

R020-A: Commercial Application of Soybean Stalk as a New Alternative Fiber in Particle Boards

Submitted by NDSU

Principal Investigator: Dilpreet Bajwa

Request for \$200,400; Total Project Costs \$400,800

**Technical Advisor Comments**

- Two reviewers recommended fund, one recommended funding may be considered.
- The 50% match comes from industry, 27% of it is cash.
- All reviewers felt the project was achievable. 1 reviewer stated, "One suggestion is to study the thermal stability of the materials as temperature rise during process might cause degradation of materials."
- 2 reviewers felt the methodology was average and would have benefitted with more detail.
- 2 reviewers felt the scientific contribution was small.
- 2 reviewers felt the awareness of other research was adequate. 1 felt it was limited.
  - The applicant provided a list of references in the clarification.
- All 3 reviewers felt the background of the investigators was sufficient.
- All 3 reviewers felt the management plan was adequate.
- Regarding the proposed purchase of equipment:
  - 1 reviewer would have liked a quote from the manufacturers.
  - 1 reviewer felt the proposed equipment, while necessary for project completion, are "not particularly specialized pieces of equipment and would already be available at most university research laboratories related to characterizing material properties."
  - 1 reviewer stated, "Justification is lacking for the small portion of the requested budget that is dedicated for equipment purchases. At this small amount it's not concerning, but this could be a follow-up question to ask the team, just for program clarity."
- Regarding the value of the proposed budget, 2 reviewers felt that apart from the equipment, the proposal budget was adequate. 1 felt that it had very high value, as costs of the project would be much higher in a corporate R&D setting.
- Overall:
  - 1 reviewer felt "this project will be beneficial to the industry and economy of ND although the proposal can be further improved technically in some aspects. The collaboration and commitment from Masonite will be critical to this project. Although CO-PIs from Masonite are included, but there is no commitment letter from the company.
  - 1 reviewer stated, "The topic of the proposal is rather low-tech and not very innovative. I don't anticipate any significant scientific innovations coming out of the proposed research. The proposed economic impact of the proposed work is completely unsubstantiated in the proposal. For example, the investigators contend that the economic impact is estimated to be \$6 million/year, but give no justification for how that estimate was calculated."
    - The applicant has clarified this by citing several factors, including new raw material purchase, increased payroll, growth forecast, energy use, material handling and transportation cost, business lost due to lack of adequate amount of suitable quality raw material (wheat straw), the cost of business opportunity lost with the increase in raw material cost, and the increase in production possible with the recovery of building industry if adequate raw material is available.
  - 1 reviewer stated, "This seems like a very pragmatic effort to develop new economic value from a local renewable resource. The team seems very well-positioned for the project. If it's successful (and they have early results to indicate a high likelihood of success) a local commercial partner is already involved. This seems like a generally low-risk project that is very much in line with the objectives of the ND state program."

**Technical Advisor Recommendations**

Fund. The proposal has a clear roadmap to commercialization and is strengthened with industry match. If successful, this project has the potential to retain a manufacturing facility in ND and expand its revenue, as well as provide a new revenue stream for agriculture producers. An added benefit of this proposal is that research from a ND university will be commercialized.

However, given the reviewers' comments, additional discussion and justification of the equipment purchases may be beneficial. The Council may also want to have a discussion regarding the indirect rate, which is currently proposed at 45% (\$48,228.)

**Suggested Contingencies If Funded**

- Remove funds for travel to conferences (\$2,100). This would be consistent with activities that have been funded in the past.