748-0.943)	(1.1-1.41)
		N	3	3
		Pr(>F)	0.0308	
		Conditional R2	0.886	
		LSMeansDiff	-0.38	
		LSMeansDiffCI	-0.673<->-0.0861	
		LSMeansPctDiff	-30.9	
		LSMeansPctDiffCI	-54.8<->-7.02	
SM		LSMean	8.185	8.018

Loc	Analyte	Statistic	GR2E	RC82
MZ	thiamine (mg/kg DB)	LSMean	2.449	2.471
		95% CI	2.2<->2.7	2.22<->2.72
		Range	(2.34-2.6)	(2.35-2.66)
		N	3	3
		Pr(>F)	0.8782	
		Conditional R2	0.00599	
		LSMeansDiff	-0.0218	
		LSMeansDiffCI	-0.371<->0.327	
		LSMeansPctDiff	-0.882	
		LSMeansPctDiffCI	-15<->13.2	
MZ	niacin (mg/kg DB)	LSMean	35.31	38.9
		95% CI	29<->41.6	32.6<->45.2
		Range	(31.1-39.1)	(37.2-40.9)
		N	3	3
		Pr(>F)	0.114	
		Conditional R2	0.807	
		LSMeansDiff	-3.58	
		LSMeansDiffCI	-9.29<->2.12	
		LSMeansPctDiff	-9.21	
		LSMeansPctDiffCI	-23.9<->5.46	
MZ	pyridoxine (mg/kg DB)	LSMean	2.4	2.42
		95% CI	2.16<->2.64	2.18<->2.66
		Range	(2.37-2.42)	(2.28-2.66)
		N	3	3
		Pr(>F)	0.8844	
		Conditional R2	0.00539	
		LSMeansDiff	-0.02	
		LSMeansDiffCI	-0.357<->0.317	
		LSMeansPctDiff	-0.826	
		LSMeansPctDiffCI	-14.8<->13.1	
SM	beta-carotene (mg/kg DB)	LSMean	1.633	0.0631
		95% CI	1.39<->1.87	-0.176<->0.302
		Range	(1.4-1.81)	(0.058-0.067)
		N	3	3
		Pr(>F)	0.005956	
		Conditional R2	0.971	
		LSMeansDiff	1.57	
		LSMeansDiffCI	1.23<->1.91	
		LSMeansPctDiff	2490	
		LSMeansPctDiffCI	1950<->3020	
SM	niacin (mg/kg DB)	LSMean	41.64	46.16
		95% CI	34.4<->48.8	38.9<->53.4
		Range	(35.5-45.8)	(44.7-48.8)
		N	3	3
		Pr(>F)	0.216	
		Conditional R2	0.589	
		LSMeansDiff	-4.52	
		LSMeansDiffCI	-15.4<->6.37	
		LSMeansPctDiff	-9.8	
		LSMeansPctDiffCI	-33.4<->13.8	

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