Author's response to reviews

Title: Agrarian diet and diseases of affluence - Do evolutionary novel dietary lectins cause leptin resistance?

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Point-by-point description of the changes made:

1. Changed section heading Discussion to Global epidemiologic pattern.
2. The former section heading Conclusions have been divided into Presentation of the hypothesis and Implications of the hypothesis, and a new section Testing the hypothesis has been added in between:

   “Testing the hypothesis
   The earlier postulated hypothesis that an agrarian diet including large amounts of seeds from grass could initiate diseases of affluence should ideally be tested by large scale prospective diet interventions comparing this diet with non-agrarian diets. Hard end-points should be various diseases of affluence and soft end-points their respective risk factors, specifically including leptin resistance to test our hypothesis that leptin resistance could be a sign of insufficient adaptation to an agrarian diet. The hypothesis that cereal lectins might be the cause of leptin resistance could be tested by evaluating the effects of grass lectins on the leptin system in vivo by diet interventions or in vitro in various leptin and/or leptin receptor models.”

3. Two new sentences on the consequences were the hypothesis true have been added at the end to Implications of the hypothesis:
   “The wider consequences if the hypothesis were true would be a major enhancement in our understanding of dietary interactions with endocrine disorders. The possibility of preventing and treating diseases of affluence through the removal of cereal lectins has also not escaped the authors.”

4. The Abstract have been rewritten according to the above changes in 1-3.
5. The section headings Competing interests (none), Authors' contributions and Acknowledgements (none) have been added:

   “Authors' contributions:
   TJ conceived of and wrote the article. SO and SL conceived of and participated in the design of the article, and revised it critically for important intellectual content. BA, TB and AD have been involved in drafting the manuscript and revising it critically for important intellectual content. All authors read and approved the final manuscript.”

6. The scope of this article makes it impossible to shorten the manuscript (5309 words) to the ideal length of maximum 1500 words described for Hypothesis articles. The emphasis is instead on clearly stating the background to the hypothesis and its aims from the standpoint of researchers without specialist knowledge in the diverse areas in the article, and also covering previously published results on which the hypothesis is based.