

Project Title: Assessing the costs of transitioning land to certified organic in processed vegetable production

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Objectives for 2007:

- 1) Develop and moderate a workshop to discuss hypothetical crop rotation strategies that would allow conversion of land to organic processed vegetable production without exacerbating weed or pest positions.
 - Invite industry leaders to help develop crop rotations
 - Invite potential forage consumers/buyers to help focus on projected forage needs of regional dairies or other livestock operations.
- 2) Compare the economics of two developed rotations during the 3-year transition and the economic impacts on the budgets of the following processed vegetable crops.
- 3) Conduct *A Grower's Technology Economic Assessment Model (TEAM)* workshop that would assist growers in determining the economics of their transitional crop rotations.
- 4) Publish economic analysis of the developed 'transitional' rotational strategies, including enterprise budget worksheets.
- 5) Field work: Begin preliminary evaluations of strategies for transitioning to organic production

Results

1) Five processed vegetable growers interested in transitioning to organic met in March of 2007 to develop economically and biologically appropriate rotational strategies to span the three years required for conversion of conventional to organic. Other invited participants included members of the dairy industry and organic certification experts. During the first half of the meeting, enterprise budgets were updated for several processed vegetables. Then workshop participants began developing hypothetical and practical crop rotations to move from conventional to organic production. Five of these rotations are presented in the table below.

2) Organic transition rotations were developed for the 3-year transition period. Below are five rotations developed for economic analysis:

- 1) Tall fescue grown for three crop cycles (F/F/F).
- 2) Tall fescue grown for two crop cycles followed by sweet corn (F/F/SC).
- 3) Tall fescue with a fall cover crop, followed by two crop cycles of forage and grazing (Ffc/Fg/Fg).
- 4) Tall fescue followed by sweet corn for two crop cycles (F/SC/SC).
- 5) Cauliflower followed by sweet corn and then a summer annual (C/SC/SA).

Organic production budgets were developed for each crop in the transition rotation as well as for four crops targeting the organic processed vegetable market. The rotation combinations were selected based upon current crop make-up in the Willamette Valley. Table 1 shows the net returns for each rotation. Transition crop returns were low due to reduced chemical inputs and corresponding lowering crop yield without the increase in crop value as these crops are not certified organic. The rotation with the highest Net Present Value (NPV) per acre for the transition period was F/F/SC at \$693 compared to F/Fg/Fg, the lowest, at \$209. Only F/F/SC and F/SC/SC had positive per acre annual returns for all three transition years.

Table 1. Annual Net Returns and Net Present Value of Selected Organic Transition Crop Rotations, per Acre

Rotation	Annual Net Returns			NPV ¹
	YR 1	YR 2	YR 3	
F/F/F	\$ 416	\$ 197	\$ (109)	\$ 460
F/F/SC	416	197	202	693
Ffc/Fg/Fg	386	(88)	(91)	209
F/SC/SC	386	230	13	550
C/SC/SA	268	35	(70)	220

¹Total annual net returns based on a 10% discount rate and inflating all cash costs by 3% annually in years 2 and 3.

Table 2 shows production costs and returns of four organically produced vegetables for the processed market. Organic cauliflower grown in the fourth year, the first year after the transition period, had the highest net returns per acre (returns minus cash costs) \$729, a NPV of \$498.

Sweet corn had the lowest net return per acre at \$167, a NPV of \$114. Broccoli had the highest returns and cash costs per acre. This assessment of transition rotations and organic crop economics suggest that growers can maximize their returns by selecting a transition rotation of tall fescue grown for two crop cycles followed by sweet corn (F/F/SC) followed by organic cauliflower. However, it should be noted market conditions and a grower's familiarity with a crop should also be considered during this decision making process.

Table 2. Production Economics of Selected Process Market Organic Crops

Organic Crop	Returns	Cash Costs	Net Return	Net Return NPV ¹
Bush Beans	\$1,485	\$1,108	\$ 377	\$ 257
Sweet Corn	1,049	882	167	114
Broccoli	2,437	1,934	503	344
Cauliflower	2,328	1,599	729	498

¹The net present value of each organic crops' net return in 4 years based on a 10% discount rate and inflating all cash costs by 3% annually in years 2, 3 and 4.

3) Team workshop: November 26, 2007

- 4 growers
- 3 hour training: TEAM software program use and interpreting results of analysis.
- Discussed organic transition crop rotations for organic processed vegetable production.
- Developed Crop rotations to be distributed on-line in March 2008



4) Enterprise budgets showing costs and returns of growing processed market organic vegetables: sweet corn, bush beans, broccoli, and cauliflower were developed and are in review. Budgets will be distributed on-line in March 2008

5) Ongoing field work: One of the cooperating growers began transitioning a small piece of land to organic near Lebanon. The site has a history of curly dock, a perennial weed with a long tap root and long seed life that is a challenge in organic systems. We will be monitoring perennial weed density as the rotation continues, and the steps need to abate the spread of curly dock and others. Additionally, we will begin monitoring the activity-density of carabid beetles and seed predation potential in 2008.